

INVITATION TO BID**ARMD/2024/12**

**BID DESCRIPTION: SUBMARINE REFIT SUPPORT CONTRACT AT
ARMSCOR DOCKYARD**

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PROPRIETARY INFORMATION

- Bid documents may **ONLY** be obtained from the Armscor Supply Chain Management Department.
- Bid documents obtained from Armscor may **NOT** be given to a third party.
- Bid proposals received from companies whose bid documents were **NOT** obtained from Armscor will **NOT** be considered.

Bids may be submitted in hard copy or electronically.

**Kindly register on the National Treasury's Central Supplier Database (CSD)
via www.csd.gov.za**

RETURNABLE DOCUMENTS CHECKLIST

Bidders are required to develop a returnable schedule annexure in accordance with the following table of contents

	List of documents required.	Submitted [Yes or No]	
		Yes	No
1.	Central Supplier database (CSD) registration report or Unique Registration Reference Number	☐	☐
2.	Valid Tax Clearance Certificate (s) and or proof of application endorsed by SARS and / or SARS issued verification pin code.	☐	☐
3.	Copies of bidders CIPC Company registration documents listing all members with percentage, See bidding structure for required documents.	☐	☐
4.	Copy of the Joint Venture / Consortium Agreement duly signed by all parties	☐	☐
5.	Copy of the Sub-Contracting Agreement duly signed by all parties	☐	☐
6.	Valid proof of BBBEE status for the bidder and its sub-contractor(s)	☐	☐
7.	Designated sectors: Local production and content. (Where applicable)	☐	☐
8.	Originally certified copy of Identity Document for the Company representative	☐	☐
9.	Copy of latest audited financial statements	☐	☐
10.	Bid conditions acceptance form on KD17	☐	☐

**ARMAMENTS CORPORATION OF SOUTH AFRICA SOC LTD
(ARMSCOR)**

Company registration: 1968/008611/06 Vat registration: 4500101169

**REQUEST FOR BID: ARMD/2024/12 - SUBMARINE REFIT SUPPORT
CONTRACT AT ARMSCOR DOCKYARD**

1. INSTRUCTIONS ON SUBMISSION OF BIDS

- 1.1 Bid Closing at **11:00 am on 28/01/2025 (SOUTH AFRICAN TIME)**
- 1.2 Bids must be submitted in a sealed envelope marked with this bid reference number.
- 1.3 The sealed envelope must be deposited in the bid box at Armscor Dockyard, Cole Point Security gate, Simon's Town before the bid closing date and time addressed to:

The Divisional Manager Procurement & Logistics
Armsecor Dockyard

Postal address: Armscor Dockyard
Private Bag X3
Simon's Town, 7995

Delivery address: Armscor Dockyard Tender Box
Dockyard Security Entrance
Cole Point Road
Simon's Town

- 1.4 Bids dispatched by the courier service Company must be marked with bid reference number on the delivery note / packaging and the courier must ensure that the bid document is deposited in the bid box before the closing date and time. **Arm Scor will not be held responsible for any delays where bid documents are handed to the Arm Scor Reception.**
- 1.5 Bid proposals received after the closing time and date will not be considered.

2. ENQUIRIES

- 2.1 All queries regarding this bid must be addressed in writing to:
The Procurement Division E-mail Address: **Dockyardbid-enquiries@armscor.co.za**.
Questions/enquiries relating to this RFB should be received three working days prior to the closing date. Queries received after this period will not be entertained.

3. BID VALIDITY PERIOD

Bid proposals to remain valid for acceptance for a period of **hundred and twenty (120)** days counted from the closing date.

NOTE: Bids for the supply of the goods and/or services described in the attached documents are invited in accordance with the provisions of the General Conditions of Contract (A-STD-0020) Issue 5 dated 22 June 2022 , as well as any special condition contained in these documents. Copies of the General Conditions of Contract and the Rules of Procedure are available on Armscor's website at www.armscor.co.za.

BID AWARD RESULTS:

Result on bid awarding information is not sent to unsuccessful bidders. Particulars of successful bidders are also NOT published on the Armscor Acquisition Bulletin.

BIDDING STRUCTURE

Indicate the type of bidding structure by marking with an 'X' in an appropriate box.	
Individual Bidder	
Joint Venture	
Consortium	
Using Sub-contractors	
Other	

Only fill the relevant category:

If individual bidder, indicate the following:	
Name of Bidder	
Company / Close Corporation Registration Number	
VAT Registration Number	
National Treasury Supplier Number	
Unique Registration Reference Number	
Contact Person	
Telephone Number	
Fax Number	
Email Address	
Postal Address	
Physical Address	
NB: Submit with the bid the following documents:	
Copies of the bidder's CIPC company registration documents listing all members with percentages, in case of a CC.	
In case of individual supply ID document for local and if foreigner supply passport number or identification as applicable in that country.	
Latest copies of all share certificates, in case of a company or any other form of a legal entity.	
Shareholding breakdown per race, gender and percentage shareholding with shareholders of the bidding entity.	

If Joint Venture or Consortium, indicate the following: (To be completed for each JV/Consortium member)	
Name of Joint Venture / Consortium	
Company / Close Corporation Registration Number	
VAT Registration Number	
National Treasury Supplier Number	
Unique Registration Reference Number	
Contact Person	
Telephone Number	
Fax Number	
Email Address	
Postal Address	
Physical Address	
NB: Submit with the bid the following documents:	
Copies of the bidder's CIPC company registration documents listing all members with percentages, in case of a CC.	
In case of individual supply ID document for local and if foreigner supply passport number or identification as applicable in that country.	
Latest copies of all share certificates, in case of a company or any other form of a legal entity.	
Shareholding breakdown per race, gender and percentage shareholding with shareholders of the bidding entity.	

If using subcontractors, indicate the following:	
Name of Prime -Contractor	
Percentage Value to be subcontracted	
Company / Close Corporation Registration Number	
VAT Registration Number	
National Treasury Supplier Number	
Unique Registration Reference Number	
Contact Person	
Telephone Number	
Fax Number	
Email Address	
Postal Address	
Physical Address	
Subcontractor Details:	
Name of Subcontractor	
Company / Close Corporation Registration Number	
VAT Registration Number	
National Treasury Supplier Number	
Unique Registration Reference Number	
Contact Person	
Telephone Number	
Fax Number	
Email Address	
Postal Address	
Physical Address	
NB: Submit with the bid the following documents for both Prime and Sub-Contractors:	
Copies of the bidder's CIPC company registration documents listing all members with percentages, in case of a CC.	
In case of individual supply ID document for local and if foreigner supply passport number or identification as applicable in that country.	
Latest copies of all share certificates, in case of a company or any other form of a legal entity.	
Shareholding breakdown per race, gender and percentage shareholding with shareholders of the bidding entity.	

Other:	
Name of Bidder	
Company / Close Corporation Registration Number	
VAT Registration Number	
National Treasury Supplier Number	
Unique Registration Reference Number	
Contact Person	
Telephone Number	
Fax Number	
Email Address	
Postal Address	
Physical Address	
NB: Submit with the bid the following documents:	
Copies of the bidder's CIPC company registration documents listing all members with percentages, in case of a CC.	
In case of individual supply ID document for local and if foreigner supply passport number or identification as applicable in that country.	
Latest copies of all share certificates, in case of a company or any other form of a legal entity.	
Shareholding breakdown per race, gender and percentage shareholding with shareholders of the bidding entity.	

Declaration:

I, as the duly authorized representative of the bidder hereby authorize Armscor to request, investigate and process company information including tax compliance via the SARS website.

.....
Name

.....
ID number

BID CONDITIONS ACCEPTANCE FORM

Bidders shall complete and sign this bid conditions acceptance form

I/We hereby offer to supply all of the supplies and/or services described in the Pricing Schedule and /or attached documents on the terms and conditions and in accordance with the conditions set out in A-STD-0020 Issue 5 dated 22 June 2022 (and I/we acknowledge that I/we am/are acquainted therewith) at the price and on the terms of delivery/execution inserted by me/us.

I/We agree -

1. that this bid shall remain binding on me/us and open for acceptance for the period stipulated above;
2. that if my/our bids is accepted, the acceptance will be communicated to me/us by letter or order through the post, and such acceptance shall constitute a contract between me/us and Armscor, subject to the terms and conditions set out in Armscor's General Conditions of Contract (A-STD-0020), Issue 5 dated 22 July 2022, the contents of which I/we acknowledge ourselves to be acquainted with.

I/We choose as domicilium citandi et executandi in the Republic

.....

 (no post box or private bag)

IN BLOCK LETTERS ON BEHALF OF -

Complete registered:

Name of bidder:

AUTHORISED SIGNATURE

..... Date:

Name in block letters:

Capacity:

SUPPLIER REGISTRATION

- 1.1 Bidders must register on the National Treasury Central Supplier Database (CSD) in terms of National Treasury Instruction Note 3 of 2016/17.
- 1.2 Bidders must electronically register for Security on Armscor website to be considered for orders which are administered by Armscor SOC Ltd on Behalf of clients.

For more information on security registration contact:-
The Security Registration
Private Bag X337
PRETORIA
0001

E-mail:- register@armscor.co.za

ALL BIDDERS SHALL COMPLY WITH THE FOLLOWING:

1. The pages of the KD17 document are numbered from one, and the final page bears the words "and last". Bidders should check the numbers of the pages as no liability arising from claims owing to the omission or duplication of pages will be recognised by Armscor. The appendices mentioned in these pages form part of the bids.
2. **All bidders shall -**
 - 2.1. insert their name at the top of each price schedule form used (a rubber stamp may be used);
 - 2.2. insert the information in the spaces provided in the price schedules by writing or typing on the dotted lines only (additional information should be contained in a separate annexure);
 - 2.3. if they wish to make more than one bid against an item, as an alternative, apply for additional copies of the bid documents or photocopy one or more pages, and not retype or redraft any of the forms used;
 - 2.4. indicate the prices quoted in the units shown and quote them per item;
 - 2.5. indicate in respect of each item whether the goods/services quoted comply strictly with the specified requirements, and furnish particulars of deviations if this is not so;
 - 2.6. complete all appendices.
3. **Value-added tax, customs duties, *ad valorem* customs duties and surcharges:**
 - 3.1. Value added tax levied by the Receiver of Revenue must not be included in the prices quoted but be shown as a separate line item.
 - 3.2. Where supplies are quoted which are subject to levying of any customs duty, *ad valorem* customs or excise duty or surcharge by the Department of Customs and Excise, such charges must not be included by the bidder in the prices quoted. The applicable customs duty, *ad valorem* customs or excise duty or surcharge must, however, be indicated separately where provided for on Armscor's Questionnaire (KD 18).
4. **Security:**
 - 4.1. Classified bids are to be handled in the manner set out in Armscor's Security Instruction, document number A-WI-014, copies of which are obtainable on request from the Contractor Security Section, P.O. Box 411, Pretoria, 0001.
 - 4.2. Attention is drawn particularly to the procedure set out in chapter 4 of the manual, which is to be complied with when forwarding classified documents.

5. Advance payments:

Bidders shall furnish the price without advance payment.

6. Performance Guarantee:

Armscor reserves the right to request the successful bidders to submit a performance guarantee for the proposed contract. Bidders must submit prices without provision for the performance guarantee as well as prices including the cost of such a guarantee.

8. Commissions:

If any commission is payable by yourself to any person(s) or body as a result of any order which may arise from this Request for Proposal, you must submit full details of the applicable person(s) or body and the amount payable, with this bids.

9. Compliance with Arms Control and Non-Proliferation requirements

Any bidder responding to this Request for Proposal (RFP) shall comply with the following when dealing with defence matériel:

9.1 All relevant South African legislation, including, but not restricted to, the following:

- a) National Conventional Arms Control Act, Act No. 41 of 2002, and its implementing Regulations; and
- b) Non-proliferation of Weapons of Mass Destruction Act, Act No. 87 of 1993, as amended, and its implementing Regulations.

9.2 Defence export legislation of supplier countries, i.e. countries from which defence matériel is exported to South Africa as well as countries of origin of the matériel.

- 9.3 It is the responsibility of the bidder to, when applicable, register with the Directorate Conventional Arms Control (DCAC), Defence Secretariat, in terms of section 13 of the National Conventional Arms Control Act and with the South African Council for the Non-Proliferation of Weapons of Mass Destruction Act.
- 9.4 If a contract with Armscor is being entered into, the Contractor shall comply with arms control and non-proliferation requirements as prescribed by the contract-

10. Submission of a NCACC Permit

- 10.1 In terms of the National Conventional Arms Control Act (Act No 41 of 2002, Chapter II, section 13), no person may trade in conventional arms, unless that person is:
- a) Registered with the National Conventional Arms Control Committee (NCACC)
 - b) Is in possession of a permit authorised by the NCACC and issued by the Directorate Conventional Arms control (DCAC).

NOTE: Local bidders who trade in Conventional Arms as set out above are required to submit a certified copy of a valid NCACC permit when submitting a bid.

11. Tax Compliance

The conditions detailed in the Instruction for Application for Tax Compliance (KD 25) must be adhered to. Armscor Suppliers /Bidders must remain tax compliant for the duration of their contracts.

12. Defence Industrial Participation and National Industrial Participation

- 12.1 The DIP value threshold of foreign content is based on:

Any single agreement of which the foreign content exceeds USD 2 million; Multiple main agreements concluded within two years of each other, within the framework of a specific project or across different projects, for same and or similar products or services, awarded to the same Seller of which the aggregate value of the foreign content exceeds USD 2 million; Extensions or amendments to the main agreement within the active life of the agreement, which result in the aggregate foreign content value of the project exceeding USD 2 million; Where multiple suppliers are used to address a single Defence Acquisition for the same products or services and the value of the foreign content, in total, exceeds USD 2 million, each supplier shall incur pro rata 50% of the total DIP obligation.

- 12.2 Where a contract to the value of the equivalent of USD10 000 000 or more, is placed on a foreign company, a minimum of 30 % National Industrial Participation (NIP) shall be part of the foreign company's contractual obligations, in addition to the 50 % DIP. This condition is also applicable to all contracts placed on a local company, subcontracting a single foreign company to the aforesaid value or more.

13. Mandatory local production and content for designated sectors

- 13.1 A person awarded a contract in relation to a designated sector, may not sub-contract in such a manner that the local production and content of the overall value of the contract is reduced to below the stipulated minimum threshold.
- 13.2 If there is no designated sector, Armscor will include as a specific condition of the bid, that only locally produced services or goods or locally manufactured goods with a stipulated minimum threshold for local production and content, will be considered.

14. **Awarding of Bids**

The awarding of bids will be in terms of the Preferential Procurement Policy Framework Act, 2000: Preferential Procurement Regulations, 2022 and Armscor Preference Point System of the Preferential Procurement Regulations, 2022.

The applicable points are:

Price: (Pp) 90 Points

Specific Goals: 10 Points

**Total:
100 Points**

The following formula must be used to calculate the points in respect of a bid to a rand value that exceeds R 50 000 000, 00 (all applicable taxes included).

(Armscor may also apply this formula to price quotations with a value of less than R30 000, if and when appropriate):

A maximum of 90 points is allocated for price on the following basis:

90/10

$$Ps = 90 \left(1 - \frac{Pt - Pmin}{Pmin} \right)$$

Where

Ps = Points scored for price of bid under consideration
Pt = Price of bid under consideration
Pmin= Price of lowest acceptable bid

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BID NUMBER : ARMD/2024/12

CLOSING AT 11:00 ON : 28/01/2025

VALIDITY PERIOD: 120 DAYS

NAME OF BIDDER :

ITEM NO	DESCRIPTION	QTY	UNIT PRICE IN FOREIGN CURRENCY	UNIT PRICE IN S.A. CURRENCY	SUBTOTAL
THE PROCUREMENT OF THE SUBMARINE REFIT SUPPORT CONTRACT					
1.	Provide Technical Support on the Refit of the Submarine S102.	lot			
1.1.	Execute activities on S102 according to the SOW provided in Annexure A.	1			
1.2.	Provide Costed List of Special tools and Jigs required to execute refit	1			
1.3.	Provision for Procurement of Spare part required for the refit of S102 on an ad-hoc basis – (Ceiling amount budgeted – invoiced on actual amount via Work Authorisation).	Lot 1			
1.4.	Provided technical support required execute Refit of Submarine S102 on an ad-hoc basis – (Ceiling amount budgeted – invoiced on actual amount via Work Authorisation).	Lot 1			
1.5.	Provide technical oversight on an ad-hoc basis – (Ceiling amount budgeted – invoiced on actual amount via Work Authorisation).	Lot 1			
1.6.	Provide costed Obsolescence report for the Submarine S102.	1			

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1.7.	Technical Data (updated drawings and technical manuals) required for Refit of the Submarine S102	Lot			
1.8.	Provide System Integration Plan	1			
1.9.	Acceptance Test Procedure for S102.	1			
1.10.	Configuration Management Plan	1			
2.	Survey Report for Submarine Refit S103	lot			
2.1.	Provide Costed Survey Report for Submarine Refit S103	1			
2.2.	Develop SOW 2 based on the Survey conducted on S103.	1			
2.3.	Provide a Costed Project Management Report/Plan for Submarine S103 based on SOW 2.	1			
2.4.	Provide Recommended Costed Obsolescence report for the Submarine S103.	1			
2.5.	Provide Costed Special tools and Jigs required to execute	1			
3.	On Job Training (OJT) required for both Armscor Dockyard personnel and SA Navy Personnel.	1			
TOTAL (excluding VAT)					
VAT					
TOTAL (including VAT)					

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Note 1: The amount for training shall be broken own as follows:

- A cost to present each course,
- A unit price per person who attends the course to cover the costs of training material.

1. Delivery address: Armscor Dockyard, Simon's Town
2. * Period required for commencement of delivery, after receipt of order:
3. * Rate of delivery:
4. * Period required for completion of order, after receipt thereof:

*Must be completed by bidder if not completed by Armscor.

**ARMAMENTS CORPORATION OF SOUTH AFRICA LTD
(ARMSCOR)**

QUESTIONNAIRE

REPLIES

1. What is the request for bids number?
2. Price basis of bids (**Delivered into store**):
3. Indicate which of the following applies:

3.1 The prices are fixed.

3.2 The prices are not fixed
4. The delivery period fixed
5. Are you the accredited agent in the RSA for the manufacturer of the supplies quoted by you?

WHERE SUPPLIES OFFERED ARE TO BE IMPORTED OR ARE OFFERED EX BONDED WAREHOUSE, THE ATTACHED SECURITY QUESTIONNAIRE (KD 22) MUST BE COMPLETED AND THE FOLLOWING QUESTIONS ANSWERED:

6. Is a special import permit required?
 If not, state your imports permit number
7. What are the names and addresses of your overseas suppliers? (Give particulars in KD 22)
8. Foreign content:

8.1 What amount in foreign currency must be remitted? overseas?

8.2 What is the rate of exchange used in converting the ZAR1, 00 =
 amount into SA Rand and the date on which this is based? DATE:
9. Statutory costs:

9.1 Are the goods quoted on subject to customs duty, ad valorem customs or surcharge?

.../2

9.2 If so, what is the amount payable in respect of

a) Customs duty

b) Ad valorem customs duty?

10. The following particulars must be furnished, failure of which may invalidate the bids:

		AMOUNT	% OF TOTAL PRICE
10.1	FOB/FCA cost of item		
10.2	Sea/Air freight		
10.3	Insurance charges		
10.4	Clearance charges		
10.5	Customs duties		
10.6	Ad valorem customs duties		
10.7	Delivery costs from port/airport to your premises		
10.8	Local content (excluding (10.10))		
10.9	Delivery costs from your premises into store		
10.10	Balance (detail to be submitted)		
	TOTAL		

DATE _____

BIDDER'S SIGNATURE

-1-

**ARMAMENTS CORPORATION OF S.A. LIMITED
(ARMSCOR)**

PREVIOUS PURCHASES

LAST TWO BIDS

If any similar or identical equipment has been supplied to ARMSCOR,
or to any of ARMSCOR'S subsidiaries or the South African National Defence
Force, the completion of this form by bidders is compulsory.

DATE OF BIDS	ORGANIZATION	ORDER NO.	ITEMS PURCHASED	UNIT PRICE	MOTIVATION FOR PRICE DIFFERENCES

BIDDER:	
SURNAME AND INITIALS:	
DATE:	
SIGNATURE:	

-1-

**ARMAMENTS CORPORATION OF SOUTH AFRICA LIMITED
(ARMSCOR)**

SECURITY QUESTIONNAIRE ON THE IMPORTED CONTENT OF BIDS

1. In all cases where the supplies quoted are imported (either in full or in part), bidders shall furnish the following particulars (if space is insufficient, use additional pages):

1.1 COUNTRY OF ORIGIN:

Item No(s).	Country
.....	
.....	
.....	
.....	

1.2 NAME OF MANUFACTURER(S)/SUPPLIER(S)/STOCKIST(S):

Item No(s).	Name
.....	
.....	
.....	
.....	

1.3 NAME OF INTERMEDIARY (IES) (WHEN THERE IS NO DIRECT CONTACT WITH THE FIRMS LISTED IN 1.2):

Item No(s).	Name
.....	
.....	
.....	
.....	

1.4 NAME OF AGENTS RESPONSIBLE FOR SHIPPING AND CLEARANCE:

Item No(s)	Name
.....	
.....	
.....	
.....	

1.5 NAME OF BANK ARRANGING TRANSFER OF FUNDS OVERSEAS:

Item No(s).	Name
.....	
.....	
.....	
.....	

.../2

-2-

1.6 IS AN END-USER CERTIFICATE REQUIRED? YES/NO
If yes:-
Item No. (s).

.....
.....
.....
.....

1.7 ARE THE ITEMS SUBJECT TO ANY SPECIAL EXPORT REQUIREMENTS? YES/NO
If Yes:-
Item No. (s).

Requirements

.....	
.....	
.....	
.....	

2. Failure to furnish the information requested may render the bid invalid.

.....
NAME

.....
DATE

.....
BIDDER'S SIGNATURE

BROAD-BASED BLACK ECONOMIC EMPOWERMENT**ACRONYMS AND ABBREVIATIONS**

B-BBEE	Broad-Based Black Economic Empowerment
CIPC	Companies and Intellectual Property Commission
EME	Exempted Micro Enterprise
QSE	Qualifying Small Enterprise
SANAS	South African National Accreditation Systems
The dtic	The Department of Trade, Industry and Competition

1. **PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT, 2000**
- 1.1 The B-BBEE preference points will be awarded in terms of the Preferential Procurement Policy Framework Act, 2000: Preferential Procurement Regulations, 2022.
- 1.2 The 80/20 preference point system is applicable to all bids with a Rand value of up to R50 000 000,00 (all applicable taxes included)
- 1.3 Preference points for this bid shall be awarded for:

Price	90
Specific Goals	10
Total points for Price and Specific Goals must not exceed	100
- 1.4 **Bidders who do not submit valid proof of Specific Goals claim will score zero (0).**
2. **ALLOCATION OF PREFERENCE POINTS FOR SPECIFIC GOALS**
- 2.1 **Specific Goals**
- 2.1.1 The preference points that will be awarded in terms of the specific goals with regards to procurement processes shall be as follows (one table will be applicable for each bid):

TABLE A : Advancement of SMMEs

No	(i) Black owned entities or (ii) Black owned Military Veterans entities or (iii) Black women owned entities or (iv) Black youth owned entities or (v) Entities owned by Black people living with disabilities or (vi) Entities owned by Black people living in rural areas or (vii) Entities owned by Unemployed black people	90/10 preference points system	80/20 preference points system
1.	EMEs or QSEs entities which are 100% black owned	10	20
2.	EMEs or QSEs entities which are 51% - 99% black owned	8	16
3.	EMEs or QSEs entities which are 35% - 50% black owned	4	8
4.	EMEs or QSEs entities which are 0% - 34% black owned	0	0

TABLE B : Advancement of Local Content & Production

	Advancement of entities with local manufacturing capabilities for designated sectors	90/10 preference points system	80/20 preference points system
1.	Full compliance to the applicable minimum threshold for local content & production	2	4
2.	Non-compliance to the applicable minimum threshold for local content & production	0	0
	Advancement of South African Companies	90/10 preference points system	80/20 preference points system
1.	Level 1 and 100% black owned	8	16
2.	Level 2 and at least 51% black owned	6	12
3.	Level 3 and at least 35% black owned	1	2
4.	Below Level 3	0	0

TABLE C : Income Generation

	Income Generation, Disposal or Leasing of Assets Advancement of South African Companies	90/10 preference points system	80/20 preference points system
1.	Level 1	10	20
2.	Level 2	8	16
3.	Level 3	6	12
4.	Below level 3	0	0

TABLE D : Locality

No	Entities Located in Specific Province, Region or Municipality	90/10 preference points system	80/20 preference points system
1.	Entities located within the specific locality	2	4
2.	Entities located outside the specific locality	0	0
	Advancement of South African Companies	90/10 preference points system	80/20 preference points system
1.	Level 1 and 100% black owned	8	16
2.	Level 2 and at least 51% black owned	6	12
3.	Level 3 and at least 35% black owned	1	2
4.	Below Level 3	0	0

TABLE E : Advancement of BEE Compliant Suppliers

No	Advancement of BEE compliant suppliers	90/10 preference points system	80/20 preference points system
1.	100% black equity ownership	10	20
2.	51% - 99% black equity ownership	8	16
3.	35% - 50% black equity ownership	4	8
4.	0% - 34% black equity ownership	0	0
5.	Specialised Entities	10	20

3. PRINCIPLES

3.1 Valid proof of B-BBEE status is either of the following:

3.1.1 A B-BBEE Sworn Affidavit fully completed and

3.1.1.1 Deposed and signed in the presence of the Commissioner of Oaths (Certified true copy not acceptable)

3.1.1.2 Does not contradict itself (% black ownership matches compliance level)

3.1.1.3 Commissioner of Oaths credentials and signature are reflected.

3.1.2 A B-BBEE Certificate issued by either the CIPC or a SANAS Accredited Verification Agency.

3.1.3 An entity submitting an unincorporated Joint Venture / Consortium must attach a Consolidated B-BBEE Certificate in the name of the Joint Venture / Consortium issued by a SANAS accredited Verification Agency.

3.1.4 B-BBEE status must be based on the latest financial year-end information, otherwise it is invalid and unacceptable.

3.2 Local content and production

3.2.1 The complete list of sectors and sub-sectors which are designated for local production with minimum local content threshold can be found on the website of the Department of Trade, Industry & Competition via the link below.

<http://www.thedtic.gov.za/sectors-and-services-2/industrial-development/industrial-procurement/>

3.2.2 The bidder shall submit with the Bid documents a completed Annexure C, D & E and an Exemption letter from the dtic.

3.3. Locality

3.3.1 The bidder must submit the municipality bill/local councillor letter (must be not be older than 3 months).

3.3.2 In an event where the bidder is the lessee, the municipality bill and the lease agreement must be submitted.

3.3.3 In an event where the bidder owns the property, the municipality bill must be in the name of the owner of the property.

3.3 Sub-Contracting

3.3.1 It is a requirement of Armscor that subcontracting must be considered by a bidder. Therefore, where a contract from R10 000 000 (million) and above is awarded, Armscor shall endeavour to advance designated groups where applicable.

3.3.2 A bidder awarded a contract may not sub-contract more than 25% of the value of the contract to any other enterprise that does not have an equal or higher B-BBEE status level than the bidder concerned, unless the contract is sub-contracted to an EME that has the capability and ability to execute the sub-contracted activities or work..

3.3.3 A bidder awarded a contract must obtain the approval of Armscor prior to any changes in the subcontracting arrangement.

3.4 Ownership

3.4.1 In accordance with the provisions of the Defence Sector Code, it is a requirement of Armscor that all suppliers that do business with Armscor should achieve at least 35% black equity ownership and will be included as a bid condition where applicable.

3.5 Verification of bidders information

The Armscor Transformation Division reserves the right to require a bidder and/or its sub-contractor(s) to substantiate any claim at any stage in the bidding process to verify and confirm the specific goals claim of the bidder and/or its sub-contractor(s).

B-BBEE DECLARATION**1. Confirmation of the Bidder's Turnover**

Name of the Bidder			
Registration Number			
Financial Year End			
Turnover (As at the latest financial year end)	R	Starting (Day, Month, Year)	Ending (Day, Month, Year)

2. Confirmation of Subcontractors involved in the execution of the order:

Bidder	% Black Ownership	B-BBEE Status	% Value to be Contracted
1.			
Subcontractors	% Black Ownership	B-BBEE Status	% Value to be Contracted
1.			
2.			
3.			

*Percentages of the bid value which will be subcontracted including main contractor must add up to 100%.

3. Confirmation of Suppliers involved in the execution of the order:

Supplier's name	% Black Ownership	B-BBEE status	% Value to be Supplied
1.			
2.			
3.			
4.			
5.			

I, the undersigned, am duly authorised to certify on behalf of the abovementioned entity that the information contained herein above is true and correct.

AUTHORISED SIGNATURE : Date:

Name in block letters :

Capacity :

-1-

It is a condition of bids that the successful bidder MUST be tax compliant, or that satisfactory arrangements have been made with the South African Revenue Service (SARS) to meet the bidder's tax obligations. FOREIGN COMPANIES ARE REQUIRED TO COMPLETE QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS OF ANNEXURE 1 TO KD 25

1. In order to meet this requirement the bidder is required to access SARS e-filing and complete the SARS ONLINE "SARS tax compliance status" under tax status. Tax compliance requirements are also applicable to individuals who wish to submit bids.
2. SARS will then furnish the bidder with a Tax compliance PIN code that will be valid for a period of 1 (one) year from the date of approval.
3. The Tax compliance PIN letter shall be submitted with the bids, with an authorisation letter for Armscor to use the PIN code for verification of tax compliance status of the bidder.
4. In bids where Consortia /Joint Ventures / are involved, each party must submit a separate tax compliance PIN with authorisation letter.
5. In the event of subcontracting, tax compliance PIN letter and authorisation letter for the subcontractor must also be submitted with the bids.
6. Tax compliance is done via e-filing on the SARS website www.sars.gov.za.

NOTE: Armscor Suppliers/ Bidders and Subcontractors must remain tax compliant for the duration of their contracts.

-1-
BIDDER'S DISCLOSURE

1. PURPOSE OF THE FORM

Any person (natural or juristic) may make an offer or offers in terms of this invitation to bid. In line with the principles of transparency, accountability, impartiality, and ethics as enshrined in the Constitution of the Republic of South Africa and further expressed in various pieces of legislation, it is required for the bidder to make this declaration in respect of the details required hereunder.

Where a person/s are listed in the Register for Tender Defaulters and / or the List of Restricted Suppliers, that person will automatically be disqualified from the bid process.

2. Bidder's declaration

2.1 Is the bidder, or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest¹ in the enterprise, employed by the state? **YES/NO**

2.1.1 If so, furnish particulars of the names, individual identity numbers, and, if applicable, state employee numbers of sole proprietor/ directors / trustees / shareholders / members/ partners or any person having a controlling interest in the enterprise, in table below.

Full Name	Identity Number	Name of institution	State

2.2 Do you, or any person connected with the bidder, have a relationship with any person who is employed by the procuring institution? **YES/NO**

2.2.1 If so, furnish particulars:

.....
.....

2.3 Does the bidder or any of its directors / trustees / shareholders / members / partners or any person having a controlling interest in the enterprise have any interest in any other related enterprise whether or not they are bidding for this contract? **YES/NO**

2.3.1 If so, furnish particulars:

.....
.....

¹ the power, by one person or a group of persons holding the majority of the equity of an enterprise, alternatively, the person/s having the deciding vote or power to influence or to direct the course and decisions of the enterprise.

3 DECLARATION

I, the undersigned, (name)..... in submitting the accompanying bid, do hereby make the following statements that I certify to be true and complete in every respect:

- 3.1 I have read and I understand the contents of this disclosure;
- 3.2 I understand that the accompanying bid will be disqualified if this disclosure is found not to be true and complete in every respect;
- 3.3 The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However, communication between partners in a joint venture or consortium² will not be construed as collusive bidding.
- 3.4 In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications, prices, including methods, factors or formulas used to calculate prices, market allocation, the intention or decision to submit or not to submit the bid, bidding with the intention not to win the bid and conditions or delivery particulars of the products or services to which this bid invitation relates.
- 3.4 The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.
- 3.5 There have been no consultations, communications, agreements or arrangements made by the bidder with any official of the procuring institution in relation to this procurement process prior to and during the bidding process except to provide clarification on the bid submitted where so required by the institution; and the bidder was not involved in the drafting of the specifications or terms of reference for this bid.
- 3.6 I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No 12 of 2004 or any other applicable legislation.

I CERTIFY THAT THE INFORMATION FURNISHED IN PARAGRAPHS 1, 2 and 3 ABOVE IS CORRECT.
I ACCEPT THAT THE STATE MAY REJECT THE BID OR ACT AGAINST ME IN TERMS OF PARAGRAPH 6 OF PFMA SCM INSTRUCTION 03 OF 2021/22 ON PREVENTING AND COMBATING ABUSE IN THE SUPPLY CHAIN MANAGEMENT SYSTEM SHOULD THIS DECLARATION PROVE TO BE FALSE.

..... Signature	 Date
..... Position	 Name of bidder

² Joint venture or Consortium means an association of persons for the purpose of combining their expertise, property, capital, efforts, skill and knowledge in an activity for the execution of a contract.

**ARMAMENTS CORPORATION OF SOUTH AFRICA LIMITED
(ARMSCOR)**

INTELLECTUAL PROPERTY REQUIREMENTS

1 INTRODUCTION

1.1 What is Intellectual Property?

Intellectual Property (or "IP") means the result or outcome of human creative effort as typically, but not exclusively, manifested and embodied in or taking the form of data items or documents.

IP typically includes design and mental activities, e.g.:

- Bills of Material (BOM's)
- Instructions,
- Reports,
- Specifications,
- Interface designs,
- Manufacturing processes,
- Material Specifications,
- Processes,
- Product designs,
- Re-engineering (maintenance/obsolescence),
- Software,
- Algorithms,
- Source Codes,
- System/integration designs,
- Test and Evaluation Methods, etc.

IP typically excludes Project Management activities and Hardware created/built according to a design or following a "recipe".

1.2 How is IP manifested?

IP is typically manifested and embodied in Data Items or Documents.

"Data items or Documents" means any recorded information, however recorded, including but not limited to books, manuscripts, reports, studies, algorithms, computer software, invention descriptions, registered patents, drawings, designs, plans, analyses, calculations, standards, data packs, process documents, instructions, specifications, mathematical or simulation models, compositions, photographs, video recordings, audio recordings, reports, holographic recordings, trademarks, graphical images, etc.

NOTE:

- The document itself is not IP
- The contents of a document represent IP
- The document becomes the tangible and recordable carrier of IP

1.3 What is Background IP?

For definition, refer to A-STD-0020 "Armcor General Conditions of Contract".

"Background IP" belongs to a contractor because he fully paid for the generation thereof or had bought it at his own cost, which may be used or serve as a basis from which to develop new Foreground IP.

1.4 What is Historic IP?

"Historic IP" is existing IP which was created previously, and which may serve as a basis from which to develop new Foreground IP.

1.5 What is Foreground IP?

For definition, refer to A-STD-0020 "Armcor General Conditions of Contract".

"Foreground IP" is new intellectual property that is created during the execution of the order.

1.6 When is IP Shared or Jointly Owned or Co-owned?

For the definition, refer to A-STD-0020 "Armcor General Conditions of Contract".

"Shared" or "Jointly Owned" or "Co-owned" IP is IP which belongs to both the DOD and a contractor, because both contributed to the cost of generation thereof. Ownership is typically (and preferably) proportional to contribution.

Historic and Foreground IP may be either

1. Wholly owned by the DOD; or
2. Shared or Jointly Owned or Co-owned between DOD or the contractor

2. IP RECORDAL REQUIREMENTS

It is a requirement that prospective suppliers provide all information about applicable Intellectual Property (IP) to the bid. Armcor will record the information on their IP System that will generate a Statement of IP which will be appended to the order. The Statement of IP will serve as a contractual agreement between Armcor and the contractor in so far as IP related matters are concerned.

The recordal requirements are further described herein and broken down to an appropriate level, as follows:

2.1 Background IP Utilised

For each Background IP Item that will be modified or utilised to generate Foreground IP in the execution of the quoted scope of work, provide the following details:

- Short IP description
- Original Supplier
- Cost of Establishment (If available)

2.2 Historic IP Utilised

For each Historical IP item that will be modified or is required as a prerequisite in the execution of the quoted scope of work, provide the following details:

- Armcor IP Number (if available)
- Short IP description
- The next information is to be provided **per order**, on which Historic IP was established:
 - Order Number on which Historic IP was generated
 - Master record index (MRI) reference
 - Original Supplier
 - Cost of Establishment
 - Percentage Ownership (DOD)
 - Associated Milestone / Line item on the order under which the IP was established

2.3 Foreground IP to be generated

For each new Foreground IP item that will be generated in the execution of the quoted scope of work, provide the following details:

- IP number of Historic IP, if IP is enhanced (modified/improved/upgraded).
- Short IP description
- Master record index (MRI) reference with version and date
- Original Supplier
- Cost of Establishment
- Percentage Ownership (DOD)
- Associated Milestone / Line item on the order under which the IP will be established.

Note 1: The cost of establishment has always been included in item/milestone prices of order, and will continue to be so included, but will in future become visible by being shown separately in the Statement of IP appended to orders in order to proper manage such IP;

Note 2: To facilitate the easy and correct recording of IP, bidders and contractors will be required to utilise the specially constructed spread sheet from Armscor's web site.

After completion, the spreadsheet must be printed and attached to the bid, which will thus form an integral part of the bid.

3. SAFEGUARDING OF IP

3.1 IP Agreement

The IP agreement which will be embodied in the Statement of IP will be concluded with the main contractor in the name of the main contractor and will apply to the creating sub-contractor(s), who will remain the design authority for his particular IP.

3.2 Management and Safeguarding of IP

The main contractor will be responsible for the management of IP he generated during the execution of the order, as well as the management of IP generated by his sub-contractors. Upon completion of the project or order, the relevant IP will be formally transferred to the main contractor, who will then be responsible for the continued management of such IP.

The main contractor will be responsible for proper safeguarding and configuration control of IP, including off-site back-ups, as further described in various other Armscor documents, e.g. A-STD-0020 "Armscor General Conditions of Contract, K-STD-61 "Armscor Standard for Technical Contract Conditions", A-WI-014 "Armscor Security Instruction" and other documents that may be applicable.

3.3 IP Delivery

Notwithstanding 3.2 above, upon completion of the order, the main contractor will deliver all data items or documents relating to the IP generated during the execution of the order to Armscor ADAC Department.

3.4 IP Audits

Armscor is by law required to conduct an IP or intangible asset audit of all existing DOD IP every financial year. The main contractor will cooperate with Armscor's Intellectual Property Management Division and the Auditor General during the audit period and will make available all relevant information required to conduct the audit.

4. COMPLETION OF THE IP INFORMATION BY MEANS OF THE ELECTRONIC FORM

4.1 Background

The electronic form of the KD27 IP Information.xlsx is available as a Microsoft Excel workbook on the Armscor website (www.armscor.co.za/Downloads/Download.asp) and must be used as template to provide the relevant IP information.

The workbook consists of the following three spreadsheets:

- "Background IP" provides a form to capture all background IP information
- "Historic IP" provides a form to capture all historic IP information.
- "Foreground IP" provides a form to capture all foreground IP information.

4.2 Electronic Form Definitions

The column definitions as provided in the forms are as follows:

IP Name	A short descriptive name to identify the IP item.
IP Number	Armscor Number provided to Historic IP.
IP Description	An abridged description of the IP Item.
Original Supplier	The name of the supplier at which the IP item exists or was established.
Establishment Cost	The amount paid by Armscor to establish the IP Item (including VAT).
MRI Reference	The Master Record Index (MRI) or other document reference that uniquely describe the IP.
DOD Shareholding	The percentage of the IP that belongs to the DOD through Armscor
Associated Milestone/Item	The contractual milestone or item, which when completed, will define the point in time at which the IP will be established.

5. INTELLECTUAL PROPERTY QUESTIONNAIRE

I/We, the undersigned, who warrant that I/we am/are duly authorised to do so on behalf of the firm certify that the following information is correct and complete in terms of Intellectual Property relevant to the offered scope of work. (Please circle the relevant answer)

Will Background IP be applicable during the execution of the quoted scope of work? Yes No

If yes, state particulars by completing the 'Background IP' worksheet. Indicate each IP item as a separate line.

Will Historic IP be utilised and/or is it required as a prerequisite to execute the quoted scope of work? Yes No

If yes, state particulars by completing the 'Historic IP' worksheet for each IP item. Indicate each IP item as a separate line;

Will any of these Historic IP items be enhanced during the execution of the quoted scope of work? Yes No

If yes, also complete the 'Foreground IP' worksheet for those IP items

Will new Foreground IP be generated during the execution of the quoted scope of work? Yes No

If yes, state particulars by completing the 'Foreground IP' worksheet for each IP item. Indicate each IP item as a separate line.

This completed form, along with all additional information, as requested above where relevant, populated on the KD27 Spreadsheet, have to be attached to the bid.

WITNESSES:

1 _____

2 _____

SIGNATURES OF BIDDER(S)

DATE:

ADDRESS:

DEFENCE SECTOR BBBEE SWORN AFFIDAVIT – EXEMPTED MICRO ENTERPRISE

I, the undersigned,

Full name & Surname	
Identity number	

Hereby declare under oath as follows:

1. The contents of this statement are to the best of my knowledge a true reflection of the facts.
2. I am a Member / Director / Owner of the following enterprise and am duly authorised to act on its behalf:

Enterprise Name:	
Trading Name (If Applicable):	
Registration Number:	
Type of Entity (CC, (Pty) Ltd, Sole Prop etc.):	
Nature of Business:	
Definition of "Black People"	As per the Broad-Based Black Economic Empowerment Act 53 of 2003 as Amended by Act No 46 of 2013 "Black People" is a generic term which means Africans, Coloureds and Indians – (a) who are citizens of the Republic of South Africa by birth or descent; or (b) who became citizens of the Republic of South Africa by naturalisation- i. before 27 April 1994; or ii. on or after 27 April 1994 and who would have been entitled to acquire citizenship by naturalization prior to that date;"
Definition of "Black Designated Groups"	"Black Designated Groups means: (a) unemployed black people not attending and not required by law to attend an educational institution and not awaiting admission to an educational institution; (b) Black people who are youth as defined in the National Youth Commission Act of 1996; (c) Black people who are persons with disabilities as defined in the Code of Good Practice on employment of people with disabilities issued under the Employment Equity Act; (d) Black people living in rural and under developed areas; (e) Black military veterans who qualifies to be called a military veteran in terms of the Military Veterans Act 18 of 2011;"

3. I hereby declare under Oath that:

- The Enterprise has _____% Black Owned as per Amended Code Series 100 of the Amended Codes of Good Practice issued under section 9 (1) of B-BBEE Act No 53 of 2003 as Amended by Act No 46 of 2013,
- The Enterprise has _____% Black Female Owned as per Amended Code Series 100 of the Amended Codes of Good Practice issued under section 9 (1) of B-BBEE Act No 53 of 2003 as Amended by Act No 46 of 2013,
- The Enterprise has _____% Black Designated Group Beneficiaries as per Amended Code Series 100 of the Amended Codes of Good Practice issued under section 9 (1) of B-BBEE Act No 53 of 2003 as Amended by Act No 46 of 2013,
- Black Designated Group Owned % Breakdown as per the definition stated above:
 - Black Youth % = _____%
 - Black people living with disabilities % = _____%
 - Black Unemployed % = _____%
 - Black People living in Rural areas % = _____%
 - Black Military Veterans % = _____%

- Based on the Financial Statements/Management Accounts and other information available on the latest financial year-end of _____, the annual Total Revenue was R5,000,000.00 (Five Million Rands) or less
- Please confirm on the table below the B-BBEE level contributor, **by ticking the applicable box.**

100% Black Owned	Level One (135% B-BBEE procurement recognition)	
At Least 51% Black Owned	Level Two (125% B-BBEE procurement recognition)	
Less than 51% Black Owned	Level Four (100% B-BBEE procurement recognition)	

4. I know and understand the contents of this affidavit and I have no objection to take the prescribed oath and consider the oath binding on my conscience and on the owners of the enterprise which I represent in this matter.

5. The sworn affidavit will be valid for a period of 12 months from the date signed by commissioner.

Commissioner of Oaths	Deponent
Credentials and Signature	Signature
Date	Date

DEFENCE SECTOR BBBEE SWORN AFFIDAVIT – QUALIFYING SMALL ENTERPRISE

I, the undersigned,

Full name & Surname	
Identity number	

Hereby declare under oath as follows:

1. The contents of this statement are to the best of my knowledge a true reflection of the facts.
2. I am a Member / Director / Owner of the following enterprise and am duly authorised to act on its behalf:

Enterprise Name:	
Trading Name (If Applicable):	
Registration Number:	
Type of Entity (CC, (Pty) Ltd, Sole Prop etc.):	
Nature of Business:	
Definition of "Black People"	As per the Broad-Based Black Economic Empowerment Act 53 of 2003 as Amended by Act No 46 of 2013 "Black People" is a generic term which means Africans, Coloureds and Indians – (a) who are citizens of the Republic of South Africa by birth or descent; or (b) who became citizens of the Republic of South Africa by naturalisation- i. before 27 April 1994; or ii. on or after 27 April 1994 and who would have been entitled to acquire citizenship by naturalization prior to that date;"
Definition of "Black Designated Groups"	"Black Designated Groups means: (a) unemployed black people not attending and not required by law to attend an educational institution and not awaiting admission to an educational institution; (b) Black people who are youth as defined in the National Youth Commission Act of 1996; (c) Black people who are persons with disabilities as defined in the Code of Good Practice on employment of people with disabilities issued under the Employment Equity Act; (d) Black people living in rural and under developed areas; (e) Black military veterans who qualifies to be called a military veteran in terms of the Military Veterans Act 18 of 2011;"

3. I hereby declare under Oath that:

- The Enterprise has _____% Black Owned as per Amended Code Series 100 of the Amended Codes of Good Practice issued under section 9 (1) of B-BBEE Act No 53 of 2003 as Amended by Act No 46 of 2013,
- The Enterprise has _____% Black Female Owned as per Amended Code Series 100 of the Amended Codes of Good Practice issued under section 9 (1) of B-BBEE Act No 53 of 2003 as Amended by Act No 46 of 2013,
- The Enterprise has _____% Black Designated Group Beneficiaries as per Amended Code Series 100 of the Amended Codes of Good Practice issued under section 9 (1) of B-BBEE Act No 53 of 2003 as Amended by Act No 46 of 2013,
- Black Designated Group Owned % Breakdown as per the definition stated above:
 - Black Youth % = _____%
 - Black people living with disabilities % = _____%
 - Black Unemployed % = _____%
 - Black People living in Rural areas % = _____%
 - Black Military Veterans % = _____%
- Based on the Financial Statements/Management Accounts and other information available on the latest financial year-end of _____, the annual Total Revenue was between R5,000,000.00 (Five Million Rands) to R50,000,000.00 (Fifty Million Rands)
- Please confirm on the table below the B-BBEE level contributor, **by ticking the applicable box.**

100% Black Owned	Level One (135% B-BBEE procurement recognition)	
At Least 51% Black Owned	Level Two (125% B-BBEE procurement recognition)	

4. I know and understand the contents of this affidavit and I have no objection to take the prescribed oath and consider the oath binding on my conscience and on the owners of the enterprise which I represent in this matter.

5. The sworn affidavit will be valid for a period of 12 months from the date signed by commissioner.

Commissioner of Oaths	Deponent
Credentials and Signature	
	Signature
Date	Date

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF ARMSCOR					
BID NUMBER:		CLOSING DATE:		CLOSING TIME:	
DESCRIPTION					
BID RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE BID BOX SITUATED AT :					
ARMSCOR BID BOX VISITORS ENTRANCE (BLOCK 8), 370 NOSSOB STREET,					
BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO			TECHNICAL ENQUIRIES MAY BE DIRECTED TO:		
CONTACT PERSON	Mr. A.L Mmbengwa		CONTACT PERSON	Mr. A.L Mmbengwa	
TELEPHONE NUMBER	012 428 3610		TELEPHONE NUMBER	012 428 3610	
FACSIMILE NUMBER	N/A		FACSIMILE NUMBER	N/A	
E-MAIL ADDRESS	scmbids@armscor.co.za		E-MAIL ADDRESS	scmbids@armscor.co.za	
SUPPLIER INFORMATION					
NAME OF BIDDER					
POSTAL ADDRESS					
STREET ADDRESS					
TELEPHONE NUMBER	CODE		NUMBER		
CELLPHONE NUMBER					
FACSIMILE NUMBER	CODE		NUMBER		
E-MAIL ADDRESS					
VAT REGISTRATION NUMBER					
SUPPLIER COMPLIANCE STATUS	TAX COMPLIANCE SYSTEM PIN:		OR	CENTRAL SUPPLIER DATABASE No:	MAAA
B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE	TICK APPLICABLE BOX] ☐ Yes ☐ No		B-BBEE STATUS LEVEL SWORN AFFIDAVIT		[TICK APPLICABLE BOX] ☐ Yes ☐ No
[A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE/ SWORN AFFIDAVIT (FOR EMES & QSEs) MUST BE SUBMITTED IN ORDER TO QUALIFY FOR PREFERENCE POINTS FOR B-BBEE]					
ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?	☐ Yes ☐ No [IF YES ENCLOSE PROOF]		ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS /SERVICES /WORKS OFFERED?		☐ Yes ☐ No
QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS					
IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?				☐ YES ☐ NO	
DOES THE ENTITY HAVE A BRANCH IN THE RSA?				☐ YES ☐ NO	
DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA?				☐ YES ☐ NO	
DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA?				☐ YES ☐ NO	
IS THE ENTITY LIABLE IN THE RSA FOR ANY FORM OF TAXATION?				☐ YES ☐ NO	
IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 2.3 BELOW.					

1. BID SUBMISSION:
1.1. BIDS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION.
1.2. ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED-(NOT TO BE RE-TYPED) OR IN THE MANNER PRESCRIBED IN THE BID DOCUMENT.
1.3. THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT, 2000 AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 2022, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.
2. TAX COMPLIANCE REQUIREMENTS
2.1 BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.
2.2 BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VERIFY THE TAXPAYER'S PROFILE AND TAX STATUS.
2.3 APPLICATION FOR TAX COMPLIANCE STATUS (TCS) PIN MAY BE MADE VIA E-FILING THROUGH THE SARS WEBSITE WWW.SARS.GOV.ZA.
2.4 BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.
2.5 IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.
2.6 WHERE NO TCS IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.
2.7 NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE, COMPANIES WITH DIRECTORS WHO ARE PERSONS IN THE SERVICE OF THE STATE, OR CLOSE CORPORATIONS WITH MEMBERS PERSONS IN THE SERVICE OF THE STATE."

NB: FAILURE TO PROVIDE / OR COMPLY WITH ANY OF THE ABOVE PARTICULARS MAY RENDER THE BID INVALID.

SIGNATURE OF BIDDER:

.....

CAPACITY UNDER WHICH THIS BID IS SIGNED:

.....

(Proof of authority must be submitted e.g. company resolution)

DATE:

.....



RFB NUMBER: ARMD/2024/12

SUBMARINE REFIT SUPPORT SERVICES AT ARMSCOR DOCKYARD IN SIMONS TOWN

SUMMARY: THIS DOCUMENT CONTAINS THE REQUIREMENT FOR SUBMARINE
SUPPORT SERVICES AT ARMSCOR DOCKYARD IN SIMONS TOWN

DATE OF ISSUE : December 2024

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AMENDMENT HISTORY		
DOCUMENT ISSUE	DATE	CHECKED BY
01	December 2024	MR Z MAMBUMBU

DISTRIBUTION PAGE	
COPY NUMBER	DISTRIBUTION
01 (Master Copy)	Mr J Relihan Armscor Dockyard Procurement Division

DEFINITIONS

The following non-standard terms have been used in this document, which are explained as follows:

Client	ARMSCOR Dockyard
Contractor	The company contracted by ARMSCOR to supply as per Specification
RFB	Request For Bid

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SECTION 1

RFB REQUIREMENTS

1. INTRODUCTION

1.1. Instruction to Bidder

The Bidder must strictly adhere to the requirements stipulated in this Request for Bid (RFB). The onus rests on the Bidder to submit an unambiguous bid in order to enable Armscor to carry out a transparent and fair bid evaluation.

1.2. Scope

The scope of this RFB covers the requirement for a support contract for 36 months for SUBMARINE REFIT SUPPORT SERVICES for the South African Navy.

2. DOCUMENTS

Armscor documents are available on the Armscor Website <http://www.armscor.co.za>. The following documents are applicable to this RFB to the extent specified herein:

2.1. APPLICABLE DOCUMENTS

No	Document No	Title
1.	A-PROC-9053	Supplier Sourcing Procedure
2.	A-DOC-9046	Terms of Reference for the Bid Specification Committee
3.	A-DOC-9045	Terms of Reference for the Bid Evaluation Committee
4.	A-PRAC-4011	B-BBEE Practice, Issue 007
5.	A-STD-0020	Armscor's General Conditions of Contract
6.	A-TEMP-1019	Technical Contract Conditions Compliance Statement

2.2. REFERENCE DOCUMENTS

No	Document No	Title
1	AA-GUID-1014	Critical Criteria Guideline
2	Act 5 of 2000	Preferential Procurement Policy Framework Act (PPPFA) No.5
3	Act 52 of 2003	Broad-Based Black Economic Empowerment Act, as amended
4	Defence Sector Code	Codes of Good Practice on Broad based Black Economic Empowerment as Gazetted
5	PPPFA Regulations of 2017	Preferential Procurement Regulations, 2017
6	Armscor Practice Note 1 of 2017	Preferential Procurement Regulations Practice Note 1 of 2017

3. BID REQUIREMENTS

3.1. General

The bid shall address each and every requirement of the RFB in a comprehensive and logical way. The following information and communication is to be observed:

3.1.1. Armscor Registration

In order to qualify as a potential supplier, prospective Bidders must be registered with Armscor as a supplier. Bidders that are not registered shall undertake to register before the bid submission closing date. Registration must take place prior to any contract placement.

3.1.2. Communication

- 3.1.2.1 All communication with Armscor shall be made to: The Procurement Division, E-mail address: DockyardBID-enquiries@armscor.co.za.
- 3.1.2.2 The Bidder shall appoint a single person for communication with Armscor. Communication shall not take place via an agent or representative other than a fulltime employee of the Bidder.
- 3.1.2.3 All enquiries regarding the RFB shall be directed to the Procurement Division and the RFB reference number shall be used in all correspondence.
- 3.1.2.4 No direct contact or communication with Armscor or the Department of Defence personnel shall be allowed, unless through formally arranged meetings or briefing sessions if and when required by the prospective Bidders.

3.1.3. Validity of Bids

The validity of the bid shall be one hundred and twenty (120) days after the tender closing date.

3.1.4. Confidentiality of information

The information contained in this RFB, as well as the response received shall be treated as "Company Confidential" between Armscor and the Bidder submitting the response. The receiver of this RFB may not disclose any information in connection with this RFB to the media or any third party, or allow information to be disclosed without prior written approval of Armscor. The potential Bidder shall ensure that any confidentiality arrangements between themselves and Armscor apply *mutatis mutandis* to partners and/or subcontractors or agents of the Bidder.

3.1.5. Submission of Bid documentation

The original bid and two (2) copies thereof together with any supporting documentation such as brochures, handbooks and drawings shall be submitted to Armscor. The original must be marked as the original and each copy must be marked with a copy number. The original shall take precedence over any copy in the event of discrepancies.

3.2 Minimum requirements

The following is the minimum prescribed requirements of the bid:

3.2.1 Covering letter

The covering letter shall give a brief introduction to the bid and briefly summarize the implementation methodology, time-scale and the total cost. The letter shall also state any other aspects the Bidder deems necessary and important. The Bidder shall use the company's official letterhead when providing the covering letter.

3.2.2 Forms to be completed

The following forms shall be completed by the Bidder and submitted as part of the bid:

- Commercial Bid: all Armscor KD forms as per Armscor Procurement Secretariat requirements.

3.2.3

The Bidder shall **demonstrate**, as part of their bid and with the necessary **evidence**, that they have the necessary resources and appropriate expertise to offer the service should they be awarded the contract.

Note: *The ARMSCOR Dockyard retains the right to perform an audit to confirm the integrity of the content of the bids received.*

3.2.3

In the case where potential bidders have downloaded the bid documents or obtained it from a party that downloaded it from the E-portal or any other bid notification service provider, they are requested to inform the following person:

E-mail address: Dockyardbid-enquiries@armscor.co.za.

By doing so, they will ensure that they are captured on the list of potential bidders and receive tender related correspondence such as bidders briefing minutes etc. Failure to register as such may invalid the bidders bid as their bid may exclude updated information issued by means of Bidders briefing minutes or updates.

3.3 Bidders conference

Not applicable.

4. BID EVALUATION

4.1 Bids received

Bids received will be evaluated in accordance with an approved value model that was developed in accordance with A-PROC-9053, and such value model consists of critical criteria and special goals that are reflected in this RFB. Failure by a Bidder to comply with a single critical criterion will result in immediate elimination from the adjudication process.

4.2 AWARDING OF BIDS

The awarding of bids will be in terms Preference Point System (PPS). All bids conforming to the critical criteria will be evaluated in terms of the following PPS:

The applicable PPS points are:

Price:	90 points
Specific Goals:	10 points

4.3 MANDATORY CRITERIA

4.3.1 TAX CLEARANCE CERTIFICATE REQUIREMENTS

It is a condition of bid that the successful bidder must be tax compliant, or that satisfactory arrangements have been made with the South African Revenue Service (SARS) to meet the bidder's tax obligations. (Not applicable to foreign companies).

4.3.1.1 In order to meet this requirement the bidder is required to access SARS e-filing and complete the SARS ONLINE "SARS tax compliance status" under tax status. Tax compliance requirements are also applicable to individuals who wish to submit bids.

4.3.1.2. SARS will then furnish the bidder with a Tax compliance PIN code that will be valid for a period of 1 (one) year from the date of approval.

4.3.1.3. The Tax compliance PIN letter shall be submitted with the bid, with an authorisation letter for Armscor to use the PIN code for verification of tax compliance status of the supplier.

4.3.1.4. In bids where Consortia /Joint Ventures / are involved, each party must submit a separate tax compliance PIN with authorisation letter.

4.3.1.5. In the event of subcontracting, tax compliance PIN letter and authorisation letter for the subcontractor must also be submitted with the bid.

4.3.1.6. Tax compliance is done via e-filing on the SARS website www.sars.gov.za.

4.3.1.7 Original valid tax clearance certificates issued before 18 April 2016 are still valid until the expiry date or on replacement with SARS tax compliance PIN.

NOTE: Armscor Suppliers/ Bidders and Subcontractors must remain tax compliant for the duration of their contracts.

4.4 SPECIFIC GOALS

4.4.1 Advancement of BEE Compliant Suppliers

No	Advancement of BEE compliant suppliers	90/10 preference points system
1.	100% black equity ownership	10
2.	51% - 99% black equity ownership	8
3.	35% - 50% black equity ownership	4
4.	0% - 34% black equity ownership	0
5.	Specialised Entities	10

4.4.2 Evidence required:

- a. The Bidder shall submit with the Bid documents the BEE certificate (BBBEE certificate issued by a SANAS accredited verification agency), CIPC BBBEE certificate and or completed BBBEE Sworn affidavit as a proof of compliance to claim preference points. If the Bidder is an unincorporated Joint Venture (JV) or Consortium, the Bidder shall submit with the Bid, a consolidated proof of B-BBEE status.
- b. Should the bidder fail to submit the evidence above, then the bidder shall score no points for PPS.

4.5 Critical Criteria

Armscor will use the following criteria when evaluating Bid received from the Bidder for awarding of the bid.

No	Critical Criteria
1.	Technical and Support Services Requirement: The Bidder shall fully comply with the Statement of Work in Annexure A and B of the RFB, by achieving a total of 100% for each line item in Annexure C (Support Capability Matrix) of the RFB.

	Evidence: The Bidder shall complete and submit a support capability matrix as specified in Annexure C (Support Capability Matrix) of the RFB. NOTE: The Bidder shall adhere to the format in accordance requirements in Annexure C Support Capability Matrix.
2.	Proof of Technical expertise Requirement: The Bidder shall allocate individuals that have the minimum qualifications specified in Annexure D (Man power Capability Matrix) of the RFB. Evidence required: The Bidder shall complete Annexure D (Man power Capability Matrix) and submit qualifications for each individual identified therein.
3	Proof of Capability Requirement: The Bidder shall (a) Be the OEM of SAN Type 209 Mod 1400 Submarines; - OR (b) Have completed a Submarine Refit Project (Submarine Systems Integration, Life Cycle Maintenance of a Submarine). Evidence required: The Bidder shall submit; a. A letter signed by a duly delegated authority confirming their OEM status; - OR b. A Client reference letter signed by a duly delegated authority confirming that the Bidder has completed a Submarine Refit (Submarine Systems Integration, Life Cycle Maintenance of a Submarine). - c.
	NOTE: If the Bidder is bidding as a Joint Venture (JV) or a Consortium, at least one of the members shall comply with all the critical criteria stated above.

4.6 SPECIAL REQUIREMENTS

- 4.6.1 The bidder shall provide the Submarine Refit Support Services for the Statement of Work for the S102 and S103 of the RFB. The bidder shall complete and submit a support capability matrix as specified in Appendix C of the RFB indicating the extent of support.
- 4.6.2 On the Job Training of the Dockyard and SA Navy Personnel i.e. the Submarine Repair Group (SRG) and Refit Standby Team (RST).

4.6.3 The bidder shall be subject to hold points for quality assurance inspection points, which may include but not limited to Det Norske Veritas (DNV).

4.6.4 The bidder shall perform the technical and support services to ensure that the submarine is brought up to class certification

4.6.5 Sub-contracting (Special condition)

4.6.5.1 Bidders are required to sub-contract 30% of the value of the contract to any of the following entities which are at least 51% black owned:

- a. EMEs or QSEs owned by Black people
- b. EMEs or QSEs owned by military veterans
- c. EMEs or QSEs owned by female(s)
- d. EMEs or QSEs owned by youth
- e. EMEs or QSEs owned by people living with disabilities

4.6.5.2 Evidence Required:

The Bidder should submit with the Bid, the BBBEE Certificate (BBBEE certificate issued by SANAS accredited verification agency), CIPC BBBEE certificate and or a completed BBBEE Sworn Affidavit as a proof of compliance for all sub-contractors. The list of sub-contractors should indicate the percentage allocated to each sub-contractor including the total percentage of sub-contracting systems.

SECTION 2

Requirement Statement



REQUIREMENTS FOR THE SUBMARINE REFIT SUPPORT CONTRACT

DOC NUMBER: 7102-16-05-09-06 Submarine Refit Support Contract

ISSUE : 00

DATE : December 2024

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1. INTRODUCTION

- 1.1. The South African Navy (SAN) has a requirement to effect the Technical and Support Services on the Type 209 MOD 1400 Submarines as part of a REFIT PROGRAMME, in order to ensure that the Submarines are in a serviceable condition for training, force employment and to further ensure the platform readiness for any other requirements as directed by the SAN. The Technical and Support Services shall be effected by means of a support contract, via Armscor Dockyard (DYD) channel under the requirement number 7102-16-05-09-01 Submarine Technical Services and Support.
- 1.2. This is a multi-year requirement which will cover the Technical Services of the Product System. The Order shall be placed in Financial Year 2024/25 and the work completed in Financial Year 2027/28.
- 1.3. The RFB covers the requirements for refit maintenance support and oversight for the two submarines, SAS CHARLOTTE MAXEKE (S102) and SAS QUEEN MODJADJI 1 (S103) for a period of thirty six (36) months. The refit of S102 is in progress, where Dockyard requires support to complete the requirements of the refit. The refit of S103 is currently in the planning phase. Dockyard requires support with, but not limited to, skilled resources, the procurement of spare parts, technical oversight, technical information and training for both S102 and S103.
- 1.4. The REFIT PROGRAMME will be managed by an Integrated Project Team (IPT) consisting of DYD and SAN personnel.

2. MANDATE

- 2.1. This requirement originates from the SAN letters of Intent (LOI) referenced FOF/R/404/2/8/033814 for the REFIT of Type 209 CHARLOTTE MXEKE Submarine and FOF/R/404/2/8/033815 for the REFIT of Type 209 QMOD Submarine issued by Manager Technical Upkeep Section (MTUS) supported by

C Navy Instruction 53/2022: EXECUTION OF THE RECOMMENDED SUBMARINES MAINTENANCE CYCLE approved by the Chief of South African Navy on 22 October 2018 and 15 April 2019.

- 2.2. Furthermore, with reference to the special Naval Command Council meeting held on the 12 April 2023 in Pretoria, a new strategic approach was adopted. The strategy will be to contract technical support services and supply of spare parts for the Type 209 platform, which will include, but not limited to, the SAS CHARLOTTE MAXEKE and SAS QUEEN MODJADJI 1.

3. REQUIREMENTS

- 3.1. THE BIDDER SHALL PROVIDE TECHNICAL SUPPORT ON THE REFIT OF THE SUBMARINE S102.
 - 3.1.1. The technical support shall include but not limited to the following requirements and deliverables:
 - 3.1.1.1. The Bidder shall execute activities on S102 according to the SOW provided in Annexure A of the RFB.
 - 3.1.2. The Bidder shall provide costed list of special tools and Jigs required to execute refit.
 - 3.1.3. The Bidder shall make provision for procurement of spare part required for the refit of S102.
 - 3.1.4. The Bidder shall provide technical support required to execute Refit of Submarine S102.
 - 3.1.5. The Bidder shall provide technical oversight for execution of Submarine Refit S102.
 - 3.1.6. The Bidder provide costed Obsolescence report for the Submarine S102.
 - 3.1.7. Provide System Integration Plan
 - 3.1.8. Provide Acceptance Test Procedure for S102.
 - 3.1.9. Develop and provide costed On Job Training (OJT) required for both Armscor

Dockyard personnel and SA Navy Personnel

3.2. THE BIDDER SHALL CONDUCT SURVEY ON SUBMARINE S103 CHARLOTTE MAXEKE.

3.2.1. The Bidder shall conduct and provide Costed Survey Report for Submarine Refit S103

3.2.2. The Bidder shall develop and provide SOW 2 based on the Survey conducted on S103.

3.2.3. The Bidder shall develop and provide Costed Project Management Plan for Submarine S103 based on SOW 2.

3.2.4. The Bidder shall develop and provide a costed list of spare parts required to conduct the Refit according to SOW 2.

3.2.5. The Bidder shall Develop and provide recommended Costed Obsolescence report for the Submarine S103.

3.2.6. The Bidder shall provide Costed Special tools and Jigs required to execute

3.2.7. The Bidder shall develop and provide costed On Job Training (OJT) required for both Armscor Dockyard personnel and SA Navy Personnel.

4. STATEMENT OF WORK

The build group numbering system to be employed by the contractor when repairing the systems on-board the submarine are detailed in Annexure A and B (SOW) of the document. The work required for the two submarine will be tasked as follows:

4.1. SAS CHARLOTTE MAXEKE S102 (CME)

4.1.1. The refit of S102 is in progress, where specifics task items have been overhauled by the Armscor Dockyard and stored ready for repair. Standard

replacement parts for the activities: CME SOW have been procured and will be made available as a Client Furnished Equipment (CFE). Where spare parts are not available the Bidder is required to provide.

- 4.1.2. The Bidder shall provide Technical Support and Technical Oversight for activities in the following build groups listed in the table below. Technical Support is where the Bidder shall provide technical data and data packs Technical oversight is where the work required will be carried out by Dockyard personnel and will be guided and overseen by the bidder.

BUILD GROUP	DESCRIPTION
1172	Assembly Hatch
2110	Diesel engines
2128	Exhaust gas Valves
2178	Snorkel
2510	Shafting
2551	Main generators
2552	Propeller Motor
3494	Penetration Plug and Socket Connectors
4120	Hydroplanes and steering rudder
4311	Piston bilge pump 1 and 2
4315	Bilge Water De-oiler
4522	Fresh Water Generator 2310
4671	Air condition system
4672	Air condition cooling system
4676	Built in breathing air system
4715	Provision cooling system
4719	E-Motor Provision cooling system
4778	Chilled Water System
4935	Compressed air system
4937	Service Air System
5141	HF-Mast
5183	Combined Antenna (2-Stage Transmitting and Receiving Antenna)
5281	Hoisting Masts for Radar Antenna
8454	TCM System

- 4.1.3. The Bidder shall carry out activities in the following build groups. The Bidder

is required to provide skills transfer to Dockyard and SA Navy personnel when carrying out the refit on the build groups listed below.

BUILD GROUP	DESCRIPTION
2124	Hydraulic system Exhaust Gas Valves
2136	Pressure water/fuel oil system
2178	Snorkel
2510	Shafting
2544	Hollow Spring Main Coupling
2551	Main generators
2916	H2-measuring system
3494	Penetration Plug and Socket Connectors
4318	Main line system
4338	Compensating system
4368	Trim system
4671	Air condition system
4676	Built in breathing air system
4677	CO2 – O2 Measuring Equipment
4935	Compressed air system
4936	Compressed Air Liferaft System
4938	Compressed Air System HP
5281	Hoisting Masts for Radar Antenna
5321	Hoistable Mast for Optronic Sensor
5342	Attack Periscope

4.1.4. Project Duration

All work, as specified within this document, shall be completed within thirty six (36) months.

4.2. SAS QUEEN MODJADJI S103 (QMI)

4.2.1. The Bidder shall conduct a survey of the Annexure B: QMI SOW

4.2.2. The Bidder shall provide Technical Oversight for activities for all build groups listed in the Annexure B: QMI SOW. Technical oversight is where the work required will be carried out by Dockyard personnel and will be guided and

overseen by the contractor.

- 4.2.3. All work, as specified within this document, shall be completed within thirty six (36) months

4.3. WORK AUTHORISATION

- 4.3.1. The Work Authorization (WA) process will be utilised for any additional work or work not previously quoted. The contractor shall submit a WA request which shall be signed by the Contractor, the SA Navy representative, the Armscor Project Manager and a representative of the Armscor Quality Department. In addition, all Work Authorization requests shall be approved by ARMSCOR Divisional head or their duly authorized representative.
- 4.3.2. The available budget shall be applied to the statement of work to derive maximum benefit for the SA Navy. The mechanism to be used for this will be the WA process.
- 4.3.3. Work execution shall proceed on a works authorisation (WA) basis. A formal and logical work methodology shall be employed to accurately quantify costs of a WA.
- 4.3.4. An approved WA will be treated as a fixed cost deliverable.
- 4.3.5. A budget plan shall be prepared to track and monitor performance against cash flow.
- 4.3.6. Budget planning shall be designed to finalise year-end deliverables by not later than February of the respective Armscor financial year.
- 4.3.7. Output
 - 4.3.7.1. Based on the SOW provided in Annexure A and B. The contractor will provide a detailed work package with resource, hardware and cost requirements per build group.
 - 4.3.7.2. A key output will be to ensure that all work is done to ensure that the vessel is DNV certified on completion of the entire statement of work.
 - 4.3.7.3. A list of all special tools, jigs and test equipment used in the repair

of the vessel will be handed over to Armscor Dockyard (SRG) on completion of the project.

5. SUPPORT ENABLERS

5.1.1. A support enabler is anything that facilitates the SAN and DYD and/or Local Industry to cost effectively support and/or sustain the submarine capability throughout its useful life. The following support enablers shall, as a minimum, be considered:

5.1.1.1. Support Qualification and Transfer (SQT). For SQT, specific attention shall be devoted to transferring to the SAN/DYD deeper level support capabilities. The intention is to progressively enable the SAN and Local Industry (where applicable), from an initial lower level support capability state, to a higher more capable support capability state.

5.1.2. Defence Industrial Participation (DIP). DIP mechanisms (e.g. technology transfer) shall be fully explored to empower and enable the SAN (i.e. DYD) and local Industry to support the submarine capability sustainment in a collaborative relationship. It is imperative that the identified DIP activities are relevant and sustainable. Priority shall be given to applying DIP opportunities to the establishment and enhancement of support capabilities. The following are applicable:

5.1.2.1. Support capabilities within DYD and SAN (SRG and RST);

5.1.2.2. Support capabilities within local Industry;

5.1.2.3. On-the-job Training (e.g. production, outfitting, test and evaluation, etc);

5.1.2.4. Design and Engineering know-how Training;

5.1.2.5. Other, as recommended by the Bidder.

- 5.1.3. Identification and assessment of DIP opportunities should be done in conjunction with the analysis activities of the following focus areas:
- 5.1.3.1. Training Needs Analysis.
 - 5.1.3.2. Facilities and infrastructure.
 - 5.1.3.3. Support Needs Analysis.
- 5.1.4. Where changes and/or new infrastructure requirements are proposed by the Bidder, alternative funding mechanisms (e.g. through DIP) shall be proposed as part of the main Offer. DIP plans will be subject to review and approval by the IPT, SAN, Armscor's DIP Division and where National Industrial Participation (NIP) is concerned, the Department of Trade and Industry (DTI).
- 5.1.5. Strategic initiatives, especially those that would benefit and enhance the capability and sustainability of the SAN, Dockyard and/or Local Industry, shall be considered a priority. The Bidder shall ensure that the identified DIP activities/benefits that directly enhance the support of the sustained submarine capability are in place.
- 5.1.6. Engineering, Design and On-the-Job Training. This is a significant enabler for through-life support of the submarine capability. This additional training (over and above product specific training), shall be provided for the SAN (including NES) and DYD personnel. This training must expose personnel to engineering design, manufacturing, test and evaluation techniques and principles. The key objective is the successful transfer to the SAN/DYD of useful knowledge and information for the operation and sustained support of the submarine capability.

5.2. Training Requirements

- 5.2.1. The Bidder shall provide all requisite training in South Africa.
- 5.2.2. The training will be provided to the Submarine Repair Group (SRG) and Refit Standby Team (RST) consisting of both DYD and SAN personnel. Where

required, training documentation will be provided to supplement the on-the-job training.

- 5.2.3. Submarine systems knowledge relevant to the equipment shall be transferred to the NES by means of secondments to the Bidder's local design office. Up to four personnel at any one time shall be accommodated during the refit period.

5.3. DATA REQUIREMENTS

- 5.3.1. The design and configuration management responsibility of all data deliverables rests with the Bidder, until formal hand-over to the IPT, and thereafter with the SAN's Naval Engineering Section (NES). The NES will then become the custodian and controller of all data and shall be the Design Authority for the delivered equipment.
- 5.3.2. Technical data, Acceptance Test Procedures (ATP's), manuals and documentation that are not currently part of the SAN's Configuration Baseline but are required to operate, maintain and support the vessels, throughout the life cycle, shall be supplied. This includes a Refit Execution Manual which must contain a sequence for removal and replacement of equipment from the submarine.
- 5.3.3. A further review (with associated remedial action) of all technical documentation shall also be conducted by the Bidder prior to delivery, with final review prior to completion.
- 5.3.4. Technical data, drawings, manuals and documentation shall be supplied in hard copy as well as in editable software format (i.e. MS Office for non-drawing documents). Drawings are to be provided in a CAD media format compatible with the SAN's in-house systems (Caddie, AutoCAD). There is also a requirement for a detailed photographic record of all spares items and items of supply, which shall be integrated with the Illustrated Parts Catalogue.
- 5.3.5. The following types of LSA / support analysis data is required, to define and

specify support requirements for logistic deliverables to be developed and/or acquired:

- 5.3.5.1. Structure of systems;
- 5.3.5.2. Maintenance management data;
- 5.3.5.3. Materials (for maintenance tasks and re-supply);
- 5.3.5.4. Engineering support data (for change management processes);
- 5.3.5.5. LCC data.

5.3.6. All documentation, drawings, instructions and training shall be provided in the English language.

5.3.7. All TM's shall be delivered in MS Word and PDF formats.

5.3.8. The Bidder shall propose a list of required drawings and diagrams to be delivered, which shall be approved by the IPT.

6. SUBMARINE CLASSIFICATION

- 6.1. The SAN type 209 submarines are held in class with Det Norske Veritas (DNV) rules. It must be noted that DNV will play a significant role during the refit programme for S102 and S103 as both vessels will require class renewal surveys. The initial surveys of the vessels by the bidder as well as the refit schedule must be communicated to DNV via the IPT to ensure that all DNV requirements for class renewal are satisfied.

7. ENGINEERING CHANGE AND OBSOLESCENCE MANAGEMENT

- 7.1. Engineering Change. An EC is an alteration to the Baseline of a system and/or configuration item as defined in its data pack that would alter in any way the

system's and/or configuration item's operational performance, construction, design, configuration, interchangeability and support.

- 7.2. Engineering Change Proposal. An ECP is a request for an EC to the baseline of a system and/or configuration item. The proposal will include the proposed EC as well as all the relevant documentation initiating, suggesting, describing and motivating the proposed change.
- 7.3. All EC's during the refit programme will be formally documented and presented as an ECP to the IPT who will obtain the required approval.
- 7.4. Obsolescence Management. A number of systems have been identified for upgrade due to obsolescence and is indicated in the attached SOW. The feasibility studies completed for these systems will be shared with the Bidder for review and recommendations on proposed upgrades that can be supported until the end of life of the vessels.

8. SPARE PARTS

- 8.1. Dockyard have procured standard replacement spare parts for the refit maintenance of the submarine S102. Furthermore there are selected spare parts available through SA Navy stores. Dockyard will provide these spare parts where available as CFE'S.
- 8.2. Where spare parts are not available, the bidder shall make provision for the procurement of spare parts for the submarine maintenance required.
- 8.3. Spare parts required for the refit maintenance of the submarine S103 will not be provisioned by dockyard. The bidder is required to provide spare parts for the refit statement of work required for S103.

9. CONDITIONS OF ACCEPTANCE

- 9.1. Work on all systems will be presented for a harbour acceptance test (hat) and sea acceptance test (SAT). Work on a system will be considered completed at the point when the HATS and SATS has been signed off as completed.
- 9.2. Armscor completion certificate and report templates will be utilised when conducting acceptance of all work done.

- 9.3. Inspection/release/acceptance certificate (form ak-form-0047) issued, signed and stamped by a representative of Armscor dockyard quality department.
- 9.4. Payment will only be made once an inspection/ release/ acceptance certificate (form ak-form-0047) is signed and stamped by the Armscor QA representative.
- 9.5. Place of release: the Armscor Dockyard's premises.
- 9.6. Time of release: after delivery.
- 9.7. A representative of Armscor Dockyard/SA Navy will monitor the acceptance of the products and documentation at the Armscor dockyard's premises.
- 9.8. The bidder shall issue a certificate of conformance to certify that the products adhere to their requirement with respect to the SA Navy system functionality.

10. QUALITY ASSURANCE

- 10.1. Armscor technical contract conditions compliance statement (a-temp-1019)
- 10.2. Armscor dockyard is ISO 9001: 2015 certified, the bidder shall be obliged to follow the processes of ISO 9001 in addition to their own internal quality processes.
- 10.3. The bidder shall be subject to hold points for quality assurance inspection points, which may include but not limited to Det Norske Veritas (DNV).
- 10.4. All pressure testing is to be carried out in accordance with (IAW) the approved & latest revision of the "maintenance pressure test plan" 70300-1067-360001
- 10.5. All painting is to be IAW the approved and latest revision of the "submarine coating plan" 70300-1944-01-00-00
- 10.6. Pre - harbour acceptance trials (HATS) are to be carried out to all equipment and systems.
- 10.7. Harbour acceptance trials are to be carried out to all equipment and systems i.a.w. SABR 319(12) (HATS 209)
- 10.8. Sea acceptance trials are to be carried out on all equipment and systems i.a.w. SABR 319 (13) (SATS 209)

11. TECHNICAL CONDITIONS

- 11.1. The Armscor dockyard reserves the right to utilize their internal resources for some of the statement of work (SOW).
- 11.2. The Armscor dockyard reserves the right to remove or add some tasks from the SOW.
- 11.3. For all build groups, additional work may arise based on the condition of the equipment and the resultant reports.
- 11.4. Additional work will be managed & authorized by means of “works authorizations (WA’s)
- 11.5. The bidder must provide a warranty period of 12 months for all work completed by the contractor and their subcontractors. The warranty shall commence when HATS have been accepted by the client.
- 11.6. Where spare parts are being supplied a certificate of conformance is required from original equipment manufacturer (OEM) or approved supplier or supporting documentation confirming that the items supplied are OEM approved parts and are new and unused.
- 11.7. The contractor shall be responsible for the collection and delivery of all components of the submarines which have to undergo repair/replacement. The technical and support services shall be performed on site at the dockyard facilities as far as practically possible.
- 11.8. The collection and delivery points of all the equipment shall be at the dockyard bond store. The contact person at the dockyard bond store will be Mr M seconds (contact details: 021 787 5453)

12. CUSTOMER FURNISHED EQUIPMENT/CUSTOMER FURNISHED SERVICES & CUSTOMER FURNISHED ITEMS

- 12.1. The Bidder is to include all CFE/CFI and CFS that will be required to assist them in completion of the tasks.
- 12.2. A CFE as defined in this document could be pieces of equipment, physical items, data elements, information, services, assistance, facilities, etc. Tangible CFE

elements can be further categorised dependent on their status in the SANDF system, and require suitable provisioning processes to be followed:

- 12.3. SANDF Stock items with NSNs that can be allocated through OSIS to ARMSCOR, where it can be assigned to the Refit Project. From ARMSCOR these items can be booked out to the Bidder and captured as CFE items.
- 12.4. SANDF Stock items identified as CFE will be recorded in the applicable CFE Register in accordance with the requirements of the Public Finance Management Act (PFMA) and Treasury Regulations. These items need to be returned when no longer required for the project by the Bidder.
- 12.5. SANDF Stock items, with NSNs, that is either used as supplies (items that will be consumed during the development and production processes, typically batteries, fuel, etc. used for testing and qualification) or items that are built into the upgraded systems (included in one of the products systems' Main Equipment Codes (MECs), and there after no longer exists as the original item).
- 12.6. CFE Register. The CFE register will contain the following fields:
 - 12.6.1. Serial Number.
 - 12.6.2. CFE General Description.
 - 12.6.3. Item Type.
 - 12.6.4. Use Requirement.
 - 12.6.5. Part No or Item No or Drawing No and Version,
 - 12.6.6. Photograph of Item.
 - 12.6.7. National Stock Number (NSN).
 - 12.6.8. Quantity Required.
 - 12.6.9. CFE Condition.
 - 12.6.10. Risk Associated with CFE.
 - 12.6.11. Collection Date.
 - 12.6.12. Expected Date of Return.
- 12.7. The CFE register will be a dynamic document and will be maintained on a continuous basis to be attached to the project progress meetings configured with

number and date. The register for receiving of CFE back into the project from the bidder will be developed at the later phases of the project.

- 12.8. List of CFE. The CFE Register lists items which are identified as applicable to the submarine capability sustainment contract on the Bidder. CFS and other related elements expected to be provided by the client during the execution of the project and Test and Evaluation will all be managed under the CFE paragraph during the Project Progress Meetings.
- 12.9. Configuration of levels of CFE items. CFE identified in the CFE Register, as required for the submarine capability sustainment, will be identified in terms of specific configuration. This implies that the correct NSN, part number, serial number, and formal item description will be made available to all stakeholders.
- 12.10. Condition of CFE Required. Each CFE, including any materials and supplies, will have an acceptable or agreed to minimum condition as required for the contract. This condition will be agreed to by the IPT with the assistance from the Bidder:
Aspects to consider are:
 - 12.10.1. Is a new or "as good as new" reconditioned item necessary?
 - 12.10.2. What are the contents/parts of the complete CFE?
 - 12.10.3. Specifications with which the CFE must comply, including any certifications required. (Include the Certificate of Conformance (CoC), if required)
 - 12.10.4. The required item identification markings, configuration status and traceable history records.
 - 12.10.5. Packaging, Preservation, Preparation and Marking (PPPM) requirements to comply with.
 - 12.10.6. Support elements required.
 - 12.10.7. Specific constraints for integration, use or application of the CFE
 - 12.10.8. Relevant Data on CFE.
 - 12.10.9. Export/Import Permits, where required.
- 12.11. Interfaces Applicable to CFE. Interfaces with the CFE shall be identified and appropriately specified prior. Applicable Interface Control Specifications will have to be developed, if required, or Interface Control Management efforts will be

formally made visible and approved by the IPT during execution of the project.

- 12.12. Quantity of CFE Required. The quantity of each CFE item required, broken down to the quantity required for each System, must be confirmed in the CFE Register.
- 12.13. Work Necessary on CFE Required. Once the CFE item is confirmed to be available, CFE elements requiring servicing/repair/refurbishing, before issuing to the Bidder, will be identified and managed by the CFE Manager (Project Logistics Officer) in conjunction with the Systems Manager (SM). This is to ensure that the CFE can be provided in accordance with the requirements and the applicable configuration status.
- 12.14. CFE elements requiring specific alterations or modification as part of the integration and interfacing with the vessels will be addressed by the Bidder as part of Integration Design and Customization of the applicable System.
- 12.15. The CFE Import and Export Permit requirements will be addressed with consultation from the Arms Control Division. The IPT also takes cognisance of the potential changes on the configuration status of a CFE item due to modifications required to satisfy the requirements of the vessels. The change in configuration status must also be effected on the CFE documentation, specifications, etc.
- 12.16. Furthermore, any changes will have to be effected to the rest of the User arsenal of the item including associated items.
- 12.17. The most appropriate configuration and condition of the CFE will be defined and included in the CFE requirements submitted by the Bidder.
- 12.18. CFE PROVISIONING
 - 12.18.1. Collection Address. CFE, as identified in the CFE Register, will be made available for collection by the Bidder or representative for use and/or integration within the Submarine System. The Collection and Delivery address of CFE will be Simon's Town (Project Office). The CFE Manager will be responsible for co-ordination of Client Furnished Services (CFS) through execution of the project.
 - 12.18.2. Support/Authorisation/Approvals required to issue CFE. A formal procedure shall be followed whereby the issuing of CFE shall be as per applicable organisations issuing procedures, with acceptance and accounting requirements adhered to during the issuing process. The specific responsibilities of ARMSCOR Project Manager, Project Officer,

ARMSCOR Quality Assurance Representative (QAR), Relevant SM(s), CFE Manager and other parties involved in the issuing of each CFE shall be identified and included in the CFE Documentation.

- 12.18.3. PHS & T Applicable to CFE. Packaging, Handling, Storage and Transportation (PHS & T) instructions/policies and procedures developed for specific CFE items shall be utilised and adhered to. Any change in configuration status of an item that was issued as CFE will be evaluated against existing PHS & T instructions. Any need to amend PHS & T instructions resulting from the new configuration status will be done by the Bidder. The IPT representative (i.e. CFE Manager) must ensure that items to be handed over as CFE are packaged as per the item PHS & T instructions as agreed upon between the IPT and the Bidder.
- 12.18.4. CFE Collection Procedure. CFE, during collection, must be suitably packaged to prevent damage during handling and shipping. However, any Damage or Loss resulting from the handling and transport of the CFE after collection will be the liability of the Bidder.
- 12.18.5. CFE Acceptance Procedure. The ARMSCOR QAR will accept CFE from the user on behalf of the IPT. ARMSCOR QAR will then present CFE to the assigned Bidder Representative for acceptance. During the acceptance of the CFE by the Bidder (or nominated representatives on behalf of The Bidder), the recipient will assess the compliance of the CFE to the defined requirements for the specific CFE. Where required, CFE items will be issued and received against formal test procedures.
- 12.19. CFE Schedule. The Bidder must provide a schedule indicating when the CFE, CFS, etc. must be available to fit in with the planned dates for engineering, integration and customization activities where the CFE is required. The IPT's commitment to provide the CFE before the scheduled required date must be formally agreed to with the System Managers and/or Fleet Integration Managers.
- 12.20. CFE Collection Schedule. Based on the CFE availability dates a collection schedule will be determined in conjunction with the issuing authorities identified for each CFE element.
- 12.21. CFE Process Schedule. In order to comply with the committed availability date for CFE, CFS, etc., the IPT will maintain an internal schedule for the management of

the internal processes required for each CFE, CFS, etc. element. Furthermore, this schedule will be continuously reviewed and updated during Project Progress Meetings.

12.22. Recipients of the CFE. The Bidder (or nominated representatives) receiving CFE will comply with the contents of the paragraphs below:

12.23. Control of Records. The Bidder must establish and maintain adequate records for all CFE received, including items collected by, and in the possession or control of, a sub-contractor. The Bidder control system will be subject to internal control standards and be supported by adequate records of CFE received. The review and approval of the Bidder control system must be accomplished by the ARMSCOR QAR responsible. The QAR must also have transparency on control of records for CFE in the Bond Store for Items that are in possession of the Bidder for over a year. With regards to Controlled Items, the Bidder must ensure the following Arms Control records:

- 12.23.1. Maintenance and Upkeep Records.
- 12.23.2. Configuration Records (Include ECPs, etc.).
- 12.23.3. CoC.

12.24. Responsibility for Maintaining Records. The Bidder shall maintain all records for CFE whilst in their possession. They will also:

- 12.24.1. Maintain the supporting documents required for official records.
- 12.24.2. Preserve a proper audit trail on all CFE in their possession.
- 12.24.3. Ensure that the status of CFE in their possession is correctly specified. The rectification of misappropriation or damage to CFE while under the control of the contractors will be for the account of the contractor(s).

12.25. CFE Maintenance. The Bidder must ensure that all maintenance tasks required on the CFE, while in their possession, will be performed and recorded. If the Bidder is unable to conduct the required maintenance on CFE items, the SA Navy and Dockyard maintenance capacity can be used as agreed to between the Bidder, IPT and SA Navy.

- 12.26. Providing the CFE. The CFE manager, supported by the IPT, will ensure the following:
- 12.26.1. Timely issuing of the identified CFE as per collection schedule.
 - 12.26.2. Issuing of the complete CFE as per defined requirements.
 - 12.26.3. Recording of the issuing transactions on the applicable systems and maintaining proof of collection of the CFEs.
- 12.27. Resources Tasked to Collect CFE.
- 12.28. The recipient (the Bidder or Representative) will task a Collection Resource for the collection of the CFE. The Bidder will ensure that their representatives have the correct equipment and capability to handle and transport (if necessary) the CFE.
- 12.29. TECHNICAL CONTROL. ARMSCOR will include the supply of the CFE in the contract with the Bidder. A MOA will be signed between CFE Manager, SM, and/or Fleet Integration Manager for the supply of CFE as per the agreed schedule. The CFE will also be managed using ARMSCOR procedures.
- 12.30. Coordinating Meetings. The progress with provisioning of CFE will be addressed at the scheduled Project Progress Meetings. Special meetings with applicable IPT members will be convened to manage specific CFE provisioning processes as part of CFE Management effort.
- 12.31. Progress Reporting. The regular updating of the CFE Register with the refined definitions and requirements of CFE, CFS, etc. as well as progress with delivery, will also be addressed at the scheduled Project Progress Meetings. When a separate meeting to discuss CFE, CFS, etc. is warranted, then the agenda items for the management of CFE, CFS, etc. will move to this meeting.
- 12.32. Management of Deviations and Concessions. Where it may be necessary to provide CFE elements under an approved deviation or concession from the requirements for that CFE, such deviation or concession will be accepted by the Bidder, and further managed within their configuration management system as if generated through their own internal processes. The implications of such deviation or concession (technical, time, cost, etc.) will be assessed as for any other Class 1 deviation or concession.
- 12.33. Return of CFE. Should the CFE no longer be required on the Project, the CFE will be returned to ARMSCOR and accepted by the QAR. The CFE Manager will

process the returned CFE in accordance with standard appropriation procedures. A separate register for receiving CFE back into the project will be developed at later phases of the project. The CFE receipt address for all items returned back into the project will also be Simon's Town (Project Office). The Import and Export Permit requirements for CFE, in conjunction with ARMSCOR Arms Control Division, will be addressed on a case by case basis.

12.34. RISK MANAGEMENT OF CFE.

- 12.34.1. Risk Identification. Together with defining the requirements for the CFE, CFS, etc. during the Integration Design, Customization, and Test and Evaluation; the risks related to that CFE element such as: technical performance, availability of items and/or supporting Data/documentation and/or suitable logistic products, condition of CFE, and history of CFE must be identified.
- 12.34.2. Risk Mitigation Plans. Where risks with CFE, CFS, etc. are identified, the risks will be included in the Project Risk Register and where required Risk Mitigation Plans will be developed to ensure timely delivery of CFE.

12.35. **Supplementary Information**

- 12.35.1. A breakdown of costs for flights, subsistence allowances and accommodation shall be included in the bid where applicable.
- 12.35.2. Costs to establish a site office and any other requirements considered essential during the technical and support services to be included in the bid where applicable.
- 12.35.3. Armscor Dockyard and SAN personnel will work alongside the Bidder for on the job training (OJT) and technology transfer on certain tasks.
- 12.35.4. The Bidder shall attend monthly progress meetings to report on progress and milestones against plan. The progress meetings will be chaired by the Dockyard Project Manager and minutes will be recorded.

13. COLLECTION AND DELIVERY DETAILS

The collection and delivery points of all the equipment shall be at the Dockyard Bond Store. The contact person at the Dockyard Bond Store Will be Mr M Seconds (Contact details: 021 787 5453) supported by Dockyard Quality Section

14. CONTROL

The Bidder shall be responsible for the collection and delivery of all components of the Submarines which have to undergo repair/replacement. The Technical and Support Services shall be performed on site at the Dockyard facilities as far as practically possible.

The Armscor Dockyard Quality Section assigned to this task shall be responsible for the Quality control and Assurance. Any deviation with respect to the SOW and required deliverables from this requirement shall be addressed in writing via the Refit Project Manager to the SAN Project Officer prior to delivery to the Dockyard Bond Store.

There shall be inspection hold points that shall be performed in collaboration with Det Norske Veritas (DNV).

15. CONTACT DETAILS

The Refit Project Manager is Mr M Seconds at 021 787 5453

The Project Officer is Capt (SAN) M Brandt at telephone 021 787 4330

16. DECLARATION OF INTEREST

It is hereby confirmed that neither the originator of this requirement nor any other individual within this section has any personal interest in this requirement.

17. CONCLUSION

This document serves as a high-level requirement for the Technical and Support Services for the Submarine Platforms.

Should this requirement not be satisfied in terms of time, performance or funding it must be communicated to Divisional Manager: Project Management in writing.

Submission to the Armscor Authorisation Committees should not deviate from any formal requirement or amendments.

Section 3: Additional Conditions

1. Emergencies

The client reserves the right to stop work should this in his opinion be necessary to ensure the safety of property or personnel.

2. Access to the Premises

The client shall grant the contractor and/or his employees the necessary access at all reasonable times, in order to meet the obligations in terms of this agreement, subject, however, to the client's security arrangements. Access to the client's premises may be refused under appropriate circumstances.

3. Security

The contractor shall be subject to the security rules and regulations as in place on any client property he enters. These regulations shall be in line with Department of Defence unit security regulations. This includes controlled access through a security gate and prohibition of carrying photographic equipment (including cell phones with cameras), firearms, explosives, unlawful narcotics, etc. onto client property.

While on any client property, the contractor employees and vehicles may at all times be subjected to security searches by the security forces.

Transgression of any security rules and regulations can lead to detention by security and subsequent prosecution.

4. Safety

While on client property related to this contract, the contractor shall be responsible for the safety of his employees.

The contractor shall be responsible for rendering medical attention of the contractors employees,

should they sustain an injury, while on the client's property, through the contractor's action.

The contractor enters client property at own risk. Treatment for any injury sustained by contractor's employee, caused by client action, but not due to negligence or malicious intent on the part of the client, shall be the responsibility of the contractor.

In any case, the client can, according to its discretion, render limited medical attention to the contractor, but the client will not accept any liability for the outcome of such medical assistance rendered. Furthermore, the client can, according to its discretion, charge the contractor for such service rendered.

The signed, ***MEMORANDUM OF AGREEMENT IN TERMS OF SECTION 37(2) OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, NO 85 OF 1993 (AS AMENDED)***, as submitted by the contractor as part of his tender, shall become a binding agreement between the contractor and the client on award of the contract.

All work carried out on board a vessel will be under the auspices of the Commanding Officer of the vessel. All safety instructions issued by him or his delegated authority shall be adhered to at all times.

5. Identification

The contractor shall at all times, on site, positively identify all his employees and subcontractors by visually standardized dress/overalls and conspicuously attaching workers' respective name tags thereto.

6. Contractor's Status and Responsibilities

- 6.1 The contractor shall not permit any worker to perform any task for which such worker has not been trained.
- 6.2 Under no circumstances may the contractor's employees litter, roam, sleep or prepare food on site, unless otherwise arranged and agreed to by the client.
- 6.3 Under no circumstances may the contractor's employees accept tasks (with or without payment) from the client's personnel or any other instruction/request that is not part of this contract.
- 6.4 The contractor shall see to it that his employees do not interfere in any way with the client's employees or with occupants of the premises.
- 6.5 The contractor shall comply with the client's security requirements.
- 6.6 The contractor shall not damage the property of the client or his employees.
- 6.7 The contractor shall leave all areas where work has been executed in a clean and neat condition.
- 6.8 The contractor shall not erect any signs or advertisements on site.
- 6.9 The contractor shall not unreasonably encumber the site with his materials and equipment, and shall make such provisions and carry out his operations in such a manner that will permit continuous, safe traffic and pedestrian circulation, and he shall provide and maintain safe access to all buildings within the work boundaries.
- 6.10 The contractor shall confine his equipment, tools, and the operations of his employees as indicated by the client and within the limits of statutory requirements.

Section 4: Maintenance Conditions

1. Materials/ Equipment and Consumable Stores

Where equipment, parts and material required to execute the scope of the work is not supplied as CFE, the contractor shall supply all such equipment, parts and material. All equipment, parts and material provided in this manner by the contractor shall meet the original manufacturer's specifications or shall be approved in writing by the client. The client reserves the right to refuse any part not meeting these requirements.

The contractor shall be responsible for the supply of all consumable items such as nuts, bolts, studs, washers, split pins, jointing compounds, gasket materials, greases, etc., the quality of which shall be appropriate for the intended purpose, meet the OEM's laid down specification, and be approved by the client.

The contractor shall provide all cleaning materials and paints, all of which shall meet the approval of the client.

2. Working Hours

When working on the client's site, all work is to be carried out during normal working hours, except when instructed by the project manager to perform work outside of normal working hours.

Normal working hours are:

Monday – Thursday : 07:15 - 16:30

Friday : 07:15 - 12:15

Should there be a requirement to work outside of the Dockyard's normal working hours, sufficient notification and approval is required from the project manager

3. Dockyard Facilities

- 3.1 The contractor may obtain compressed air (during normal dockyard working hours only), fresh water and electricity from the take-off and supply points fitted in the Dockyard reticulation.
- 3.2 Cranage and crane drivers may be supplied to the contractor, depending on availability. Application for these services must be made to the project manager at least 24 hours in advance.
- 3.3 The contractor is to ascertain that the pressures, flow rates and electrical supply are suitable for the satisfactory functioning of his equipment.
- 3.4 The contractor shall supply all the necessary connections, cables, hoses, fittings and sub distribution boards that conform to SABS 0142 (Electrical Regulations) for the transmission of the services from the ring main to his equipment.
- 3.5 Any interruption to the supply caused by the use of faulty appliances or equipment by the contractor and necessitating restoration by client personnel will be for the contractor's account.
- 3.6 The client shall not supply equipment, material and/or services for which the client is responsible, outside the normal Dockyard working hours, unless it is considered, in the client's sole discretion, to be in the client's interest to do so and provided that twenty-four (24) hours written notice of his requirements is given to the project manager by the contractor.
- 3.7 The client shall not be held responsible for any damage due to the loss of time occasioned by the breakdown or failure of the specified services for which the client is responsible, but extra time may be granted to the contractor in an appropriate case.

4. Contractor Liability

The contractor may be required to work in conjunction with other contractors, Naval and Dockyard personnel as well as sub-contractors and reasonable adjustments to the work schedule may have to be made as co-ordinated by the project manager. No liability for such deviation will be accepted by the client.

Where minor areas of damage require touching up, they shall be coated with the full paint

scheme specified for the area.

5. Adverse Conditions and Defects

The contractor shall report in writing to the client any adverse conditions or defects encountered on site prior, during or after the execution of work, upon which the execution of work depends and which may adversely affect its performance.

The contractor shall not commence or continue with work until such adverse conditions or defects have been investigated and corrected, unless otherwise instructed in writing by the client.

6. Damage Reporting

During the execution of the work, the contractor shall immediately report to the client representative any damage detected with regard to all items/property related to this contract and limited to the areas which are included in this agreement.

Section 5: Safety, Health and Environmental (SHE) Legislation

1. Compliance

- 1.1 The contractor shall comply with all statutory requirements and in particular with the provisions of the Occupational Health and Safety Act, Act No 85 of 1993, as amended from time to time, where applicable, as well as with the under-mentioned conditions:
- 1.2 The contractor shall identify, document and comply with all Safety, Health and Environmental ("SHE") laws and regulations, approvals, licences and permits which are applicable to the work ("SHE Laws").
- 1.3 The contractor must keep accurate, current and legible evidence to prove compliance with the SHE conditions of this contract ("SHE conditions"). The contractor must at the request of the client produce documentary and other evidence to prove compliance with these SHE conditions.
- 1.4 The contractor will, immediately upon receipt of any notice (including approvals) from any government or statutory authority or body that relates to any SHE aspect of the work, provide the client with a copy of such notice.
- 1.5 The contractor shall hand in, along with his tender, a signed copy of, **MEMORANDUM OF AGREEMENT IN TERMS OF SECTION 37(2) OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, NO 85 OF 1993 (AS AMENDED)**. This shall form a binding agreement between the State and the successful bidder, once he has been appointed as Contractor.

2. Remediation and Termination for Breach of SHE Conditions E

- 2.1 The contractor agrees that in the event that the contractor or any of the contractor's personnel breach any SHE condition, the client will be notified immediately. Any breach or breaches will be remedied promptly and, as agreed with the client, steps taken to avoid recurrence. Nothing in this clause (2) will limit any other right or remedy available to the client.
- 2.2 The client and the contractor agree that the SHE conditions are of the utmost importance. Any significant or repeated breach or violation thereof will be deemed to be a material breach ("Material Breach") of this contract.
- 2.3 Should the client observe an act or become aware of an omission which in its opinion violates any of the SHE conditions (including but not limited to any unsafe act), or becomes aware of a planned act, or any other act that in its opinion might violate any of the SHE conditions, the client may direct the contractor or the contractor's personnel to cease, or not to proceed with such act and the contractor will, at the contractor's own cost and risk, promptly modify the contractor's and/or the contractor's personnel's method of work so that the work is carried out in accordance with these SHE conditions.
- 2.4 Where such an act or omission may in the opinion of the client cause fatality or serious injury, the client may direct the contractor to immediately cease all work and not recommence any work until an improvement plan has been submitted to and approved by the client and the method of work has been modified and the contractor's personnel retrained to remove the risk of fatality or serious injury.

3 SHE Indemnity

- 3.1 The contractor will indemnify and keep indemnified the client, its affiliates and their directors, officers, employees and agents from and against any loss or damage of any kind whatsoever, arising from:
- a. Any breach of these SHE conditions by the contractor or the contractor's personnel;

- b. Any personal injury, illness or death to any person or damage to any property or any other loss or damage caused by or contributed to by:
 - c. The performance by the contractor or the contractor's personnel of the contractor's obligations under this contract and/or
 - d. The entry onto, or the activities undertaken on, under or around the site and other premises of the client and/or ARMSCOR by the contractor or the contractor's personnel;
 - e. Any negligence or misconduct by the contractor or the contractor's personnel arising out of or in connection with this contract; or
- 3.2 Any penalty imposed for breach of an applicable law in connection with the performance of the work by the contractor or the contractor's personnel, except to the extent that any liability, loss or damage is directly caused by the client's wilful misconduct.

4. Audit, Inspection & Reporting

- 4.1 The client has the right, at any time, without giving prior notice to the contractor, to conduct audits or inspections of the work to determine the contractor's compliance or otherwise with these SHE Conditions. The contractor is expected to cooperate fully with the client during such audits or inspections, but the client's rights under this section will not relieve the contractor of his own obligations to conduct audits and reviews of his own SHE performance or expose the client to any liabilities which may arise from the contractor's failure to satisfy the SHE conditions.
- 4.2 The contractor shall render reasonable assistance to the client and give the client access to the contractor's records, the contractor's personnel, the site and the work to enable the client to conduct a SHE audit or inspection.

4.3 Where such audits or inspections reveal non-compliances with these SHE conditions and the plan and/or deficiencies in the plan, the contractor shall, at the contractor's own cost, rectify such non-compliances and/or deficiencies as soon as practicable and advise the client of all actions taken to remedy non-compliances and/or deficiencies.

4.4 The contractor shall have a system for regularly auditing own SHE performance and the contractor's personnel's performance, which must be submitted to the client's SHE manager for approval.

4.5 The contractor shall maintain a SHE audit action status register, which, upon the request of the client, must be made available for inspection. The contractor must share lessons learned (positive and negative) with the client and the contractor's personnel.

4.6 The client may conduct follow-up audits to ensure that the contractor has rectified non-compliances with the SHE conditions and the plan and/or deficiencies in the plan.

5. SHE Training

- 5.1 Before commencement of any work, the contractor shall, at the contractor's own expense, ensure that the contractor's personnel have been given the necessary SHE training.
- 5.2 The contractor shall ensure that the contractor's personnel attend refresher courses to maintain familiarity with current procedures. In addition, the contractor will, if requested by the client, provide the client with details of on-going training programmes and all revisions to such programmes during the term. The contractor will provide evidence of completion of all training and competency assessments on request of the client.
- 5.3 The contractor acknowledges that the cost of providing all training and instruction required to perform the work under this contract shall be borne by the contractor.

6. Personal Protective Equipment (PPE)

- 6.1 The contractor shall provide PPE for his employees, including the necessary training for the utilisation of the PPE.
- 6.2 The contractor shall provide the following PPE to his employees:

Overalls

Safety boots

Safety helmets

Ear protection

Eye/ear protection

Foul weather gear

Safety Harnesses

- 6.3 The contractor shall provide his personnel with all required special PPE e.g. for hazardous environments, when required, in accordance with the Occupational Health and Safety Act, Act 85 of 1993 and the client's safety regulations.
- 6.4 Contractor's personnel without the proper PPE shall not be allowed on site.
- 6.5 Where necessary, the client shall provide training to the contractor's personnel, in the use of the special PPE.

	Building Group	Position	Work Description
2124	2124		Hydraulic system Exhaust Gas Valves
OEM	2124	001	1 pc. Hydraulic block X734 with 8 pcs. manual controll valves fitting no.: X160, X161, X162, X163, X170, X171, X172, X173, Outer Exhaust Gas Valve to be removed and sent to the manufacturer . Hydraulic block to be reinstalled.
	2124	003	4 pcs. hydraulic grinding motor for Outer Exhaust Gas Valves fitting no.: X632, X633, X720, X721 , to be removed, cleaned and sent to the manufacturer . Grinding motors to be reinstalled. Gaskets and necked studs to be renewed.
	2124	005	4 pcs. Operating hydraulic cylinder Outer Exhaust gas Valves fitting no.: 21241510, 21241511, 21241528, 21241529 to be removed, cleaned and transported to the manufacturer . 4 pcs. Operating hydraulic cylinder to be reinstalled. Necked studs and gaskets to be renewed
	2124	007	Hydraulic block X620 with 4 pcs. manual controll valves fitting no.: X141, X143, X151, X153. Inner Exhaust gas Valve to be removed and sent to the manufacturer . Hydraulic blocks to be reinstalled.
	2124	009	4 pcs. Hydraulic grinding motor for Inner Exhaust Gas Valves fitting No.: X622, X623, X626, X627 to be removed, cleaned and transported to the manufacturer . Oscillating motors to be reinstalled. Gaskets and necked studs to be renewed.
	2124	011	4 pcs. Operating hydraulic cylinder Inner Exhaust Gas Valves fitting no.: 21241518, 21241519, 21241530, 21241531 to be removed, cleaned and sent to the manufacturer . 4 pcs. Operating hydraulic cylinder to be reinstalled. Necked studs and gaskets to be renewed
	2124	013	1 pc. Hydraulic cylinder for the Exhaust Gas Switch-Over Flap fitting no.: 21241512 to be removed cleaned and sent to the manufacturer . 1 pc. Hydraulic cylinder for exhaust gas switch-over flap to be reinstalled. Necked studs and gaskets to be renewed.
2136	2136		Pressure water/fuel oil system
	2136	004	2 pcs. Fuel oil flow meter to be disassembled and checked. Inspection report to be submitted. Fuel oil flow meter to be calibrated Fitting No: 2136B101, B104.
2178	2178		Snorkel

	Building Group	Position	Work Description
	2178	001	Snorkel system to be checked by manufacturer. Report to be submitted. Connecting cables to check by insulation measurements. Renewal of the sealing's head valve. Renewal of the compressed air hoses. Renewal of the water contact.
	2178	003	Snorkel mast to be disassembled and checked by manufacturer specialist. Report to be submitted. Sealings and wear parts to be renewed. Corroded areas at the snorkel-mast to be area blasted and coated in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2C, dated 26 Aug 2013).
	2178	004	Snorkel panel 21790101 to be inspected. Screw and solder joints to be checked. Panel on the inside to be cleaned.
2510	2510		Shafting
	2510	005	Shaft seal be sent to the manufacturer. Renewal of wearing parts of the shaft sealing as carbon ring, O-rings springs and anode protection. Report to be submitted. Pressure test to be performed. Shaft seal to be reinstalled by B+V specialist.
2544	2544		Hollow Spring Main Coupling
	2544	001	Hollow spring coupling: Examination to be carried out by OEM-specialist. Report to be submitted.
2551	2551		Main generators
	2551	001	Generators 25510101, 0201, 0301, 0401 be opened and to be cleaned. Inspection of the charging Generator according to Piller checklist. Report to be submitted. Generators to be reclosed. Precondition: For the inspection the generators have to be ready for operation, also the battery has to be ready.
2916	2916		H2-measuring system
	2916	002	The measuring device to be calibrated with test gas.
	2916	003	1 pc. Distributor Fitting No: 2916H106 leakage test to be performed.
	2916	004	8 pcs. H2 Eliminator to be renewed. Fitting-No.: 29160101-0108 Remark: the recombinators are already 8 years in operation.
3494	3494		Penetration Plug and Socket Connectors

	Building Group	Position	Work Description
	3494	001	37 pcs. Gisma pressure hull penetrator 5 pcs. Gisma junction box 3 pcs. Gisma bulkhead penetrator 2 pcs. Honeywell junction box to be removed and sent to the manufacturer. 47 pcs. hull penetrations to be reinstalled.
	3494	002	37 pcs. Gisma pressure hull penetrator 5 pcs. Gisma junction box 3 pcs. Gisma bulkhead penetrator 2 pcs. Honeywell junction box Components to be cleaned and inspected at the manufacturer. Inspection report to be submitted. Re-useable parts to be reworked and sealings to be renewed. Remark: As a result of the inspection several Gisma-pressure hull penetrations may have to be renewed.
4318	4318		Main line system
	4318	006	Flow meter 4318 I264 to be removed and sent to the manufacturer. Flowmeter to be disassembled, cleaned and checked. Report to be submitted. Gaskets to be renewed. Flowmeter to be calibrated and reinstalled.
4338	4338		Compensating system
	4338	009.1	Flow meter 4338 I102 to be removed and sent to the manufacturer. Flowmeter to be disassembled, cleaned and checked. Report to be submitted. Gaskets to be renewed. Flowmeter to be calibrated.
	4338	010	Flow meter 4338 I102 to be renewed (spare part).
4368	4368		Trim system
	4368	003	Flow meter 4368K101, K102 to be removed, cleaned and sent to the manufacturer. Flow meter to be reinstalled.
	4368	004	Flowmeter to be disassembled, cleaned and checked at the manufacturer. Report to be submitted. Gaskets to be renewed. Flowmeter to be calibrated.
4671	4671		Air condition system
	4671	006	1 pc. Switch and Regulating Cabinet to be checked. Report to be submitted.
	4671	022	Pipe lagging to be checked. Inspection report to be submitted.

	Building Group	Position	Work Description
4676	4676		Built in breathing air system
	4676	007.01	Pressure reducer, pressure controller and H.I.S controler to be transported to the manufacturer. Parts to be disassembled. Inspection report to be submitted. Sealing's and wearing parts to be renewed. Fitting No. 4676Q094, Q125, Q119, Q120, Q127
	4676	016	Pressure controller Q158 1/4" NB56199/SA634MK3 to be removed, cleaned and sent to the manufacturer . Pressure controller to be reinstalled.
	4676	017	Pressure controller Q158 1/4" NB56199/SA634MK3 to be disassembled and checked at the manufacturer. Inspection report to be submitted. Sealing's and wearing parts to be renewed.
4677	4677		CO2 – O2 Measuring Equipment
	4677	001	Combined O2/CO2 Measuring Unit. Both measuring devices to be calibrated. Report to be submitted.
	4677	002	O2 sensor of Measuring Instrument to be renewed.

	Building Group	Position	Work Description
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	Building Group	Position	Work Description
4935	4935		Compressed air system
	4935	003	2 pcs. HP-compressors WP4253/54 to be disassembled. Components to be cleaned and inspected. Piston bolts to be taken off and measured. Connecting rods and main bearings to be measured. Crankshafts to be measured Pins to be polished. Cooling spaces in bodies and covers to be rinsed. Renewal of following parts for each compressor: 1 set of piston rings 1 set of bearings and piston bolt bushings 2 pcs piston bolts 1 pc vent valve 4 pcs optical oil monitors 1 set of fan belts 1 set of suction and pressure valves 1 set of zinc protections 1 set of oil and air filter 1 set of safety valves 1 set of sealing's 1 pc suction filter 2 sets of air coolers to be disassembled and checked in workshop. Housings and inserts to be cleaned and checked. Zinc protections and sealings to renewed. Air coolers to be reassembled. Compressors to be reassembled. Test run to be performed. Remark: The compressors were in service for about 2500 hours.
4936	4936		Compressed Air Liferaft System
	4936	003	2 pcs Pressure Reducer to be disassembled and checked at the manufacturer. Inspection report to be submitted. Sealing's and wearing parts to be renewed. Pressure reducerto be reinstalled. Fitting No.: 4936U759, U766
4938	4938		Compressed Air System HP
	4938	011	Air drier FHD-10-95 Fitting No: 49380200 to be disassambled and checked. Report to be submitted. Air drier to be oberhauled, sealings and wear parts to be renewed. Air drier to be tested by TÜV. Drier to be painted acc. Paint specification.

	Building Group	Position	Work Description
5281	5281		Hoisting Masts for Radar Antenna
	5281	002	Hoistable Mast for Radarantenna to be disassembled and checked by a manufacturer specialist. Report to be submitted. Sealings and wear parts to be renewed. Corroded areas at the FM-Mast to be area blasted and coated in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2C, dated 26 Aug 2013). Rotating Drive 5070X738 to be overhauled, sealings and wear parts to be renewed. Remark: Radar Rotating Drive is very noisy. In case any damages on components are detected, they will be calculated separately.
5321	5321		Hoistable Mast for Optronic Sensor
	5321	001	Optronic Sensors to be checked by manufacturer specialist before disassembly. Inspection report to be submitted. Optronic Head, ocular box, motor drive and hoisting yoke to be removed. Parts to be stored by the Client. After completion of the hoistable mast Optronic Head, Ocular Box, motor drive and hoisting yoke to be reinstalled.
	5321	002	In accordance with item 1282/010 Optronic Mast to be removed and stored. After completion the overhaul of the PH-penetration the optronik hoistable mast will be installed. PH-Penetration sealings to be renewed. Function test to be submitted. Work to be contracted to ZEISS
	5321	003	Optronic Mast to be disassembled and checked by manufacturer specialist. Report to be submitted. Sealings and wear parts to be renewed. Corroded areas at the Opronik-Mast to be area blasted and coated in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2C, dated 26 Aug 2013). In case any damages on components are detected, they will be calculated separately. Remarks: The optronic mast moves in hoisted position from port- to starbord side while the boat is rolling. Leakage on the 2nd stage - 39c3 / 100c3 - 26.05.14 Leakage on the 2nd stage - 100c3 / 100c3 - 27.05.14 Leakage on the Revolution drive - 500c3 / 500c3. Work to done by ZEISS

	Building Group	Position	Work Description
5342	5342		Attack Periscope
	5342	001	Attack Periscope to be removed and stored (for reference see 1282/10). After completion of the overhaul of the PH-penetration the Attack Periscope will be reinstalled. PH-Penetration gasket set to be renewed. Function test to be submitted.
	5342	002	Attack Periscope to be checked by manufacturer specialist. Inspection report to be submitted.

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	Building Group	Position	Work Description
1172	1172		Assembly Hatch
	1172	001	Assembly hatch to be opened and closed incl. all necessary additional works. Assembly hatch to be checked by OEM specialist. Inspection report to be submitted. 240pcs. Spherical washers, 240 pcs. hexagonal protection caps (GPN1000) 120 bolts M 30x150 120 nuts M30 100 pcs. clamp sleeves and sealings to be renewed.
2110	2110		Diesel engines
	2110	001	Maintenance W 5 of the diesel engines No 1-4 after an operating time of 3000 hours to be carried out. Decompression cocks to be renewed.
OEM	2110	004	80 pcs. Anti vibration and shock absorber and mounting screws for diesel engine No 1-4 to be renewed.
2128	2128		Exhaust gas Valves
	2128	001	4 pcs. Inner Exhaust Gas Valves Fitting-No.: 21280100 , 21280200 , 21280300 , 21280400 Inner exhaust gas valves to be removed, cleaned and sent to the manufacturer. Necked studs and gaskets to be renewed Valves to be reinstalled and pressure tested.
	2128	003	4 pcs. Outer Exhaust Gas Valves Fitting-No.: 21280500 , 21280600 , 21280700 , 21280800 to be removed, cleaned and transported to the manufacturer. Necked studs and gaskets to be renewed. Valves to be reinstalled and pressure tested.
	2128	005	Actuation shaft of Change-Over Flap to be dismantled. Actuation shaft, bearings and the hull penetration to be cleaned and checked. Report to be submitted. Actuation of Change-Over Flap to be reinstalled. Gaskets to be renewed.
	2128	006	Actuating rods of the Change Over Flap to be dismantled, cleaned and checked. Report to be submitted. Actuating rods of the Change Over Flap to reinstalled.
	2128	007	Corrosion areas at the actuating rods (max. 1 m ² of the painted surface) to be to be sanded and repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2C, dated 26 Aug 2013).
2178	2178		Snorkel

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	Building Group	Position	Work Description
	2178	005	Inner snorkel flap: Inner snorkel flap to be opened, cleaned and checked. Report to be submitted. Seat ring and O-ring and inspection flange gasket to be renewed. Pressure test on area to be performed.
2510	2510		Shafting
	2510	001	Thrust bearing: Axial- and radial clearance to be checked. Mountings, thrust flange, bearing blocks, thrust blocks to be checked. Report to be submitted.
	2510	002	Oil cooler to be checked. Pressure test to be performed. Report to be submitted.
	2510	003	Propeller to be removed and to be checked. Cleaning and brushing (rotating brushes) the propeller. Report to be submitted. Propeller to be reinstalled. Renewal of zinc protection in stern tube and on propeller. Zinc anodes supplied by Client.
	2510	004	Propeller shaft to be removed. Propeller shaft seal to be dismounted and cleaned. Propeller-shaft, liners, propeller-shaft bearings and propeller shaft to be checked. Report to be submitted. All parts to be reinstalled.
	2510	006	3 pcs. compensators of the turn motor to be renewed. Fitting Nr. 2518/1038, 1039, 1040
2551	2551		Main generators
	2551	003	24 pcs. Anti vibration and shock absorber of the generators to be renewed.
2552	2552		Propeller motor
	2552	005	Anti vibration and shock absorber (32 pcs.) for propeller motor to be renewed. Spacers to be manufactured and alignment to be checked.
3494	3494		Penetration Plug and Socket Connectors
	3494	003	8 pcs. Gisma Blind plugs 13 pcs. IKL plugs to be removed, cleaned and inspected. Inspection report to be submitted. Sealings to be renewed.
	3494	004	12 IKL cable hull penetrator to be cleaned and visual inspected. Inspection report to be submitted.
4120	4120	4120	Hydroplanes and steering rudder

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	Building Group	Position	Work Description
	4120	001	Rudder blades incl. rudder shafts and drive linkages incl. socket joints for hydroplanes fore and aft as well as rudder to be removed, disassembled and cleaned. Friction surfaces on the shafts to be checked and measurements to be performed. Protocol to be submitted. Anode protections (supplied by Client) and sealing's to be renewed. Parts to be reassembled and to be reinstalled.
	4120	002	Bearings forward Hydroplane Stb. and PS to be renewed. 2 pcs. KSC 175300V-2 1 pc. KSC 175300V-1 1 pc. KSC 175300V-3
	4120	003	Forward and aft Hydraulic cylinders (4 pcs.) to be removed and dismantled. Components to be cleaned and checked. Report to be submitted. Sealing's and piston ring to be renewed. Hydraulic cylinders to be reassembled and reinstalled on board. Damaged paint to be sanded and repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2C, dated 26 Aug 2013).
	4120	004	Linkage joint bearings for Hydroplane forward Stb 2 pcs. KSC 186400V-2 (256238) Hydroplane forward PS 2 pcs. KSC 186400V-2 (256238) Side ruder and 2 pcs. KSC 186400V-1 (254474) Hydroplane aft 2 pcs. KSC 186400V-1 (254474) to be renewed.
	4120	005	4 pcs. PH- penetrations for Hydroplane and Rudder to be cleaned and checked. Report to be submitted. Sealing's of the PH-penetration to be renewed.
	4120	006	Central greasing system of the rudder and hydroplane to be cleaned. System to be checked. Report to be submitted. System to be refilled and checked.
4311	4311		Piston bilge pump 1 and 2
	4311	001	Piston Pump HH 140K No 1 and 2 Ident. No: 43110100, 43110200 to be checked by manufacturer specialist . Report to be submitted. All wearing parts incl. internal zinc anodes after an operating time of 3500 hours to be renewed.

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	Building Group	Position	Work Description
	4311	002	1pc. Piston rod Piston Pump No 1 to be renewed. All sealings and wearing parts to be renewed. Report to be submitted.
4315	4315		Bilge Water Deoiler
	4315	001	Bilge water deoiler HDWO 25 A1 Ident. No.: 43150100 and Deoiler pump 43150110 to be inspected and overhauled on board . All wearing parts after an operating time of 4500 hours to be renewed. Report to be submitted.
4522	4522		Fresh Water Generator 2310
	4522	001	Fresh Water Generator to be inspected by the manufacturer after docking. Protokoll to be submitted. Membrane and pressure gauges to be renewed. Remarks: Motor control valve not working properly. All conections to the pressure gauges and to the module are leaking.
4671	4671		Air condition system
	4671	001	2 pcs. Air condition compressor NKS 15C (OSK 7441K) Unit No. R215, R216 to be removed and transported to the workshop. 2 pcs. Air condition compressor to be reinstalled.
		001.1	2 pcs. Air condition compressor NKS 15C (OSK 7441K) to be cleaned, disassembled and checked by the manufacturer. Report to be submitted. Sealings and normal ware parts to be renewed. Remark: the compressor was in service for 7500 hrs.
	4671	002	2 pcs. El-motors Typ GX120 for air condition compressor and sea water cooling pumps Ident. No: 46710103, 46710104 to be removed and sent to the manufacturer. E-motors to be reinstalled.
	4671	003	2 pcs. El-motors Typ GX120 for air condition compressor and sea water cooling pumps Ident. No: 46710103, 46710104 to be dismantled by specialist. Report to be submitted. Rotor (armature windings) and stator to be washed, dried and new impregnated. Commutator to be smoothed and undercut. Rotor to be balanced. Carbon brushes and bearings to be renewed. Motor to be reasssembled. A test bench run with vibration analysis to be performed.
	4671	004	8 pcs. Anti vibration and shock absorber of the air compressors to be renewed.

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	Building Group	Position	Work Description
	4671	007	2 pcs. Condensers 4671R211, R212 including Safety devices, shut-off valves, safety valves and inspection glasses to be removed and transported to the workshop. Condenser covers to be dismantled. Colling pipes to be cleaned by pipe brush, condenser to be inspected. Report to be submitted. Sealings to be renewed. Condenser to be cleaned and painted in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2C, dated 26 Aug 2013). Condenser to be assembled, pressure test to be performed. Condensers 4671R211, R212 including Safety devices, shut-off valves, safety valves and inspection glasses to be reinstalled.
	4671	008	Pipes, inspection glasses, filter, oil separators and fittings to be checked. Report to be submitted.
	4671	009	Air condition unit K1 (46710201) to be cleaned and checked. Ventilation Fan Motor to be overhauled. Motor 46710202 to be cleaned, bearings to be renewed. Damaged paint to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2C, Dated 26 Aug 2013). Report to be submitted. Remark: The fan motor was in service for 55000 hours.
	4671	010	Air condition unit K2 (46710301) to be cleaned and checked. Ventilation Fan Motor to be overhauled Motor to be cleaned, bearings to be renewed. Damaged paint to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2C, Dated 26 Aug 2013). Report to be submitted. Remark: The fan motor was in service for 55000 hours.
	4671	011	Air condition unit K3 (46710402) to be cleaned and checked. Ventilation Fan Motor to be overhauled Motor to be cleaned, bearings to be renewed. Damaged paint to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2C, dated 26 Aug 2013). Report to be submitted. Remark: The fan motor was in service for 55000 hrs.

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	Building Group	Position	Work Description
	4671	012	Air condition unit K4 (46710501) to be cleaned and checked. Ventilation Fan Motor to be overhauled. Motor to be cleaned, bearings to be renewed. Damaged paint to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2C, dated 26 Aug 2013). Report to be submitted. Remark: The fan motor was in service for 55000 hours.
	4671	013	Air condition unit K5 (46710601) to be cleaned and checked. Ventilation Fan Motor to be overhauled. Motor to be cleaned, bearings to be renewed. Damaged paint to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2C, Dated 26 Aug 2013). Report to be submitted. Remark: The fan motor was in service for 55000 hours.
	4671	014	20 pcs. Anti vibration and shock absorber air condition sets. K1, K2, K3, K4. K5 to be renewed.
	4671	023	Freon pipe system incl. condenser to rinse and to pressure test in fitted condition for inspection. After checking the pipe leak detection. Vacuum test to perform. The system to refill with the safety cooling agent R 134 A.
4672	4672		Air condition cooling system
	4672	002	Freon compensator tightness testing under working pressure with Freon leak detector at 36 pcs. metal compensators to be performed. Fitting No. 4672 R171, R172, R173, R174, R175, R176, R177, R178, R179, R180, R181, R182, R183, R184, R185, R186, R187, R188, R189, R190, R193, R194, R195, R196, R197, R198, R199, R200, R201, R202, R203, R204, R205, R206, R235, R236 Report to be submitted.
4676	4676		Built in breathing air system

ANNEXURE A2:
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	Building Group	Position	Work Description
	4676	003	4 pcs. Breathing Air Cylinders Q500, Q600, Q700, Q800 to be disassembled. 8 pcs foundation caps to be dismounted. Connecting piece and drain pipe to be dismantled, seal rings to be renewed with all accessories. Hydraulic pressure test to be performed. Cylinder to be cleaned, rinsed and dried. Wall thickness measurements to be carried out. Inspection to be performed by an AIA certified Institution (Client to supply specification). Report to be submitted. 8 pcs. foundation caps to be maintained with a pourable two component epoxy paste (EPOCAST). After the installation of the breathing air cylinder the system pipes to be connected. Sealings to be renewed.

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	Building Group	Position	Work Description
4715	4715		Provision cooling system
	4715	001	Provision sea water cooling pumps No. 1 + 2 Ident. No: 47150105, 47150106 (UZ 32-160) to be removed and transported to the workshop. Pumps to be cleaned and dismantled. Report to be submitted Impeller, bearings as well as split rings and sealing's to be renewed. Pumps to be reinstalled. Remark: Pump No 1 has been in service for 21.000h, No 2 for 20.500h.
	4715	003	Freon Compressor No. 47150109, 47150110 cooling unit 1 + 2 to be removed, overhauled and reinstalled. Sealings and wearing parts to be renewed. Protocoll to be submitted. Remark: The compressors were in service for 21.000 hours.
	4715	005	Thermal insulating of the meat and vegetable store as well as refrigerator door and the piping's to be checked. Report to be submitted.
	4715	006	Evaporator in cold store 47150102 and deep freeze room 47150101 and refrigerator 47150103 to be cleaned, Drainline heating, fan and fan motor to be checked in situ. Report to be submitted. Remark: The evaporator, the Fan incl. E-Motor were in service for 21.000 hours.
	4715	007	Freon condenser 1 +2 Equipment No.: 47150107, 47150108 to be removed and transported to the workshop. Condenser covers to be dismantled Cooling pipes (sea water side) to be cleaned by pipe brush, condenser to be inspected. Inspection report to be submitted. Condenser covers to be refitted. Sealings to be renewed. Condenser to be cleaned and painted in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2C, dated 26 Aug 2013). Freon condenser 1 +2 to be reinstalled.

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	Building Group	Position	Work Description
	4715	008	Freon pipe system incl. Condenser to rinse and to pressure test in situ for inspection. Dryer to be renewed. After checking the pipe system, leak detection and vacuum test to be performed Report to be submitted. Refill of the system.
	4715	009	El-switch contacts and equipment to open, installed parts and wiring to be cleaned and to be checked. Cable connections to be checked for tight fit. Electrical equipment to be reclosed. Report to be submitted.
	4715	010	4 pcs. Anti vibration and shock absorber for the provision cooling plant to be renewed.
	4715	012	Funktion check Pressure switch 4715S110, S111. Report to be submitted.
	4715	013	Cables and cable connections to be checked. Report to be submitted.
	4715	015	10 pcs. Rubber compensator to be renewed. Fitting-No. 4715S160-S169
	4715	016	Fittings and pipe lagging of the provision cooling system to be checked. Report to be submitted.
	4715	017	Setting the system to work and adjustment of the fittings.

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	Building Group	Position	Work Description
4719	4719		E-Motor Provision cooling system
	4719	002	2 pcs. El-motors GX70SPEZ for provision compressor and sea cooling pump Ident No: 47190102, 47190103 to be dismantled Report to be submitted. Rotor (armature windings) and stator to be washed, dried and new impregnated. Commutator to be smoothed and undercut. Rotor to be balanced. Carbon brushes, bearings and V-belt to be renewed. Motor to be reassembled. A test bench run with vibration analysis to be performed. Remark: E-motor No1 has been in service for 21.000h, No 2 for 20.500h. Damaged paint to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2C, dated 26 Aug 2013).
4778	4778		Chilled Water System
	4778	001	1 pc. chilled water cooling system compressor Item No.: 47780102 to be removed, overhauled and reinstalled. Sealings and wearing parts to be renewed. Protocoll to be submitted. Damaged paint to be patch coated in accordance with the coating plan paint . Remark: The compressor was in service for 8000 hours.
	4778	002	E-Motor chilled water cooling compressor Item No.: 47780201 to be removed and transported to the workshop. E-Moter to be reinstalled.
	4778	004	2 pc. Chilled Water Pump (Typ UZ32-160) Fitting No: 47780402, 47780502 to be removed and transported to the workshop. Chilled water pumd to be disassembled and inspected. Protocoll to be submitted. Bearings as well as split rings and sealing's to be renewed. Damaged paint to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2C, dated 26 Aug 2013). Remark: The Pumps were in service for 4000 hours. The change of impeller is not nesassary .
	4778	005	2 pcs E-motors Typ GMS309 for chilled water pump to be removed and transported to the workshop. Ident No: 47780401, 47780501 E-motors to be reinstalled.

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	Building Group	Position	Work Description
	4778	007	11 pcs. Anti vibration and shock absorber for the chilled water pumps to be renewed. Corroded areas on the foundation in the area of the shock absorber to be ground down to the clean material. The area shall be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2C, dated 26 Aug 2013). After installation the foundation plates of each shock absorber to be cleaned and coated in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2C, dated 26 Aug 2013). Rubber element to be coated 1 x with Pliobond
	4778	008	Freon condenser covers to be removed in situ. Sea water cooling pipes to be cleaned and inspected. Condenser covers to be refitted. Sealings to be renewed. Pressure test to be performed. Damaged paint to be patch coated in accordance with the coating plan paint. Report to be submitted
	4778	009	Pipe system incl. Condenser to rinse and to pressure test in situ for inspection. Dryer to be renewed. After checking the pipe system, leak detection and vacuum test to perform. Report to be submitted. Refill of the system. Remark: Freon and oil supplied by the client.
	4778	010	Control panel chilled water system: El-switch contacts and equipment to open installed parts and wiring to be cleaned and to be checked. Cable connections to be checked for tight fit. Insolation test to be submitted. Electrical equipment to be reclosed. Report to be submitted.

S102 Technical Oversight Activities

	Building Group	Position	Work Description
	4778	011	Engine room: 8 pcs chilled water compensator R311, R312, R313, R314, R318, R319, R321, R320 CIC room: 12 pcs. chilled water compensator R297, R298, R299, R300, R301, R302, R303, R304, R305, R306, R331, R332, Electronic equipment room: 8 pcs. chilled water compensator R293, R294, R307, R308, R309, R310, R315, R316. to be renewed.
	4778	013	Fittings, pipe lagging and coupling felxible disc of the chilled water cooling system to be checked. Report to be submitted.
	4778	014	Expansion tank 47780205 to be replaced.
	4778	015	System pressure test to be performed. Setting the system to work and adjustment of the fittings.
4935	4935		Compressed air system
	4935	007	5 pcs. Pressure Reducers of the compressed air system to be removed, assambled, overhauled and reinstalled. Report to be submitted. Seats, needles, sealing's and membranes to be renewed. Fitting No. 4935 U019, U705, U706, U707, U708.
4937	4937		Service Air System
	4937	004	1 pc. Pressure reducing station to be removed, assambled, overhauled and reinstalled. Report to be submitted. Seats, needles, sealing's and membranes to be renewed. Pressure Reducers to be reinstalled. Fitting No. 4937V130
	4937	005	1 pc. Reducing station to be renewed. Fitting No.: 4937V138
5141	5141		HF-Mast
	5141	001	HF emergency Antenna to be checked by manufacturer specialist. Report to be submitted.
5183	5183		Combined Antenna (2-Stage Transmitting and Receiving Antenna)
	5183	001	2-Stage Transmitting and Receiving Antenna to be removed and stored (for reference see 1282/010). After completion of the overhaul of the PH-penetration the hoistable mast will be installed. PH-Penetration gasket set to be renewed. Function test to be submitted.

ANNEXURE A2:
S102 Technical Oversight Activities

	Building Group	Position	Work Description
	5183	002	2-Stage Transmitting and Receiving Antenna Typ AT 4125 to be disassembled and checked by a manufacturer specialist. Report to be submitted. Sealings and wear parts to be renewed. Corroded areas at the FM-Mast to be area blasted and coated in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2C, dated 26 Aug 2013). In case damages on components are detected subject has to be investigated and quoted separately.

S102 Technical Oversight Activities

	Building Group	Position	Work Description
5281	5281		Hoisting Masts for Radar Antenna
	5281	001	Hoistable Mast for Radar antenna to be removed and stored (for reference see 1282/10). After completion the overhaul of the PH-penetration the hoistable mast will be installed. PH-Penetration sealings to be renewed. Function test to be submitted.
	5292	001	Hull valves fitting no.: X233, X221, X22 to be removed and to be disassembled in workshop. Components to be cleaned and to be checked. Inspection report to be submitted. Sealing's to be renewed. Valves to be reassembled pressure tested (according to the appropriate specification). Valve sealing surfaces on the PH gland to smooth and to grind. Necked studs and nuts to be renewed. Reinstallation of the valves including pressure test on board to be performed.
	7325	005	Hostalen-parts of the guide rails in the torpedo launching area to be removed. Inspection report to be submitted. Hastalen guide rails to be reinstalled and calibrated by caliber jig. The caliber will be supplied by the Client.
8454	8454		TCM System
	8454	001	Torpedo Counter Measures TCM (HDW/ WASS) to be checked by OEM specialists. Report to be submitted. Remarks: Portside "Swing Out Error" shown at RCU - known by Crew / Switch defect. Starboard Side GRP Cover is not closing properly.

Bau Group1	Bau Group	Position	Work Description
0928	0928		Provisional Covering During the Maintenance Phase
	0928	1	Open access to be covered with 22 mm water resistant plywood boards AW 100 (100 m²).
			Passage ways, furniture, furniture wall and electronic cabinet to be protected with 3 mm hardboard (300 m²)
			Material supplied by ADS.
1171	1171		Hull Glands
	1171	1	PH-glands to be inspected and the repair scope of work to be determined.
			Inspection report to be submitted. Corrosion areas to be sponge blasted.
			The area shall be repaired in accordance with the SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016):
			Sect. 10: 15 penetrations
			Sect. 20: 7 penetrations
			Sect. 20: 9 Exhaust gas penetration
			Sect. 31: 33 penetrations
			Sect. 32: 32 penetrations
			Sect. 41: 32 penetrations
			Sect. 42: 26 penetrations (without torpedo tubes)
1172	1172		Assembly Hatch
	1172	1	Assembly hatch to be opened and closed incl. all necessary additional works.
			Assembly hatch to be checked by STM specialist. Inspection report to be submitted.
			240pcs. Spherical washers,
			240 pcs. hexagonal protection caps (GPN1000) 120 bolts M 30x150
			120 nuts M30
			100 pcs. clamp sleeves and sealings to be renewed.
	1172	2	Assembly hatch flanges (5,8 m²) to be cleaned.
			Lining groove 10x10x7300 mm to be sandblasted.
1175	1175		Cells and tanks Inside Pressure Hull
	1175	1	Opening and closing, cleaning, degassing and reclosing of following cells:
			Main ballast tanks No 1-4 (370 m²) Fuel oil bunker No 5 (160 m²) Trim tank 1-4 (190 m²)
			Fresh water tank 1+2 (97 m²) Lub. oil tank (engines 30 m²)
			Compensating fuel oil tank no. 1+ 2 (92m²) Compensating tank no. 1+ 2 (80 m²) Sewage water tank (20 m²)
			Contaminated Lubrication oil tank (16 m²) Fuel oil tank 1-7 (333 m²)
			External fuel oil tank No 13 Fuel oil collecting tank (7,5 m²)
			Weapon compensating tank 1+2 (70 m²)
			Pressure proof compensating tank PS+SB (36 m²) Distillate water tank (30 m²)
			Flush water tank (16 m²). Flooding water tank (30 m²). Fresh water emulsion tank 1+2. Chain Locker
			Snorkel tank
			Work will be done by the client who will provide manhole covers if corrosion is a problem.
	1175	2	Tanks (1175/001) and float switches to be inspected.
			Inspection report to be submitted.
	1175	3	Packings of manhole covers to be renewed.
	1175	4	Check the under 1175/001 listed tanks and bunkers for gas freeness
	1175	5	Loose paint-coating to remove from the tanks mentioned in item 1175.
			Corroded area to be ground down to the clean material. Bare area to be prepared and coated in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	1175	6	19 pcs. dipsticks to be renewed: Trim cell 3+4

Bau Group1	Bau Group	Position	Work Description
			Fresh water tank 1+2 Lub. oil tank (engines)
			Compensating fuel oil tank no. 1+ 2 Compensating tank no. 1+ 2 Sewage water tank
			Contaminated Lubrication oil tank Fuel oil collecting tank
			Weapon compensating tank 1+2
			Pressure proof compensating tank PS+SB Distillate water tank
			Flush water tank
			Flooding water tank
1276	1276		Pressure Proof Storage Container
	1276	1	Pressure proof storage container to be dismantled and transported to the workshop.
			Container to be inspected. Report to be submitted.
			Cover sealing to be renewed.
			Vaccum test to be submitted
	1276	2	Corrosion area at the pressure proof container and the foundation on the upper deck to be sponge blasted.
			Bare areas (max. 5 m ²) to be prepared and coated in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	1276	3	Pressure proof storage container to be reinstalled after completion of work.
1282	1282		Outside Structure of Submarine
	1282	1	All GRP covering plates and doors of conning tower, upper GRP deck fore and aft, as well as stern tube boss and 4 pcs. GRP covers for flank array PS+StbS to be dismantled and reinstalled.
	1282	2	All GRP screws to be renewed.
			The screw front surfaces to be grit blasted and painted in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	1282	3	GRP plates and foundations to be inspected. Report to be submitted.
	1282	4	Damaged paint areas on GRP the external surfaces to be ground and repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01- 00-00, Doc Issue: 2F, dated 3 Nov 2016).
			One full coat to be applied on the GRP external surfaces in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated).
	1282	5	All screwed plates steel plates to be removed, cleaned stored and reinstalled.
	1282	6	Corrosion areas on the screwed plates to be swept (grit blasted) or ground down to the clean material.
			Bare areas to be prepared and coated in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	1282	7	Pressure hull and shell fore and aft:
			The pressure hull including the area behind the covering plates fore and aft, and the area behind the covering plates of the stern tube to be cleaned by HP-water cleaning (1000 bar) on the outside.
		-	Inspection of the pressure hull by STM specialist. Inspection report to be submitted.
			Corrosion areas to be (grit blasted) or ground down to the clean material and be painted in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated).
	1282	8	Ballast weights (563 pcs. 10500 kg) on pressure hull shall be removed.
			Removed ballast weights to be restored and re-shored.
	1282	9	Storage places to be cleaned, loose paint areas to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			Damaged paint areas of the ballast weights to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).

Bau Group1	Bau Group	Position	Work Description
	1282	11	Performance of ultrasonic wall thickness measurements at 200 points of the pressure hull. Measuring protocol to be submitted.
	1282	12	Conning tower : Corrosion areas to be ground down to the clean material of the painted surface. The areas shall be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	1282	13	PH-penetration hoistable masts: After deinstallation of hoistable masts the pressure hull penetrations shall be inspected. Inspection report to be submitted. Penetrations flange surfaces be protected by mean of steel blanks. All penetrations and the immediate pressure hull to be cleaned, grit blasted and preserved in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	1282	14	<u>Ballast Keel:</u> to be open and closed over entire length. Corrosion areas at the Ballast Keel to be sponge grit blasted or mechanically ground down to the clean material. The area shall be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	1282	15	The Ballast Keel outside surface shall be coated in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01- 00-00, Doc Issue: 2F, dated 3 Nov 2016).
	1282	16	Ballast weights keel (1822 pcs. 49.000 kg) in the ballast kiel shall be removed. Removed ballast weights to be restored and wedged. Spare wedge to be supplied.
	1282	17	Damaged paint areas at the ballast weights to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	1282	18	External fuel oil tank No 13: (45 m²) to be cleaned. Corrosion areas to be mechanically ground down to the clean material. The areas shall be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	1282	19	Ballast weights external fuel oil tank (400 pcs. 4.800kg) to be removed. Removed ballast weights to be restored and wedged.
	1282	20	Storage places to be cleaned. Report to be submitted. Damaged paint areas at the ballast weights to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	1282	21	Upper bow room (max. 126 m² torpedo running up area between the muzzle shutters and the shell flaps): Corrosion areas to be grinded mechanically to the clean material. The areas shall be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016). The upper bow room to be coated with 1x Antifouling as per the SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	1282	22	Chain locker (20 m²) Corrosion areas to be grinded mechanically to the clean material. The areas shall be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).

Bau Group1	Bau Group	Position	Work Description
			The Chain locker to be coated with 1x Antifouling as per the SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	1282	23	Main ballast tank 1-4, fuel oil bunker No 5: (884 m²) Corrosion areas to be ground mechanically to the clean material. The areas shall be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			The Main ballast tanks No 1-4 and Fuel oil bunker No 5 to be coated with 1x Antifouling as per the SA Navy Submarine Coating Plan (Doc No: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	1282	24	Ballast weights (Main ballast tank 1-4, fuel oil bunker No 5) (1777 pcs 45.369 Kg) shall be removed. Report to be submitted. Removed ballast weights to be restored and wedged.
	1282	25	Damaged paint areas at the ballast weights to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	1282	26	Storage places to be cleaned (to be performed by TUE under the tank cleaning contract).
1613	1613		Pressure Tight Hatch Covers
	1613	1	Hatch covers for the Aft upper and lower battery hatch, Upper and lower access trunk hatch, Divers hatch port side and Fwd. upper and lower battery hatch to be removed and disassembled. Components to be cleaned and checked. Report to be submitted. Sealing's, springs and venting cocks to be renewed. After completion of work all hatch covers to be reinstalled.
	1613	2	Corrosion areas to be grinded mechanically to the clean material. The areas shall be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	1613	3	2 pcs. air traps to be removed, cleaned and inspected. Inspection report to be submitted.
		REPLACE (MAT)	Air traps to be reinstalled, function to be checked.
1636	1636		Stairs, Floorboards and Gratings
	1636	1	Floor plates of the ECR, galley, sanitary rooms, CIC and engine room, passage way and the forward accommodation to be removed. Floor plates and floorframes to be checked. Inspection report to be submitted. Renewal of hinges and push button catches. Floor plates to be reinstalled after completion of work.
1780	1780		Safety & Life Saving Installation
	1780	1	2 pcs. Liferaft GRP container to be removed and reinstalled by SA Navy after completion of work .
	1780	2	2 pcs. Liferaft storage facility to be dismounted and transported to the workshop. System to be disassembled and cleaned. Inspection Report by STM specialist to be submitted.
			2 pcs. Liferaft storage facility reassembled and installed on board.
	1780	3	Corrosion areas to be swept (grit blasted) or to be ground down to the clean material. The area shall be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	1780	4	2 pcs. Drive of lock mech for liferaft container

Bau Group1	Bau Group	Position	Work Description
			2 pcs. Discharge device for Life Raft Container (air telescope cylinder) to be removed, disassembled, cleaned, overhauled, pressure tested and reinstalled.
			Sealings to be renewed.
			Pressure hull penetration to be inspected. Report to be submitted.
	1780	5	2 pcs cable set and outboard plugs to be overhauled.
1919	1919		Cathelco System
	1919	1	Control cabinet to be checked. Report to be submitted.
			7 pcs. cathelco anodes and cables to be removed and renewed to a modified typ. EC???
1916	1916		Corrosion Protection through Sacrificing Anodes
	1916	1	Anode protection rings of the sea water inlet valves to be replaced. Inspection report to be submitted.
	1916	2	Anode protection units outside the pressure hull under consideration of the anode protection drawings 365/1912-01-00-00
			Pos No 1 244 pcs.
			Pos No 2 85 pcs.
			Pos No 3 233 pcs. Pos No.4 18 pcs. to be inspected.
			Inspection report to be submitted.
	1916	3	Anode protection units of cells and tanks inside the pressure hull under consideration of the anode protection drawings:
			365/1912-02-00-00
			Pos No 1 90 pcs.
			Pos No 2 4 pcs.
			Pos No 3 190 pcs.
			Pos No 4 124 pcs. to be inspected.
			Inspection report to be submitted.
	1916	4	40 pcs. Anode protections of the exhaust silencer of the diesel engines to be inspected.
			Inspection report to be submitted. Sealings to be renewed.
	1916	5	4 pcs. Anode protection of the sea water filters to be inspected.
			Inspection report to be submitted.
1947	1947		Paint Protection for Inner Ship
	1947	1	Following compartments and bilges: Control Room (CR)
			Command Information Centre (CIC), Engine room, Aux. engine room, Stowage room, Sanitary rooms Accommodations Torpedo stowage space to be cleaned by Client prior to painting.
	1947	2	In following compartments and bilges:
			Control Room (CR)
			Command Information Centre (CIC), Engine room,
			Aux. engine room, Stowage room, Sanitary rooms Accommodations
			Torpedo stowage space
			Loose paint to be removed, corrosion areas to
			be ground mechanically down to the clean material. Damaged paint areas to be sanded and repaired in accordance with SA Navy
			Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	1947	3	On completion of work, all internal compartments are to given 1 full final coat of paint as per the SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 26 Aug 2013).
2110	2110		Diesel Engines
	2110	1	Maintenance W 5 of the diesel engines No 1-4 after an operating time of 3000 hours to be carried out.
			Decompression cocks to be renewed.
	2110	2	4 back-up battery in the control board (engine room) to be replaced.
	2110	3	Thermal pipe insulating of the diesel engines to be checked.
			Report to be submitted

Bau Group1	Bau Group	Position	Work Description
Anti vibration and shock absorbers	2110	4	80 pcs. Anti vibration and shock absorber and mounting screws for diesel engine No 1-4 to be renewed.
	2110	5	Corroded areas on the foundation to be ground down to the clean material.
			The area shall be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			After installation the foundation plates of each shock absorber to be cleaned and coated in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			Rubber element to be coated 1 x with Pliobond.
2124	2124		Hydraulic System Exhaust Gas Valves
STM	2124	1	1 pc. Hydraulic block X734 with 8 pcs.manual controll valves fitting no.: X160, X161, X162, X163, X170, X171, X172, X173,
		manufacturer ?	Outer Exhaust Gas Valve to be removed and sent to the manufacturer.
			Hydraulic block to be reinstalled.
STM	2124	2	Outer Exhaust Gas Valve hydraulic block X734 with 8pcs. manual controll valves fitting no.: X160, X161, X162, X163, X170, X171, X172, X173 to be disassembled, cleaned and checked.
			Inspection report to be submitted. Hydraulic valves to be overhauled. Sealings to be renewed.
			Hydraulic block and valves to be painted in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	2124	3	4 pcs. hydraulic grinding motor for Outer Exhaust Gas Valves fitting no.:X632, X633, X720, X721, to be removed, cleaned and sent to the manufacturer.
			Grinding motors to be reinstalled. Gaskets and necked studs to be renewed.
	2124	manufacturer ?	4 pcs. hydraulic grinding motor for Outer Exhaust Gas Valve fitting no.:X 632, X633, X720, X721, to be assembled. Inspection report to be submitted.
			Grinding motor to be overhauled and pressure tested. Sealings to be renewed.
			Hydraulic motor to be painted in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	2124	5	4 pcs. Operating hydraulic cylinder Outer Exhaust gas Valves fitting no.: 21241510, 21241511, 21241528, 21241529 to be removed, cleaned and transported to the manufacturer.
			4 pcs. Operating hydraulic cylinder to be reinstalled. Necked studs and gaskets to be renewed
	2124	6	4 pcs. Operating hydraulic cylinder Outer Exhaust gas Valves fitting no.: 21241510, 21241511, 21241528, 21241529 to be assembled.
			Inspection report to be submitted.
			Hydraulic cylinder to be overhauled and pressure tested. Parts to be painted in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	2124	7	Hydraulic block X620 with 4 pcs. manual controll valves fitting no.: X141, X143, X151, X153.
		manufacturer ?	Inner Exhaust gas Valve to be removed and sent to the manufacturer.
			Hydraulic blocks to be reinstalled.
	2124	8	Inner Exhaust gas Valve hydraulic block X620 and valves fitting no.: X141, X143, X151, X153,

Bau Group1	Bau Group	Position	Work Description
			to be disassembled, cleaned and checked. Inspection report to be submitted.
			Hydraulic valves to be overhauled. Sealings to be renewed.
			Hydraulic block and valves to be painted in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	2124	manufacturer ?	4 pcs. Hydraulic grinding motor for Inner Exhaust Gas Valves fitting No.: X622, X623, X626, X627 to be removed, cleaned and transported to the manufacturer.
			Oscillating motors to be reinstalled.
			Gaskets and necked studs to be renewed.
	2124	10	4 pcs. Hydraulic grinding motor for Inner Exhaust Gas Valves fitting No.: X 622, X623, X626, X627 to be assembled. Inspection report to be submitted.
			Grinding device to be overhauled and pressure tested. Sealings to be renewed.
			Parts to be painted in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	2124	11	4 pcs. Operating hydraulic cylinder Inner Exhaust Gas Valves fitting no.: 21241518, 21241519, 21241530, 21241531 to be removed, cleaned and sent to the manufacturer.
			4 pcs. Operating hydraulic cylinder to be reinstalled. Necked studs and gaskets to be renewed
	2124	12	4 pcs. Operating hydraulic cylinder Inner Exhaust Gas Valves fitting no.: 21241518, 21241519, 21241530, 21241531 to be assembled.
			Inspection report to be submitted.
			Hydraulic cylinder to be overhauled and pressure tested. Parts to be painted in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	2124	manufacturer ?	1 pc. Hydraulic cylinder for the Exhaust Gas Switch-Over Flap fitting no.: 21241512 to be removed cleaned and sent to the manufacturer.
			1 pc. Hydraulic cylinder for exhaust gas switch-over flap to be reinstalled.
			Necked studs and gaskets to be renewed.
	2124	14	1 pc. Hydraulic cylinder for the Exhaust Gas Switch-Over Flap fitting no.: 21241512 to be disassambled, cleaned and inspected.
			Inspection report to be submitted. Hydraulic cylinder to be overhauled. Sealings to be renewed.
			Cylinder to be painted in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	2124	15	2 pcs. compensators to be renewed.
			Fitting No. 21241073, 21241074.
2128	2128		Exhaust Gas Valves
	2128	1	4 pcs. Inner Exhaust Gas Valves Fitting-No.: 21280100, 21280200, 21280300, 21280400
		manufacturer ?	Inner exhaust gas valves to be removed, cleaned and sent to the manufacturer.
			Necked studs and gaskets to be renewed
			Valves to be reinstalled and pressure tested.
	2128	2	4 pcs Inner Exhaust Gas Valves Fitting-No.: 21280100, 21280200, 21280300, 21280400 to be disassembled.
			Components to be cleaned and checked. Report to be submitted.
			Valve to be overhauled and pressure tested.
			Valve seats, cooling jacket Equip.No.: 146747 and sealings to be renewed.
			Inner exhaust gas valve be painted in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).

Bau Group1	Bau Group	Position	Work Description
	2128	3	4 pcs. Outer Exhaust Gas Valves Fitting-No.: 21280500, 21280600, 21280700, 21280800 to be removed, cleaned and transported to the manufacturer.
			Necked studs and gaskets to be renewed. Valves to be reinstalled and pressure tested.
	2128	4	4 pcs. Outer Exhaust Gas Valves to be disassembled cleaned and checked. Report to be submitted.
			Valve to be overhauled and pressure tested. Valve seats and sealings to be renewed.
			Outer exhaustgas valve to be painted in according with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	2128	5	Actuation shaft of Change-Over Flap to be dismantled. Actuation shaft, bearings and the hull penetration to be cleaned and checked. Report to be submitted.
			Actuation of Change-Over Flap to be reinstalled. Gaskets to be renewed.
	2128	6	Actuating rods of the Change Over Flap to be dismantled, cleaned and checked. Report to be submitted.
			Actuating rods of the Change Over Flap to reinstalled.
	2128	7	Corrosion areas at the actuating rods (max. 1 m² of the painted surface) to be to be sanded and repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
2129	2129		Exhaust Gas Change Over Flap
Ein-Ausbau	2129	1	Exhaust gas change-over flap Fitting No: 2129A034, A035, A036, A037 and metall compensator Fitting No: 2129A152, A145, A153, A144, A155, A150, A154, A151 to be removed dissambled, cleaned, checked and reinstalled. Gaskets to be renewed. Inspection report to be submitted.
Überh.	2129	2	Exhaust gas change-over flap Fitting No: 2129A034, A035, A036, A037 and compensator dissambled, cleaned, checked. Inspection report to be submitted. Change over flap to be overhauled. Sealings and bushes to be renewed.
	2129	3	Corrosion areas of the Cange Over Flag (max. 1 m² of the painted surface) to be to be sanded and and repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
Hull Valves - 2 pcs. valves of the exhaust gas system. Fitting No. 2129A005, A023	2129	4	2 pcs. combined hull valves fitting no.: 2129A005, 2129A023 to be removed and to be disassembled in workshop. Components to be cleaned and checked. Inspection report to be submitted. Sealing's to be renewed. Valves to be reassembled and pressure tested Valve sealing surfaces on the PH gland to smooth and to grind. Reinstallation of the valves including pressure test on board to be performed.
	2129	5	Exhaust gas silencer diesel engines:

Bau Group1	Bau Group	Position	Work Description
			Silencer drain tubes and anode protection to be renewed. Material 1.4539
			Diesel 1 tube No.: 417, 418, 441/25/2,5
			Diesel 2 tube No.: 419, 420, 440/25/2,5
			Diesel 3 tube No.: 422, 421, 439/25/2,5
			Diesel 4 tube No.: 423, 424, 444/25/2,5
	2129	6	Pneum.drain valve Fitting-No.: 2129A001, A002, A003, A004 to be renewed.
	2129	7	4 pcs. Pneumatic exhaust gas venting valves fitting No.: 2129A007, A008, A009, A010 to be removed, cleaned and assembled.
			Inspection report to be submitted.
			Valves to be overhauled, sealings and diaphragm bellows to be renewed.
			Valves to be reinstalled and pressure tested.
	2129	8	4 pcs. Exhaust gas filter 2129A130, A131, A132, A133 to be renewed.
2136	2136		Pressure Water/Fuel Oil System
10 pcs valves of the fuel oil transfer and pressure water system Fitting No. 2136B020, B021, B032, B033, B039, B040, B054, B055, B056, B070	2136	1	Hull valves and valves of the second shut-off to be removed and to be disassembled in workshop.
			Components to be cleaned and to be checked. Inspection report to be submitted.
			Sealing's to be renewed.
			Valves to be reassembled pressure tested (according to the appropriate specification).
			Valve sealing surfaces on the PH gland to smooth and to grind. Reinstallation of the valves including pressure test on board to be performed.
			10 pcs valves of the fuel oil transfer and pressure water system Fitting No. 2136B020, B021, B056, B070 B032, B033, B039, B040, B054, B055.
	2136	2	17 pcs. Screwed bonnet type shut-off valve Fitting-No.: 2136B008, B010, B011, B018, B027, B029, B041, B042, B043, B044, B045, B047, B048, B053, B071, B072, B073 and
			2 pcs. Screwed bonnet non-return valve Fitting-No.: 2136B015, B064 to be replaced by a Göpfert valve.
			Pipe and pipe connection to the new valve type to be renewed (max. 1m).
	2136	3	2 psc. Fuel oil flow meter to be removed, cleaned and sent to the manufacturer.
			Fuel oil flow meter to be reinstalled Fitting No: 2136B101, B104.
	2136	4	2 pcs. Fuel oil flow meter to be disassembled and checked. Inspection report to be submitted.
		Unable to do ?	Fuel oil flow meter to be calibrated Fitting No: 2136B101, B104.
	2136	5	9 pcs rubber compensators to be renewed.
			Fitting No.: 2136B117, B118, B119, B120, B144, B145, B146, B152, B177.
	2136	6	8 pcs. safety valves to be removed and overhauled. Sealing's and springs to be renewed.

Bau Group1	Bau Group	Position	Work Description
			Safety valves to be pressure tested and refitted.
			Fitting No. 2136B122, B123, B124, B125, B126, B127, B142, B143
			1 pcs. safety valve Fitting No. 2136B133 to be renewed.
	2136	7	9 pcs. shut-off flaps to be removed and overhauled. Sealings to be renewed.
			Safety valves to be pressure tested and refitted.
			Fitting No. 2136 B001, B002, B003, B004, B024, B025, B030, B181, B182
	2136	8	2 pcs. Automatic Venting Valve to be removed, overhauled and reinstalled.
			Sealings to be renewed.
			Remark: the valves do not work properly (sticking) Fitting No: 2136B129, B130
	2136	9	2 pcs Strainers to be taken up on board and to be cleaned. Sealings to be renewed.
			Fitting No: 2136B114
			Fitting No: 2136B128
	2136	10	System to be checked and Pressure tested.
			Report to be submitted.
	2136	11	Fitting 2136 B052 to be overhauled
2148	2148		Diesel Engine Lub. Oil System
2 pcs valves of the engine lub. oil system. Fitting No. 2148C023, C024	2148	1	Hull valves and valves of the second shut-off to be removed and to be disassembled in workshop.
Fitting No. 2148C023, C024			Components to be cleaned and to be checked. Inspection report to be submitted.
			Sealing's to be renewed.
			Valves to be reassembled pressure tested (according to the appropriate specification).
			Valve sealing surfaces on the PH gland to smooth and to grind. Reinstallation of the valves including pressure test on board to be performed.
			2 pcs valves of the engine lub. oil system.
			Fitting No. 2148C023, C024
	2148	2	5 pcs. Screwed bonnet type shut-off valve
			Fitting-No.: 2148C026, C160, C161, C162, C163
			1 pcs Drain cock Fitting-No.: 2148C006 4 pcs. Three-way cock
			Fitting-No.: 2148C001, C002, C015, C017
		EC	to be replaced by a Göpfert valves.
			Pipe and pipe connection to the new valve type to be renewed (max. 1m).
	2148	3	Strainer No. 2148C102 to be taken up on board and to be cleaned.
			Sealing to be renewed.
			Strainer to be reinstalled.
	2148	4	Safety valves to be removed and overhauled. Sealing's and springs to be renewed.
			Safety valves to be pressure tested and refitted.
			Fitting No: 2148C103, C104
	2148	5	20 pcs. rubber compensators to be renewed.
			Fitting No. 2148C130, C131, C133, C134, C135, C136, C137, C138, C139, C140, C141, C142, C143, C144, C145, C146, C147, C148, C157, C158.
	2148	6	2 pcs. Pneumatic driven dirty oil pumps fitting No.: C100, C101 to be removed, cleaned and disassembled.
			Pump to be overhauled, wear parts to be renewed,
			Pump to be reinstalled.
	2148	7	4 pcs. C-Type Coupling PN16 to be renewed.
			Fitting No. 2148C164, C165, C166, C167
	2148	8	System to be checked and Pressure tested.
			Report to be submitted.

Bau Group1	Bau Group	Position	Work Description
2154	2154		Cooling Seawater System (HP)
8 pcs valves of the cooling sea water (HP). Fitting No.2154E001, E052, E053, E054, E055, E073, E137, E138	2154	1	Hull valves and valves of the second shut-off to be removed and to be disassembled in workshop.
			Components to be cleaned and to be checked. Inspection report to be submitted.
			Sealing's to be renewed.
			Valves to be reassembled pressure tested (according to the appropriate specification).
			Valve sealing surfaces on the PH gland to smooth and to grind.
			Reinstallation of the valves including pressure test on board to be performed.
			8 pcs valves of the cooling sea water (HP). Fitting No. 2154E001, E073 Fitting No. 2154E052, E054, E137
			Ball Cocks with Hydraulic Rotary Drive Fitting No.2154E053, E055, E138.
			Sealings and Ball to be renewed.
Anti vibration and shock absorbers	2154	2	53 pcs. rubber compensators and screws to be renewed. Fitting No. 2154E140, E141, E201, E202, E203, E204, E205, E206, E213, E214, E215, E216, E217, E218, E219, E220, E221, E222, E223, E224, E225, E226, E227, E228, E229, E230, E233, E234,E235, E236, E237, E238, E239,E240, E241, E245, E250, E251, E252,E253, E254, E255, E291, E292, E293, E294, E295, E296, E297, E298, E335, E336,E337.
	2154	3	27 pcs. Screwed bonnet type shut-off valve Fitting-No.: 2154E002, E003, E005, E006, E009, E010, E040, E041, E048, E051, E061, E072, E092, E093, E094, E100, E101, E106, E107, E110, E114, E133, E136, E307, E308, E315, E318
			to be replaced by a Göpfert valves.
			Pipe and pipe connection to the new valve type to be renewed (max. 1m).
	2154	4	Strainer No. 2154E247 and 2154E249 to be cleaned.
			Sealing to be renewed.
	2154	5	15 pcs. Watertight shut off flaps to be overhauled. Sealing's to be renewed.
			Fitting No. 2154E004, E017, E018, E022, E028, E029, E030, E031, E042, E043, E082, E083, E311, E312, E319.
	2154	6	4 pcs Non return flaps to be overhauled Sealing's to be renewed.
			Fitting No. 2154E007, E008, E102, E103.
	2154	7	14 pcs. Pneumatic driven Ball Cocks Fitting No. 2154/ E014, E016, E086, E087, E088, E089, E090,E091, E0109, E111, E112, E113, E115, E119 to be removed, cleaned, disassembled overhauled, pressure tested and reinstalled.
			Sealings and Balls to be renewed.
			Report to be submitted.
	2154	8	4 pcs. Hand operated Ball Cocks Fitting No: E032, E034, E074, E076 to be removed, cleaned, disassembled overhauled, pressure tested and reinstalled.
			Sealings and Ball to be renewed. Report to be submitted.
			2 pcs.Ball Cocks Fitting No; M021, M022 to be renewed.
	2154	9	4 pcs. Fluid Silencer 2154E320, E321, E322, E323 to be removed, cleaned and disassembled.
			Inspection report to be submitted.
			Rubber Insert and Sealing to be renewed.
			Fluid Silencer to be assembled, presure tested and reinstalled.
	2154	10	1 pc. Dual pressure gauge unit to be renewed.

Bau Group1	Bau Group	Position	Work Description
			Fitting No. 2154E269
	2154	11	2 pcs. Globe valves to be checked. Fitting-No.: 2154E039, E050
			Sealings and stop cone to be renewed.
			Report to be submitted.
	2154	12	Pressure test of the system to be performed.
			Report to be submitted.
2155	2155		Cooling Seawater System (LP)
8 pcs valves of the cooling sea water (LP). Fitting No. 2155E057, E058, E066, E067, E078, E079, E080, E081	2155	1	Hull valves and valves of the second shut-off to be removed and to be disassembled in workshop.
			Components to be cleaned and to be checked. Inspection report to be submitted.
			Sealing's to be renewed.
			Valves to be reassembled pressure tested (according to the appropriate specification).
			Valve sealing surfaces on the PH gland to smooth and to grind. Damaged necked studs, bolts and nuts to be renewed.
			Reinstallation of the valves including pressure test on board to be performed.
			4 pcs Hull valves of the cooling sea water (LP). Fitting No. 2155E057, E066, E078, E080,
			4 pcs Pneumatic driven Ball Cocks of the cooling sea water (LP). Fitting No. 2155E058, E067, E079, E081.
			Remark: Valve balls will be renewed.
	2155	2	6 pcs Safety valves to be overhauled. Sealing's, and springs to be renewed. Valves to be reassembled and adjusted.
			Fitting No. 2155E075, E077, E118, E143, E144, E147.
	2155	3	13 pcs. Watertight shut off flaps to be removed, cleaned, overhauled and pressure tested in the workshop.
			Sealing's to be renewed. Shut off flags to be reinstalled. Fitting No. 2155E019, E020, E023, E024, E027 E044, E045, E046, E047, E056, E059, E062, E069.
	2155	4	4 pcs. Non return flaps to be removed, cleaned, overhauled and pressure tested in the workshop.
			Sealing's to be renewed.
			Non return flags to be reinstalled.
			Fitting No. 2155 E035, E036, E 037, E038.
	2155	5	2 pcs. Strainers to be cleaned. Sealings to be renewed.
			Fitting-No: 2155 E120, E121.
	2155	6	13 pcs. rubber compensators to be renewed.
			Fitting No. 2155E162, E163, E164, E165, E125, E124, E130, E131, E126, E127, E128, E129, E132.
	2155	7	6 pcs. Screwed bonnet type shut-off valve
			Fitting-No.: 2155E060, E063, E070, E071, E104, E105 to be replaced by a Göpfert valves.
			Pipe and pipe connection to the new valve type to be renewed (max. 1m).
	2155	8	Pressure test of the system. System to be checked.
			Report to be submitted.
2156	2156		Cooling Freshwater System for Diesel Engines
	2156	1	16 pcs. rubber compensators to be renewed
			Fitting No. 2156 D110, D113, D114, D117, D111, D112, D115, D116, D102, D103, D104, D101, D105, D106, D107, D108.
	2156	2	1 pc. Safety valve to be renewed.

Bau Group1	Bau Group	Position	Work Description
			Safety valve to be pressure tested and refitted. Fitting No. 2156D122
	2156	EC	10 pcs. Screwed bonnet type shut-off valve to be replaced by a Göpfert valves. Pipe and pipe connection
			to the new valve type to be renewed (max. 1m).
			Fitting-No.: 2156D001, D002, D003, D004, D006, D007, D008, D009, D141, D142.
	2156	5	Pressure test of the system. System to be checked.
			Report to be submitted.
2158	2158		Freshwater Cooling Pump
	2158	1	1 pc. Freshwater cooling pump Fitting No: 21580200 (REW 40-260)
			to be removed and transported to the workshop.
			Pumps to be reinstalled.
	2158	2	1 pc. Freshwater cooling pump
			Fitting No: 21580200 (REW 40-260) to be cleaned and dismantled and overhauled.
			Report to be submitted
			Impeller as well as split rings, bearings and sealing's to be renewed.
			Remark: Pump No 1 has been in service for 25.000 h,
			No 2 for 25.000 h.
	2158	3	Damaged paint on the Freshwater cooling pump to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	2158	4	Anti vibration and shock absorber Freshwater cooling pumps (4 pcs.) to be renewed.
	2158	5	Corroded areas on the foundation in the area of the shock absorber to be ground down to the clean material.
			The area shall be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			After installation the foundation plates of each shock absorber to be cleaned and coated in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			Rubber element to be coated 1 x with Pliobond.
	2158	6	1 pc. E-Motor for Freshwater pump Typ DVX 80/4B to be removed and transported to the workshop.
			E-Motor to be reinstalled.
	2158	7	1 pc. EI-Motor for Freshwater pump to be dismantled and checked by specialist.
			Report to be submitted.
			Rotor (armature windings) and stator to be washed, dried and new impregnated.
			Rotor to be balanced. Bearings to be renewed. Motor to be reassembled.
			A test bench run with vibration analysis to be performed.
			Damaged paint to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
2178	2178		Snorkel
	2178	Manufacturer ?	Snorkel system to be checked by manufacturer. Report to be submitted.
			Connecting cables to check by insulation measurements.
			Renewal of the sealing's head valve.
			Renewal of the compressed air hoses.
			Renewal of the water contact.
	2178	2	Snorkel mast to be removed and stored.

Bau Group1	Bau Group	Position	Work Description
			After completion the overhaul of the PH-penetration the hoistable mast will be reinstalled.
			Sealings to be renewed. Function test to be submitted.
	2178	Manufacturer ?	Snorkel mast to be disassembled and checked by manufacturer specialist.
			Report to be submitted.
			Sealings and wear parts to be renewed.
			Corroded areas at the snorkel-mast to be area blasted and coated in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	2178	4	Snorkel panel 21790101 to be inspected. Screw and solder joints to be checked.
			Panel on the inside to be cleaned.
	2178	5	Inner snorkel flap:
			Inner snorkel flap to be opened, cleaned and checked. Report to be submitted.
			Seat ring and O-ring and inspection flange gasket to be renewed.
			Pressure test on area to be performed.
	2178	6	Inner snorkel flap
			Damaged paint areas to be sanded to the clean material and painted in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	2178	7	Outer snorkel flap:
			Outer snorkel flap to be removed, disassemble, checked and cleaned.
			Report to be submitted.
			Seat ring to be removed, Sealings and gaskets to be renewed. Pressure tests in workshop and on area to be performed.
	2178	8	Outer snorkel flap
			Damaged paint areas to be sanded to the clean material and painted in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
2510	2510		Shafting
	2510	1	Thrust bearing:
			Axial- and radial clearance to be checked.
			Mountings, thrust flange, bearing blocks, thrust blocks to be checked.
			Report to be submitted.
	2510	2	Oil cooler to be checked. Pressure test to be performed.
			Report to be submitted.
	2510	Remove and replace (NSD)	Propeller to be removed and to be checked. Equipment and tools?
			Cleaning and brushing (rotating brushes) the propeller. Report to be submitted.
			Propeller to be reinstalled.
			Renewal of zinc protection in stern tube and on propeller. Zinc anodes supplied by Client.
	2510	Possible inspection first	Propeller shaft to be removed.
			Propeller shaft seal to be dismounted and cleaned.
			Propeller-shaft, liners, propeller-shaft bearings and propeller shaft to be checked.
			Report to be submitted.
			All parts to be reinstalled.
	2510	Manufacturer ?	Shaft seal be sent to the manufacturer.
			Renewal of wearing parts of the shaft sealing as carbon ring, O-rings springs and anode protection.
			Report to be submitted. Pressure test to be performed.
			Shaft seal to be reinstalled by B+V specialist.
	2510	6	3 pcs. compensators of the turn motor to be renewed.
			Fitting Nr. 2518/1038, 1039, 1040

Bau Group1	Bau Group	Position	Work Description
2544	2544		Hollow Spring Main Coupling
Replace?	2544	1	Hollow spring coupling:
			Examination to be carried out by STM-specialist. Report to be submitted.
	2544	2	Corroded areas to be ground down to the clean material. The area to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
2551	2551		Main Generators
	2551	1	Generators 25510101, 0201, 0301, 0401 be opened and to be cleaned.
			Inspection of the charging Generator according to Pillar checklist. Report to be submitted.
			Generators to be reclosed. Precondition:
Which battery?			For the inspection the generators have to be ready for operation, also the battery has to be ready.
	2551	2	Generator cables insulation resistance and brittleness test to be performed.
			Report to be submitted.
	2551	3	24 pcs. Anti vibration and shock absorber of the generators to be renewed.
	2551	4	Corroded areas on the generator foundation to be ground down to the clean material.
			The area shall be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			After installation the foundation plates of each shock absorber to be cleaned and coated in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			Rubber element to be coated 1 x with Pliobond.
2552	2552		Propulsion Motor
	2552	1	Repair of propulsion motor Type 1GR4484-9ZZ99-Z Ident No 25520101 by Siemens specialists as follows: Propeller motor to open and to clean dry.
			Removal of the upper bearing halves of both bearings. Bearing halves to clean.
			4 pcs. dial oil shaft sealings to be renewed. Anker body to lift.
			Propeller motor and bearing halves to check. Report to be submitted.
			Spare part proposal and cost offer to be submitted. Propeller motor to be reassembled and tested.
			Test protocol to be submitted.
	2552	1.1	Brush-carrier to be cleaned, turn device to be checked.
			192 pcs. Carbo brushes E50-12,5*20*32,5 to be renewed.
EC	2552	1.2	Tachogenerator J712325P5,7,8 and revolution counter J712325P4,8 to be checked.
			1pc. gear belt to be renewed.
			Report to be submitted.
	2552	1.3	Transmitter for temperature measurement to be cleaned, checked and adjusted.
	2552	2	Propeller motor cables insulation resistance and brittleness test to be performed.
			Report to be submitted.
	2552	3	2 pcs. air coolers Ps + StbS Type 1870/650/46/ DSV-S200- 50N202 for the propeller motor deflection and socket chamber to be removed.

Bau Group1	Bau Group	Position	Work Description
			Cooler to be inspected, results to be reported.
			Cooler to be cleaned with pipe brushes and highpressure flushed.
			O- and U-profile seals for the chamber to be renewed.
			Pressure test to be performed.
	2552	4	4 pcs. separate fans for propeller motor Typ 1GA4 136 to be opened cleaned and checked.
			Report to be submitted.
			Carbon brushes E50-12,5*20*32,5 to be renewed.
	2552	5	Anti vibration and shock absorber (32 pcs.) for propeller motor to be renewed.
			Spacers to be manufactured and alignment to be checked.
	2552	6	Corroded areas on the propeller motor foundation to be ground down to the clean material.
			The area shall be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			After installation the foundation plates of each shock absorber to be cleaned and coated in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			Rubber element to be coated 1 x with Pliobond.
2553	2553		Pumps for Cooling Seawater System
	2553	1	Main cooling sea water pumps HP
			Ident. No: 25530100 (REW 100-200) N0.1
			Ident. No: 25530200 (REW 65-200) N0.2
			to be removed cleaned and transported to the workshop. Pumps to be reinstalled.
		Specialist?	Pumps to be dismantled by specialist. Report to be submitted.
			Remark: Seewaterp. No 1 has been in service for 18.000 h, No 2 for 24.000 h.
			Impeller, as well as split rings and sealing's to be renewed.
	2553	2	Damaged paint main cooling sea water pumps HP to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 26 Aug 2013).
	2553	3	2 pcs. EI-motors for Main sea water cooling pumps HP Typ GMS518 Ident. No: 25530101, Typ GMS413 Ident. No. 25530201 to be removed, cleaned and transported to the workshop. E-motors to be reinstalled.
	2553	4	2 pcs. EI-motors for Main sea water cooling pumps HP Typ GMS518 Ident. No: 25530101,
			Typ GMS413 Ident. No. 25530201 to be dismantled and checked.
			Report to be submitted.
			Rotor (armature windings) and stator to be washed, dried and new impregnated.
			Commutator to be smoothed and undercut. Rotor to be balanced.
			Carbon brushes and bearings to be renewed. Motor to be reassembled.
			A test bench run with vibration analysis to be performed,
			Damaged paint to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			Remark:
			Seawaterpump No 1 has been in service for 18.000 h, No 2 for 24.000 h.
	2553	5	4 pcs. Anti vibration and shock absorber and screws for main cooling sea water pumps (HP) to be renewed.
	2553	6	Corroded areas on the foundation of th Main seawater cooling pump to be ground down to the clean material.
			The area shall be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			After installation the foundation plates of each shock absorber to be cleaned and coated in accordance with the coating plan.

Bau Group1	Bau Group	Position	Work Description
			Rubber element to be coated 1 x with Pliobond.
	2553	7	Converter sea water cooling pumps No. 1 + 2 Ident. No: 25530300, 25530400 (REW 65-200)
			to be removed and transported to the workshop. Pumps to be reinstalled
			Pumps to be cleaned and dismantled by. Report to be submitted.
			Impeller as well as split rings and sealing's to be renewed. Remark: Pump No 1 has been in service for 25.000 h, No 2 for 25.000 h.
	2553	8	Damaged paint of the Converter sea water cooling pumps to be patch coated in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	2553	9	2 pcs. EI-motors for Converter sea water cooling pumps Typ GMS309 Ident. No: 25530301, 25530401 to be removed, cleaned and transported to the workshop.
			E-motors to be reinstalled.
	2553	10	2 pcs. EI-motors for Converter sea water cooling pumps Typ GMS309 Ident. No: 25530301, 25530401 to be dismantled.
			Report to be submitted.
			Rotor (armature windings) and stator to be washed, dried and new impregnated.
			Commutator to be smoothed and undercut. Rotor to be balanced.
			Carbon brushes and bearings to be renewed. Motor to be reassembled.
			A test bench run with vibration analysis to be performed,
			Damaged paint to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			Remark: Pump No 1 has been in service for 25.000h, No 2 for 25.000h.
	2553	11	4 pcs. Anti vibration and shock absorber for Converter sea water cooling pumps to be renewed.
	2553	12	Corroded areas on the foundation in the area of the shock absorber to be ground down to the clean material.
			The area shall be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			After installation the foundation plates of each shock absorber to be cleaned and coated in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			Rubber element to be coated 1 x with Pliobond.
2556	2556		Leonard and Static Converter 180-290 V DC
	2556	1	1 pc. Leonard converter Typ: 1FR4259+1GR5222+1FR4259 Ident No.: 25560101 to be cleaned in situ.
			Converter to be checked.
			Report to be submitted.
Anti vibration and shock absorbers	2556	2	26 pcs. shock absorber (HFSE 120/90/75) of the converter platform to be renewed.
	2556	3	Corroded areas on the foundation of the Leonard converter to be ground down to the clean material.
			The area shall be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			After installation the foundation plates of each shock absorber to be cleaned and coated in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			Rubber element to be coated 1 x with Pliobond.
	2556	4	1 pc. Static exciter converter (Traveling range 1) Type: E 10236-T8029-M001, Equipm.No.: 25560201
			to be cleaned in situ.
			Exciter converter to be checked. Report to be submitted.

Bau Group1	Bau Group	Position	Work Description
	2556	5	3 pcs. Anti vibration and shock absorber for the static converter to be renewed.
	2556	6	Corroded areas on the foundation of the static converter to be ground down to the clean material.
			The area shall be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			After installation the foundation plates of each shock absorber to be cleaned and coated in accordance with the coating plan.
			Rubber element to be coated 1 x with Pliobond.
2778	2778		Depth Measuring System
4 pcs valves of the depth measuring system. Fitting No. 2778F012,F013, F023, F024	2778	1	Hull valves and valves of the second shut-off to be removed and to be disassembled in workshop.
			Components to be cleaned and to be checked. Inspection report to be submitted.
			Sealings to be renewed.
			Valves to be reassembled and pressure tested.
			Valve sealing surfaces on the PH gland to smooth and to grind. Necked studs and nuts to be renewed.
			Reinstallation of the valves including pressure test on board to be performed.
Selected items			4 pcs valves of the depth measuring system. Fitting No. 2778F012,F013, F023, F024
Manufacturer?	2778	2	Following listed fittings to be removed cleaned and sent to the manufacturer.
			Components to be to be disassembled and checked. Report to be submitted.
			Pressure gauges to be calibrated. Sealing's to be renewed.
			Fittings to be reinstalled. 2 pcs Depth gauges. Fitting No.: 2778F104, F105
			2 pcs Depth gauge units Fitting No.: 2778F143, F144
			1 pce Buoyancy meter (Papenberg). Fitting No.: 2778F107
			3 pcs Differential pressure gauges. Fitting No.: 2778F101, F102, F127
			2 pcs Depth transmitters. Fitting No.: 2778F147,F148
	2778	3	14 pcs. Screwed bonnet type shut-off valve Fitting-No.: 2778F005, F014, F015, F016, F017, F021, F022, F026, F028, F030, F041, F044, F055 and
			1 pcs. Regulating valve Fitting-No.: 2778F027
		EC	to be replaced by Göpfert valves.
			Pipe and pipe connection to the new valve type to be renewed (max. 1m).
	2778	4	1 pc. Aerometer 2778F112 to be replaced.
	2778	5	5 pcs rubber compensators to be renewed. Fitting No. 2778F130, F131, F140, F141, F153.
	2778	6	Pipe for deep measuring system CIC (12 m) to be renewed.
	2778	7	Pressure test of the system to be performed.
2910	2910		Main Battery

Bau Group1	Bau Group	Position	Work Description
	2910	1	Examination the battery rooms for corrosion. Performance of electrostatic tests required. Report to be submitted.
2914	2914		Acid Circulation System
Check with SM	2914	1	Acid circulation compressor to be renewed. Fitting- No: 29140103, 29140104.
	2914	2	2 pcs. El-motors Typ GMS309 Ident No: 29140101, 29140202 to be removed, cleaned and transported to the workshop. E-motors to be reinstalled.
	2914	3	2 pcs. El-motors Typ GMS309 Ident No: 29140101, 29140202 to be dismantled. Report to be submitted. Rotor (armature windings) and stator to be washed, dried and new impregnated. Commutator to be smoothed and undercut. Rotor to be balanced. Carbon brushes and bearings to be renewed. Motor to be reassembled. A test bench run with vibration analysis to be performed,
			Damaged paint to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	2914	4	2 pcs Air filter to be cleaned, insert to be renewed. Fitting No. 2914H111, H112.
Anti vibration and shock absorbers	2914	5	4 pcs. Anti vibration and shock absorber for Acid circulation compressor to be renewed.
	2914	6	Corroded areas on the foundation of the Acid circulation compressor (max. 1 m ²) to be ground down to the clean material. The area shall be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016). After installation the foundation plates of each shock absorber to be cleaned and coated in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016). Rubber element to be coated 1 x with Pliobond.
	2914	7	System to be checked.
2916	2916		H2-Measuring System
	2916	1	1 pc. H2 concentration Measuring device. Fitting No: 2916H105 to be renewed.
	2916	2	The measuring device to be calibrated with test gas.
	2916	3	1 pc. Distributor Fitting No: 2916H106 leakage test to be performed.
	2916	4	8 pcs. H2 Eliminator to be renewed. Fitting-No.: 29160101-0108 Remark: the recombinators are already 8 years in operation.
	2916	EC	1 pc. Screwed bonnet shut-off valve to be replaced by a Göpfert valve. Pipe and pipe connection to the new valve type to be renewed. Fitting-No.: 2916H104.
2919	2919		Battery Cooling System
4 pcs valves of the battery cooling system Fitting No. 2919G047, G048, G049, G050	2919	1	Hull valves and valves of the second shut-off to be removed and to be disassembled in workshop. Components to be cleaned and to be checked. Inspection report to be submitted. Sealing's to be renewed.

Bau Group1	Bau Group	Position	Work Description
			Valves to be reassembled pressure tested (according to the appropriate specification).
			Valve sealing surfaces on the PH gland to smooth and to grind.
			Reinstallation of the valves including pressure test on board to be performed.
			4 pcs valves of the battery cooling system Fitting No. 2919G047, G048
			Fitting No. 2919G049, G050
	2919	2	Expansion tank for battery colling system Equipment No. 29190050 to be removed, cleaned and disassembled and to be re-certified by AIA.
			Report to be submitted.
			Diaphragm and srews to be renewed.
			Damaged paint to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			Expansion tank to be reinstalled.
	2919	3	2 pcs.Sea water cooling pumps Ident No: 29190100, 29190200 to be removed and transported to the workshop.
			Pumps to be reinstalled.
	2919	3.1	2 pcs.Sea water cooling pumps to be cleaned and disassembled. Report to be submitted.
			Impeller, split rings and sealing's ball bearings to be renewed. Report to be submitted.
			Remark: The pumps was in service for 13.000 hours.
	2919	4	Damaged paint of 2 pcs.Sea water cooling pumps to be sanded and repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, Dated 26 Aug 2013).
	2919	5	2 pcs E-motors Typ GMS309 to be removed and transported to the workshop.
			Ident No: 29190101, 29190201
			E--motors to be reinstalled.
	2919	6	2 pcs E-motors for Sea water cooling pump Typ GMS309 Ident No: 29190101, 29190201 to be dismantled.
			Report to be submitted.
			Rotor (armature windings) and stator to be washed, dried and new impregnated.
			Commutator to be smoothed and undercut. Rotor to be balanced.
			Carbon brushes and bearings to be renewed. Motor to be reassambled.
			A test bench run with vibration analysis to be performed.
			Damaged paint to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	2919	7	2 pcs. Destillate pump for battery cooling Ident. No: 29190300, 29190400 to be removed and transported to the workshop.
			Pumps be cleaned and disassembled. Report to be submitted.
			Pumps to be overhauled.
			Impeller, split rings, sealing's and ball bearings to be renewed. Pump to be reinstalled.
			Remark: The pump was in service for 27.000 hours.
	2919	8	Damaged paint to be sanded and repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	2919	9	2 pcs E-motors Typ GMS309 29190301, 29190401
			to be removed and transported to the workshop. E-motors to be reinstalled.
	2919	10	2 pcs E-motors for destillate battery cooling pump Typ GMS309 29190301, 29190401 to be dismantled.
			Report to be submitted.
			Rotor (armature windings) and stator to be washed, dried and new impregnated.
			Commutator to be smoothed and undercut. Rotor to be balanced.

Bau Group1	Bau Group	Position	Work Description
			Carbon brushes and bearings to be renewed. Motor to be reassembled.
			A test bench run with vibration analysis to be performed. Damaged paint to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			Remark: The motor was in service for 27.000 hours.
Anti vibration and shock absorbers	2919	11	4 pcs. Anti vibration and shock absorber for desillate and seawater cooling pump to be renewed.
	2919	12	Corroded areas on the desillate and seawater cooling pump foundation (max. 2 m²) to be ground down to the clean material. The area shall be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			After installation, the foundation plates of each shock absorber to be cleaned and coated in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			Rubber elements to be coated 1 x with Pliobond.
	2919	13	2 pcs. Destillate cooler end covers to be dismantled. Cooler 29190001, 29190002 to be cleaned and checked. Report to be submitted.
New cover ?			End covers to be reinstalled.
			Cover gaskets to be renewed.
	2919	14	Damaged paint of the destillate cooler to be sanded and repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 26 Aug 2013).
	2919	15	7 pcs. Ion exchanger ESP-20-MB to be renewed. Fitting-No: 29190003, 29190004, 29190005, 29190006, 29190007, 29190008, 29190009
	2919	16	20 pcs. watertight shut off flaps to be removed, overhauled and reinstalled.
			Sealing's to be renewed.
			Fitting No. 2919G001, G002, G005, G013, G014, G015, G016, G017, G018, G027, G029, G030, G032, G033, G034, G035, G038, G040, G041, G042.
	2919	17	20 pcs. rubber compensators to be renewed.
			Fitting No. 2919G228, G223, G227, G222, G226, G224, G225, G221, G219, G220, G238, G239, G240, G241, G242, G243, G249, G251, G250, G252.
	2919	18	2 pcs. Safety valves to be removed and disassembled. Sealing's, and springs to be renewed.
			Valves to be reassembled and adjusted. Valve to be installed.
			Fitting No: 2919G232, Fitting No: 2919G234.
	2919	19	2 pcs. Strainer to be cleaned, filter insert to be renewed.
			Fitting No: 29190012, Fitting No. 2919G145.
	2919	20	14 pcs. Screwed bonnet type shut-off valve Fitting-No.: 2919G006, G008, G009, G036, G037, G039, G044, G046, G051, G052, G053, G054, G055, G056
		EC	to be replaced by a Göpfert valve.
			Pipes and pipes connection to the new valve type to be renewed.
	2919	21	Pressure test of the system to be performed.
3135	3135		Transmitter-Converters 115 V 400 Hz 3-phase
Check with SM	3135	1	Transitor Converters No 4, No 5 (115 V 400 Hz, 3-phase, AC) to be checked.
			Adjustment of the control boards to be carried out.
			Report to be submitted.
	3135	2	Transitor Converters No 6 (115 V 400 Hz, 3-phase, AC) to be repaired.
			Adjustment of the control boards to be carried out.
			Report to be submitted.

Bau Group1	Bau Group	Position	Work Description
3137	3137		Transmitter-Converters 115 V 60 Hz 3-phase
check with SM	3137	1	Transistor Converters 31370101, 31370201, 31370301 (115 V 60 Hz, 3-phase, AC) to be checked.
			Adjustment of the control boards to be carried out.
			Report to be submitted.
3310	3310		Common Power Supply System for Shipboard Auxiliaries and Propulsion
	3310		Following components to be cleaned and checked in situ.
			Report to be submitted.
	3310	1	2721 Main and Generator Switchboard Type: E10236-T2025-M001, Equipm.No.: 27210101.
	3310	2	2721 Switch device battery 1+2 Type: E10236-T2015-M005, Equipm. No.: 27210301.
	3310	3	2721 Switching device battery 3+4 Type: E10236-T2015-M006, Equipm.No.: 27210401.
	3310	4	2721 Twin field setter Type: E10236-T8019-M003, Equipm.No.: 27210501.
	3310	5	2721 Step switch for twin field setter Type:E10236-T8019-M003, Equipm.No.: 27210501.
	3310	6	2722 Switch board exciter control Type: E10236-T5050 - M003; Equipm.No.: 27220101.
	3310	7	2722 Switchboard fan control Type: E10236-T5048-M003 Equipm.No.: 27220201.
	3310	8	2179 Snorkel control panel, Equipm.No.: 21790101.
	3310	9	3313 Auxiliary Switch board with speed step switch Type: E10236 T3019-T3019-M001, Equipment.No.: 33130101.
	3310	10	3313 CIC distributor Type:E10236-T5083-M002, Equipm.No.: 33130201.
	3310	11	3313 Galley distribution board Type: E10236-T5052-M003, Equipm. No.: 33130301.
	3310	12	3315 Converter control board Type: E10236-T5056, Equipm. No.: 33150101.
	3310	13	3331 Motor protection switch distillate refilling pump Type: 3RV1021-1GA1 (4,5-6,3 A), Equipm.No.: 33310101.
	3310	14	3331 Motor protection switch hydraulic filter pump Type: 3RV1021-1FA1 (3,5-5,0 A), Equipm.No.: 33310201.
	3310	15	3185 Resistance unit 220V DC Type: K 7228-61, Equipm.No.: 31850101.
	3310	16	4311 Control unit piston bilge pump 1+2 Type: E10236-T6016-M003 Equipm. No.: 43110102
	3310	17	4529 2 pcs. Switch devices domestic fresh water heater Type: E10236-T5058-M003/Version 1 and Type: E10236-T5058-M004/Version 2, Equipm.No.: 45290101, 45290202.
	3310	18	5188 Hoistable mast control panel Type: E-10236-T5085-M002, Equipm.No.: 51880101.
	3310	19	5188 Power supply for masts control Type: E10236-T5088-M002, Equipm.No.: 51880102.
3321	3321		Automatic Starter
	3321	1	2 pcs. Starters Main sea water colling pump HP Type 3PA8203-1AZ 24, Equipm.No.: 33210205, 33210212 to be checked in fitted condition. Report to be submitted.
	3321	2	2 pcs. Starters air condition compressor Type: 3PA8403-1A Z 24, Equipm.No.: 33210102. 33210103

Bau Group1	Bau Group	Position	Work Description
			to be checked in situ. Report to be submitted.
	3321	3	2 pcs. Starters sea water pump battery cooling pump Type 3PA8203-1AZ24, Equipm.No.: 33210206, 33210207
			to be checked in fitted condition. Report to be submitted.
	3321	4	2 pcs. Starters destillate battery cooling pump Type 3PA8203-1AZ24, Equipm.No.: 33210214, 33210215
			to be checked in fitted condition. Report to be submitted.
	3321	5	2 pcs. Starter Piston pump Typ 3PA8403-1A Z 24, Equipm.No.: 33210101, 33210104
			to be checked in situ. Report to be submitted.
	3321	6	1pc. Starter battery fan Type: 3PA8203-1A Z 24, Equipm.No.: 332113
			to be checked in fitted condition. Report to be submitted.
	3321	7	4 pcs. Starters hydraulic oil pumps Type: 3PA8203-1A Z 24, Equipm.No.: 33210208 - 33210211
			to be checked on board in fitted condition. Report to be submitted.
	3321	8	1 pc. Automatic starter Type: 3PA8203-1A Z 24, Equipm.No.: 33210116 freon compressor ISUS cooling system to be checked on board in fitted condition.
			Report to be submitted.
	3321	9	1pc. Starter rotating exciter converter (Leonard Converter 180- 290V) Type: 3PA8203-1A Z 24, Equipm.No.: 33210201
			to be checked. Report to be submitted.
	3321	10	2 pcs. Starters HP-compressor Type: 3PA8203-1A Z 24, Equipm.No.: 33210202, 33210203
			to be checked on board in fitted condition. Report to be submitted.
3370	3370		Shore and Charge Connection
	3370	1	Shore and charge connection to be checked. Report to be submitted.
			Isolation disk of the charging connector, contact pin and sealings to be replaced.
		And Dielectric test	Isolation discs of the Charging Connection, PWT, 2 pcs. Contact.
			bushes, 2 pcs. contact inserts and sealings to be replaced.
3494	3494		Penetration Plug and Socket Connectors
	3494	1	37 pcs. Gisma pressure hull penetrator 5 pcs. Gisma junction box 3 pcs. Gisma bulkhead penetrator 2 pcs. Honeywell junction box
		manufacturer ?	to be removed and sent to the manufacturer.
			47 pcs. hull penetrations to be reinstalled.
	3494	2	37 pcs. Gisma pressure hull penetrator 5 pcs. Gisma junction box 3 pcs. Gisma bulkhead penetrator 2 pcs. Honeywell junction box
		manufacturer ?	Components to be cleaned an inspected at the manufacturer. Inspection report to be submitted.
			Re-useable parts to be reworked and sealings to be renewed.
			Remark: As a result of the inspection several Gisma-pressure hull penetrations may have to be renewed.
	3494	3	8 pcs. Gisma Blind plugs 13 pcs. IKL plugs to be removed, cleaned and inspected. Inspection report to be submitted.
			Sealings to be renewed.
	3494	4	12 IKL cable hull penetrator to be cleaned and visual inspected. Inspection report to be submitted.
3662	3662	3662	Internal Comms Equipment (FOCON)
	3662	1	Internal communication system to be checked. Report to be submitted.
	3662	2	FOCON comms CIC Speaker to be renewed.

Bau Group1	Bau Group	Position	Work Description
			Remarks: FOCON comms CIC Speaker is defect.
	3662	3	Insulation measurement of each cable
			Report to be submitted.
4120	4120	4120	Hydroplanes and Steering Rudder
possible inspection	4120	1	Rudder blades incl. rudder shafts and drive linkages incl. socket joints for hydroplanes fore and aft as well as rudder to be removed, disassembled and cleaned.
			Friction surfaces on the shafts to be checked and measurements to be performed.
			Protocol to be submitted.
			Anode protections (supplied by Client) and sealing's to be renewed.
			Parts to be reassembled and to be reinstalled.
possible inspection	4120	2	Bearings forward Hydroplane Stb. and PS to be renewed. 2 pcs. KSC 175300V-2
			1 pc. KSC 175300V-1
			1 pc. KSC 175300V-3
	4120	3	Forward and aft Hydraulic cylinders (4 pcs.) to be removed and dismantled.
			Components to be cleaned and checked. Report to be submitted.
			Sealing's and piston ring to be renewed.
			Hydraulic cylinders to be reassembled and reinstalled on board. Damaged paint to be sanded and repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
possible inspection	4120	4	Linkage joint bearings for
			Hydroplane forward Stb 2 pcs. KSC 186400V-2 (256238) Hydroplane forward PS 2 pcs. KSC 186400V-2 (256238) Side ruder and 2 pcs. KSC 186400V-1 (254474)
			Hydroplane aft 2 pcs. KSC 186400V-1 (254474) to be renewed.
	4120	5	4 pcs. PH- penetrations for Hydroplane and Rudder to be cleaned and checked.
			Report to be submitted.
			Sealing's of the PH-penetration to be renewed.
	4120	6	Central greasing system of the rudder and hydroplane to be cleaned.
			System to be checked. Report to be submitted.
			System to be refilled and checked.
4174	4174		Hydraulic Control of Rudder and Planes
manufacturer?	4174	1	Emergency Control for Steering Rudders & Hydroplanes. Hand pump X078 to be removed, cleaned and sent to the manufacturer.
			Hand pump to be reinstalled
	4174	2	Emergency Control for Steering Rudders & Hydroplanes. Hand pump X078 to be assambled and cleaned at the manufacturer.
			Sealings to be renewed.
			Report to be submitted.
	4174	3	10 pcs. Compensators of rudder steering to be renewed.
			Fitting No: 41741063, 1064, 1065, 1066, 1067, 1068, 1069, 1070, 1071, 1072.
	4174	4	5 pcs. High-pressure filter to be cleaned. Inserts to be renewed.
			Filter No.: X593, X584, X601, X603, X608.
4192	4192		Anchor Equipment

Bau Group1	Bau Group	Position	Work Description
2 pcs. valve of the rudder central grease	4192	1	Hull valves and valves of the second shut-off to be removed and to be disassembled in workshop.
			Components to be cleaned and to be checked. Inspection report to be submitted.
			Sealing's to be renewed.
			Valves to be reassembled pressure tested (according to the appropriate specification).
			Valve sealing surfaces on the PH gland to smooth and to grind. Necked studs and screws to be renewed.
			Reinstallation of the valves including pressure test on board to be performed.
			2 pcs. valve of the rudder central grease system.
			Fitting No. 4192W001, W002.
	4192	2	Anchor to be disassembled. Components to be cleaned and checked. Report to be submitted.
			Anchor chain to roll off.
			Chain link measurement to be verified.
			Chain to be reeled up the anchor to be stowed.
	4192	3	Anchor and chain to be sandblast and painted in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	4192	4	Anchor winch to be removed, disassembled, cleaned and checked. Report to be submitted.
			Bearings and bracke linnings to be renewed. Anchor claw clutch to be overhauled.
	4192	5	Anchor winch casing and to be grit blasted and painted in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	4192	6	Windlass, hydraulic motor, gearing, capstan head, guide rollers, drive- and brake linkage, anchor release device and chain securing to be removed and to disassemble.
			Components to be cleaned and to checked. Report to be submitted.
			Maintenance to be carried out.
			Bearings, bolts and sealings to be renewed.
			All parts to be reassembled, mounted and to be reinstalled on board.
4228	4228		Hydraulic System Escape Trunk
8 pcs. valves of the hydr. system escape trunk. Fitting No. 4228X201, X202, X 250, X 251, X252, X 253, X254, X255	4228	1	Hull valves and valves of the second shut-off to be removed and to be disassembled in workshop.
			Components to be cleaned and to be checked. Inspection report to be submitted.
			Sealing's to be renewed.
			Valves to be reassembled pressure tested (according to the appropriate specification).
			Valve sealing surfaces on the PH gland to smooth and to grind. Necked studs and screws to be renewed.
			Reinstallation of the valves including pressure test on board to be performed.
			8 pcs. valves of the hydr. system escape trunk.
			Fitting No. 4228X201, X202, X250, X251, X252, X253, X254, X255
	4228	2	3 pcs. valves to be overhauled sealings to be renewed.
			Fitting No. 4228X263, X264, X265

Bau Group1	Bau Group	Position	Work Description
	4228	3	3 pcs. rotary piston cylinder 4228X108, X662, X663 to be inspected. System to be checked. Report to be submitted.
	4228	4	Hydraulic oil accumulator Fitting No.: 4228X658 to be renewed. Hydraulic oil accumulator to be painted in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
4261	4261		Towing Hook
Renew rope	4261	1	Towing Hook to be cleaned and inspected. Inspection report to be submitted
	4261	2	Function test to be performed by the crew
4311	4311		Piston Bilge Pump 1 and 2
	4311	1	Piston Pump HH 140K No 1 and 2 Ident. No: 43110100, 43110200 to be checked by manufacturer specialist. Report to be submitted.
			All wearing parts incl. internal zinc anodes after an operating time of 3500 hours to be renewed.
	4311	2	1pc. Piston rod Piston Pump No 1 to be renewed. All sealings and wearing parts to be renewed. Report to be submitted.
	4311	3	2 pcs. E-motors GMS835 Ident. No. 43110101, 43110201 of the bilge pumps to be removed and transported to the workshop. E-motors to be reinstalled.
	4311	4	2 pcs. E-motors GMS835 Ident. No. 43110101, 43110201 of the bilge pumps to be dismantled. Report to be submitted
			Rotor (armature windings) and stator to be washed, dried and new impregnated.
			Commutator to be smoothed and undercut. Rotor to be balanced.
			Carbon brushes and bearings to be renewed. Motor to be reassembled.
			A test bench run with vibration analysis to be performed.
			Damaged paint to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
Anti vibration and shock absorbers	4311	5	Anti vibration and shock absorber (18 pcs.) piston pump to be renewed.
	4311	6	Corroded areas on the piston pump foundations to be ground down to the clean material. The area shall be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			After installation the foundation plates of each shock absorber to be cleaned and coated in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016). Rubber element to be coated 1 x with Pliobond.
4315	4315		Bilge Water Deoiler
	4315	1	Bilge water deoiler HDWO 25 A1 Ident. No.: 43150100 and Deoiler pump 43150110 to be inspected and overhauled on board. All wearing parts after an operating time of 4500 hours to be renewed. Report to be submitted.
	4315	2	3 pcs. Screwed bonnet type shut-off valve Fitting-No.: 4315I450, I465, I470
			3 pcs. Screwed bonnet non-return valve Fitting-No.: 4315I451, I464, I472

Bau Group1	Bau Group	Position	Work Description
			1 pcs. Three-way cock Fitting-No.: 4315I460 & I463
		EC	to be replaced by a Göpfert valve .
			Pipes and pipes connection to the new valve type to be renewed (max. 1m).
	4315	3	11 pcs. compensators to be renewed.
			4315 / I513, I514, I515, I516, I517, I518, I519, I520, I521, I524, I525
4318	4318		Main Line System
9 pcs. valves of the main line system. Fitting No. 4318I018, I019, I021, I022, I038, I051, I061, I062, I089	4318	1	Hull valves and valves of the second shut-off to be removed and to be disassembled in workshop.
			Components to be cleaned and to be checked. Inspection report to be submitted.
			Sealings and balls (I019+I022) to be renewed.
			Valves to be reassembled pressure tested (according to the appropriate specification).
			Valve sealing surfaces on the PH gland to smooth and to grind.
			Reinstallation of the valves including pressure test on board to be performed.
			9 pcs. valves of the main line system. Fitting No. 4318I018, I021, I061, I062, I089
			4318I019, I022,
			4318I038, I051
	4318	2	2 pcs. Safety valves to be removed and disassembled. Sealing's, and springs to be renewed.
			Valves to be reassembled and adjusted. Valve to be reinstalled.
			Fitting No: 4318I221 , I225
	4318	3	14 pcs. watertight shut off flaps to be removed,overhauled and reinstalled. Sealing's to be renewed.
			Fitting No. 4318I005, I006, I007, I009, I010, I011, I020, I024, I050, I058, I068, I096, I097, I098.
	4318	4	4 pcs. Non return flaps to be removed,overhauled and reinstalled. Sealing's to be renewed.
			Fitting No. 4318I014, I023, I090, I101.
	4318	5	4 pcs. Strainer to be cleaned,sealings too be renewed.
			Fitting No. 4318I218, I252, I257, I271.
Manufacturer?	4318	6	Flow meter 4318 I264 to be removed and sent to the manufacturer.
			Flowmeter to be disassembled, cleaned and checked. Report to be submitted.
			Gaskets to be renewed.
			Flowmeter to be calibrated and reinstalled.
	4318	7	7 pcs. rubber compensators to be renewed.
			Fitting No.4318I201, I203, I202, I210, I232, I244, I277.
	4318	8	3 pcs. Screwed bonnet typeshut-off valve Fitting-No.: 4318I004, I012, I069
			3 pcs. Straight-way cock
			Fitting-No.: 4318I001, I002, I003
		EC	to be replaced by Göpfert valves .
			Pipes and pipes connection to the new valve type to be renewed (max. 1m).
	4318	9	1 pc.remote actuated regulating valve fitting no.: 4318/ I032,
			2 pcs. ORC -Angle Valve fiutting no.: 4318/ I036, I037 2 pc. hydraulic actuated valve fitting No.: 4318/ I17, I27 to be removed, cleaned and sent to the manufacturer. Valves to be reinstalled.

Bau Group1	Bau Group	Position	Work Description
	4318	10	1 pc. remote actuated regulating valve fitting no.: 4318/ I032, 2 pcs. ORC-Angle Valve fitting no.: 4318/ 036,I037 2 pc. hydraulic actuated valve fitting No.: 4318/ I17, I27 to be disassembled, cleaned and inspected. Inspection report to be submitted. Valves to be overhauled and pressure tested. Sealings, piston rings and approximation initiator to be renewed.
	4318	11	System pressure test to be performed. Report to be submitted.
4338	4338		Compensating System
10 pcs. valves of the compensating system. Fitting No. 4338I039, I040,I042, I043,I053,I064,I065,I084, I085, I086	4338	1	Hull valves and valves of the second shut-off to be removed and to be disassembled in workshop. Components to be cleaned and to be checked. Inspection report to be submitted. Sealing's to be renewed. Valves to be reassembled pressure tested (according to the appropriate specification). Valve sealing surfaces on the PH gland to smooth and to grind. Necked studs and nuts to be renewed. Reinstallation of the valves including pressure test on board to be performed. 10 pcs. valves of the compensating system. Fitting No. 4338I042, I043, I053, I084, I085, 4338I039, I040, I064, I065, I086.
	4338	2	12 pcs. Safety valves to be removed and disassembled. Sealing's, and springs to be renewed. Valves to be reassembled and adjusted. Valve to be reinstalled. Fitting No. 4338I134, I135, I136, I137, I138, I139, I140, I141, I142, I143, I144, I145.
	4338	3	4 pcs.Hydraulic actuated angle control valves Fitting No: 4338/ I028, I033, I034, I035 to be removed, overhauled and reinstalled. Sealings to be renewed. Remarks: The hand activated rods are leaking.
	4338	4	5 pcs. Watertight shut off flaps to be removed, overhauled and reinstalled. Sealing's to be renewed. Fitting No. 4338/ I044, I045, I066, I067, I095
	4338	5	3 pcs.Hydraulic actuated control valves fitting no.: 4338/ I29, I30, I31, I041 to be disassembled, cleaned and inspected. Inspection report to be submitted. Valves to be overhauled and pressure tested. Sealings to be renewed.
	4338	6	Flooding valve 4338 I345 to be removed disassembled, cleaned and checked. Report to be submitted. Valve to be overhauled and pressure tested. Sealings to be renewed.
	4338	7	Flow meter 4338 I102 to be removed and sent to the manufacturer. Fowmeter to be reinstalled.
	4338	9.1	Flow meter 4338 I102 to be removed and sent to the manufacturer.

Bau Group1	Bau Group	Position	Work Description
			Flowmeter to be disassembled, cleaned and checked. Report to be submitted.
			Gaskets to be renewed.
			Flowmeter to be calibrated.
	4338	10	Flow meter 4338 I102 to be renewed (spare part).
	4338	11	System pressure test to be performed.
			Report to be submitted.
4350	4350		Main Ballast Tank Ventilation
	4350	1	5 pcs Flaps and linkages for the main ballast tank ventilations to be removed, cleaned and checked.
			Report to be submitted.
	4350	2	Bushes and sealings's to be renewed, Flaps to be reinstalled.
			5 Hydraulic Drive for Main Ballast Tank Ventilation 4351 X 416, X 417,X767, X768, X769
			to be removed, cleaned and checked. Report to be submitted.
			5 pcs. Hydraulic motor OMSW80-151F0521,
			5 pcs. approximation initiator IFL10-30L-10STP-2092,
			5 pcs lubricating nipple and sealings pressure hull penetration to be renewed.
4363	4363		Hydraulic Oil Station
	4363	1	3 pcs. Hydraulic blocks to be removed,
		manufacturer ?	Block 4363X978: 7pcs. Hydraulic valves 4363X132 - X138 Block 4363X976: 7pcs. Hydraulic valves 4363X125 - X131 Block 4363X974 6pcs. Hydraulic valves 4363X154 - X159 to be removed, cleaned and sent to the manufacturer Regulating valve to be reinstalled.
			Remarks: The hand activated rods are leaking.
	4363	2	3 pcs. Hydraulic blocks to be disassambled, cleaned and checked at the manufacturer.
			Report to be submitted.
			Hydraulic blocks to be overhauled, sealings and wear parts to be renewed.
			Block 4363X978: 7pcs. Hydraulic valves 4363X132 - X138 Block 4363X976: 7pcs. Hydraulic valves 4363X125 - X131 Block 4363X974 6pcs. Hydraulic valves 4363X154 - X159
			Remarks: The hand activated rods are leaking.
4368	4368		Trim System
	4368	1	2pcs. Air distributor to be overhauled sealing's to be renewed.
			Fitting No. 4368K003, K005.
	4368	2	2 pcs. Watertight shut off flaps to be removed,overhauled and reinstalled. Sealing's to be renewed.
			Fitting No. 4368K006, K007.
manufacturer? Replace	4368	3	Flow meter 4368K101, K102 to be removed, cleaned and sent to the manufacturer.
			Flow meter to be reinstalled.
manufacturer? Replace	4368	4	Flowmeter to be disassembled, cleaned and checked at the manufacturer.
			Report to be submitted. Gaskets to be renewed. Flowmeter to be calibrated.

Bau Group1	Bau Group	Position	Work Description
	4368	5	System pressure test to be performed. Report to be submitted.
4410	4410		CO2 Fire Extinguishing System for Diesels
	4410	1	The fire extinguishing cabinet in CIC to be removed, cleaned and transported to the workshop. Cabinet to be reinstalled. Damaged paint to be sanded and repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	4410	2	The fire extinguishing cabinet to be checked. Report to be submitted. Cabinet to be reinstalled. 6 pcs. shock mounts to be renewed. Funktion test of the fire extinguishing system by specialist. Report to be submitted.
4416	4416		CO2 Pressure Vessel for Fire Extinguishing System
	4416	1	2 pcs. Cylinder (CO2; 67,5 l; Type 03-1675-03) Fitting no: 44160200, 44160300 to be removed and transported to the workshop. CO2 Cylinders to be transported on board and reinstalled.
	4416	2	2 pcs. CO2 cylinders fitting no: 44160200, 44160300 to be disassembled in workshop. Hydraulic pressure test to be performed. Cylinder to be cleaned, rinsed and dried. Wall thickness measurements to be carried out. Inspection to be performed by an AIA certified Institution (Client to supply specification). Report to be submitted. 2 pcs. cylinder valves and sealings to be renewed. Cylinders to be reassembled.
	4416	3	2 pcs. CO2 cylinders to be grit blasted in- and outside. Outer paint coating to be applied in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	4416	4	11 pcs. Flexible hose to be renewed. Fitting-No.: 4416P571, P574, P575, P576, P577, P580, P584, P585, P586, P587, P59
4522	4522		Fresh Water Generator 2310
obscelesence?	4522	1	Fresh Water Generator to be inspected by the manufacturer after docking. Protocol to be submitted. Membrane and pressure gauges to be renewed. Remarks: Motor control valve not working properly. All conections to the pressure gauges and to the module are leaking.
4524	4528		Fresh Water Flow Heater
	4528	1	Domestic Freshwater Heater 4528L119, 4528L120 the sanitary rooms to be renewed.
4528	4528		Domestic Freshwater System
	4528	1	2 pcs. rubber compensators to be renewed. Inspection report to be submitted. Fitting No. 4528L107, L108
	4528	2	7 pcs. Safety valves to be removed and disassembled. Sealing's, and springs to be renewed. Valves to be reassembled and adjusted. Valve to be reinstalled. Fitting No. 4528L189 Fitting No: 4528L144, L145, L186, L187 Fitting No: 4528L194, L195
	4528	3	1 pc. Filter to be cleaned. Sealings to be renewed.

Bau Group1	Bau Group	Position	Work Description
			Fitting No. 4528L122
OBsceleence?	4528	4	Domestic Freshwater Heater
			4528L119, 4528L120 the sanitary rooms to be renewed.
	4528	5	Domestic Freshwater boiler in the galley to be renewed.
	4528	6	17 pcs. Screwed bonnet type shut-off valve
			Fitting-No.: 4528L003, L004, L006, L015, L021, L025, L050, L051, L052, L053, L054, L055, L059, L060, L064, L065, L081
			2 pcs. Screwed bonnet non-return valve Fitting-No.: 4528L019, L020
		EC	to be replaced by a Göpfert valves.
			Pipes and pipes connection to the new valve type to be renewed.
	4528	7	2 pcs. Ionenfilter ESP-30-MB for osmosis plant to be renewed.
			Fitting-No: 4528L111, 4528L112.
	4528	8	System pressure test to be performed.
			Report to be submitted.
4548	4548		Seawater Wash System
	4548	1	Safety valve to be removed and disassembled. Sealing's, and springs to be renewed.
			Valve to be reassembled and adjusted. Valve to be reinstalled.
			Fitting No. 4548M101
	4548	2	Pressure reducer 40 to 2,5 bar to be removed, overhauled, tested and reinstalled.
			Sealings to be renewed.
			Fitting No. 4548M100
	4548	3	Mud Guard to be removed, overhauled and reinstalled. Sealings to be renewed.
			Fitting No.4548 M104
	4548	4	Spraying device to be renewed.
			Fitting No. 4548M005, M016
	4548	5	System pressure test to be performed.
			Report to be submitted.
4558	4558		Sewage and Wastewater System
4 valves of the sewage and waste water system. Fitting No.4558N008,N009,N010,N011	4558	1	Hull valves and valves of the second shut-off
			to be removed and to be disassembled in workshop. Components to be cleaned and to be checked.
			Inspection report to be submitted. Sealing's to be renewed.
			Valves to be reassembled pressure tested (according to the appropriate specification).
			Valve sealing surfaces on the PH gland to smooth and to grind. Necked studs and nuts to be renewed.
			Reinstallation of the valves including pressure test on board to be performed.
			4 valves of the sewage and waste water system.
			Fitting No.4558N008, N009, N010, N011
	4558	2	3 pcs.Filters to be cleaned.
			Fiiting No: 4558N135 Active charcoal to be renewed. Fitting No. 4558N136, N137 sealings to be renewed.
	4558	3	System pressure test to be performed.
			Report to be submitted.
	4558	4	Garbage ejector incl. drive mechanism to be disassembled, cleaned, overhauled and assembled.

Bau Group1	Bau Group	Position	Work Description
			Sealings to be renewed. Pressure test to be performed. Report to be submitted.
			Damaged paint to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	4558	5	Valves of the systems to be removed, overhauled and reinstalled.
			Sealings to be renewed.
			Fitting No. 4558N018
			Fitting No. 4558N020, N021 Fitting No. 4558N029
	4558	6	System of the garbage ejector to be checked.
			Report to be submitted.
EC	4558	7	2 pcs. Toilet bowls to be removed, cleaned, disassembled. WC flushing and closing devices (365/1753-01-00-00 Pos. 1) to be renewed and reinstalled.
			Sealings and wearing parts to be renewed.
			Report to be submitted
	4558	8	1 pc. Ball Cock to be removed, cleaned, disassembled, overhauled, pressure tested and reinstalled.
			Sealings and balls to be renewed. Report to be submitted.
			Fitting No: 4558N005.
	4558	9	Safety valve to be removed and disassembled. Sealing's, and springs to be renewed.
			Valve to be reassembled and adjusted. Valve to be reinstalled.
			Fitting No. 4558N025.
4578	4578		Oxygen System
1 pc. valve of the oxygen system. Fitting No. 4578Q072	4578	1	Hull valves and valves of the second shut-off to be removed and to be disassembled in workshop. Components to be cleaned and to be checked.
EC			
			Inspection report to be submitted. Sealings to be renewed.
			Valves to be reassembled pressure tested (according to the appropriate specification).
			Valve sealing surfaces on the PH gland to smooth and to grind. Necked studs and nuts to be renewed.
			Reinstallation of the valves including pressure test on board to be performed.
			1 pc. valve of the oxygen system.
			Fitting No. 4578Q072
	4578	2	22 pcs. Oxygen cylinders to be removed, transported to workshop, Oxygen Cylinders to be transported on board and reinstalled.
	4578	3	22 pcs. Oxygen cylinders Q900-Q921 disassembled in workshop. 44 pcs foundation caps to be dismantled.
			Connecting piece and drain pipe to be dismantled, seal rings to be renewed with all accessories.
			Hydraulic pressure test to be performed. Cylinder to be cleaned, rinsed and dried.
			Wall thickness measurements to be carried out.
			Inspection to be performed by an AIA certified institution (Client to supply specification).
			Report to be submitted.
			42 pcs. foundation caps to be maintained.
			2 pcs. foundation caps to be maintained with a pourable two component epoxy paste (EPOCAST).
			21 pcs. cylinder valves to be renewed. Fitting No. 4578Q051 to Q071 Cylinders to be reassembled.
			EPOCAST will be supplied by ADS.

Bau Group1	Bau Group	Position	Work Description
	4578	4	22 pcs. Oxygen cylinders (in- and outside), 44 pcs fundation caps and 88 pcs. connecting rods to be grit blasted. Parts to be painted in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	4578	5	1 pc. Pressure reducer to be renewed. Fitting No. 4578Q040
	4578	6	3 pcs Pressure gauge unit to be removed and reinstalled. Fitting-No.: 4578Q041, Q042, Q073
	4578	7	3 pcs Pressure gauge unit to be maintained and adjusted. Fitting-No.: 4578Q041, Q042, Q073 Inserts to be renewed.
	4578	8	7 pcs valves of the Oxygen to be removed, renewed and reinstalled. Fitting No. 4578Q043 to Q048 and Q075
	4578	9	2 pcs. Oxygen driers to be removed and sent to the manufacturer. Fitting No. 4578Q172, Q173
			2 pcs. Oxygen driers to be reinstalled.
	4578	9	2 pcs. Oxygen driers to be disassembled and parts to be cleaned. Inserts to be renewed. Fitting No. 4578Q172, Q173
	4578	10	Pressure test of the system to be carried out. Report to be submitted.
	4578	11	Oxygen system to be refilled (booster pump and Oxygen supplied by ARMSCOR).
4610	4610		Battery Room and Boat Fan
	4610	1	Boat fan 46130102 to be cleaned and checked. Report to be submitted. Remark: The fan was in service for 8500 hrs.
	4610	2	Damaged paint to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	4610	3	1 pcs. El-motors Typ GMS413 to be removed, cleaned and transported to the workshop. E-motors to be reinstalled.
	4610	4	1 pcs. boat fan El-motor Typ GMS413 to be dismantled. Report to be submitted. Rotor (armature windings) and stator to be washed, dried and new impregnated. Commutator to be smoothed and undercut. Rotor to be balanced. Carbon brushes and bearings to be renewed. Motor to be reassambled.
			A test bench run with vibration analysis to be performed. Damaged paint to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	4610	5	Battery room fan 46130101 to be checked. Report to be submitted.
FUSES Obscelese	4610	5.1	Damaged paint at the battery room fan to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	4610	6	1 pcs. El-motors Typ GMS413 to be removed, cleaned and transported to the workshop. E-motors to be reinstalled.
	4610	7	1 pcs. battery fan El-motors Typ GMS413 to be dismantled. Report to be submitted. Rotor (armature windings) and stator to be washed, dried and new impregnated. Commutator to be smoothed and undercut. Rotor to be balanced.

Bau Group1	Bau Group	Position	Work Description
			Carbon brushes and bearings to be renewed. Motor to be reassembled.
			A test bench run with vibration analysis to be performed. Damaged paint to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
Anti vibration and shock absorbers	4610	8	8 pcs. Anti vibration and shock absorber battery and boat fan to be renewed.
	4610	9	Corroded areas on the boats and battery fan foundation to be ground down to the clean material.
			The area shall be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			After installation the foundation plates of each shock absorber to be cleaned and coated in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			Rubber element to be coated 1 x with Pliobond.
4628	4628		Ventilation System
	4628	1	25 pcs. Rubber compensators to be renewed Fitting No. 4628P104, P100, P101, P102, P106, P114, P130, P132, P133, P105, P107, P111, P134, P135, P112, P113, P202, P131, P108, P115, P103, P142, P143, P144, P145
	4628	2	6 pcs. Trottle Flap to be removed, renewed and reinstalled. Fitting No. 4628P016,P017,P018,P019,P020,P021.
	4628	3	Damaged paint of 6 pcs. Trottle Flap to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	4628	4	Vapour Vent 4628P127 grease separat. plate to be renewed.
	4628	5	System to be checked. Report to be submitted.
4671	4671		Air Conditioning System
	4671	1	2 pcs. Air condition compressor NKS 15C (OSK 7441K) Unit No. R215, R216 to be removed and transported to the workshop.
manufacturer?		1.1	2 pcs. Air condition compressor to be reinstalled. 2 pcs. Air condition compressor NKS 15C (OSK 7441K) to be cleaned, disassembled and checked by the manufacturer. Report to be submitted. Sealings and normal ware parts to be renewed.
			Remark: the compressor was in service for 7500 hrs.
		1.2	2 pcs. air condition compressor to be painted in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	4671	2	2 pcs. El-motors Typ GX120 for air condition compressor and sea water cooling pumps Ident. No: 46710103, 46710104 to be removed and sent to the manufacturer.
			E-motors to be reinstalled.
	4671	3	2 pcs. El-motors Typ GX120 for air condition compressor and sea water cooling pumps Ident. No: 46710103, 46710104 to be dismantled by specialist.
			Report to be submitted.
			Rotor (armature windings) and stator to be washed, dried and new impregnated.
			Commutator to be smoothed and undercut. Rotor to be balanced.
			Carbon brushes and bearings to be renewed. Motor to be reassembled.
			A test bench run with vibration analysis to be performed.
		3.1	Damaged paint to be repaired in accordance with SA Navy

Bau Group1	Bau Group	Position	Work Description
			Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	4671	4	8 pcs. Anti vibration and shock absorber of the air compressors to be renewed.
	4671	5	Corroded areas on the foundation of the air condition compressors to be ground down to the clean material.
			The area shall be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			After installation the foundation plates of each shock absorber to be cleaned and coated in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			Rubber element to be coated 1 x with Pliobond.
	4671	6	1 pc. Switch and Regulating Cabinet to be checked.
			Report to be submitted.
	4671	7	2 pcs. Condensers 4671R211, R212 including Safety devices, shut-off valves, safety valves and inspection glasses to be removed and transported to the workshop.
			Condenser covers to be dismantled.
			Colling pipes to be cleaned by pipe brush, condenser to be inspected.
			Report to be submitted. Sealings to be renewed.
			Condenser to be cleaned and painted in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			Condenser to be assembled, pressure test to be performed. Condensers 4671R211, R212 including Safety devices, shut-off valves, safety valves and inspection glasses to be reinstalled.
	4671	8	Pipes, inspection glasses, filter, oil separators and fittings to be checked.
			Report to be submitted.
	4671	9	Air condition unit K1 (46710201) to be cleaned and checked. Ventilation Fan Motor to be overhauled.
			Motor 46710202 to be cleaned, bearings to be renewed. Damaged paint to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			Report to be submitted.
			Remark: The fan motor was in service for 55000 hours.
	4671	10	Air condition unit K2 (46710301) to be cleaned and checked. Ventilation Fan Motor to be overhauled
			Motor to be cleaned, bearings to be renewed.
			Damaged paint to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			Report to be submitted.
			Remark: The fan motor was in service for 55000 hours.
	4671	11	Air condition unit K3 (46710402) to be cleaned and checked. Ventilation Fan Motor to be overhauled
			Motor to be cleaned, bearings to be renewed.
			Damaged paint to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			Report to be submitted.
			Remark: The fan motor was in service for 55000 hrs.
	4671	12	Air condition unit K4 (46710501) to be cleaned and checked. Ventilation Fan Motor to be overhauled.
			Motor to be cleaned, bearings to be renewed.
			Damaged paint to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			Report to be submitted.
			Remark: The fan motor was in service for 55000 hours.

Bau Group1	Bau Group	Position	Work Description
	4671	13	Air condition unit K5 (46710601) to be cleaned and checked. Ventilation Fan Motor to be overhauled. Motor to be cleaned, bearings to be renewed. Damaged paint to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016). Report to be submitted. Remark: The fan motor was in service for 55000 hours.
	4671	14	20 pcs. Anti vibration and shock absorber air condition sets. K1, K2, K3, K4. K5 to be renewed.
	4671	15	Corroded areas on the cooling unit K1,K2, K3, K4, K5 to be ground down to the clean material. The area shall be patch coated in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016). After installation of the new shock absorber the foundation plates of each shock absorber to be cleaned and painted in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01- 00-00, Doc Issue: 2F, dated 3 Nov 2016). Rubber elements to be coated with 1x Pliobond.
	4671	16	Galley exhaustor 46710701 casing to be opened, cleaned (free of grease) and checked. Report to be submitted. Gaskets, 64 pcs. filter cartridge fitting no. 4628P126, P128 and 1 pc. compensator P131 to the galley fan to be renewed.
	4671	17	1pc. Galley fan 46710702 to be removed and transported to the workshop. Galley fan to be reinstalled.
	4671	18	1pc. Galley fan 46710702 to be dismantled, cleaned (free of grease) and checked. Sealings, bearings and V belt to be renewed.
	4671	19	1 pc E-motor 46710704 for the galley fan to be dismantled. Report to be submitted. Rotor (armature windings) and stator to be washed, dried and new impregnated. Rotor to be balanced. Bearings to be renewed. Motor to be reassembled. A test bench run with vibration analysis to be performed.
	4671	20	4 pcs. Anti vibration and shock absorber galley fan to be renewed.
	4671	21	Corroded areas on the foundation of the galley fan in the area of the shock absorber to be ground down to the clean material. The area shall be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016). After installation the foundation plates of each shock absorber to be cleaned and coated in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016). Rubber element to be coated 1 x with Pliobond.
	4671	22	Pipe lagging to be checked. Inspection report to be submitted.
	4671	23	Freon pipe system incl. condenser to rinse and to pressure test in fitted condition for inspection. After checking the pipe leak detection. Vacuum test to perform.
	4671	24	The system to refill with the safety cooling agent R 134 A. Connecting cables to check by insulation measurements. Report to be submitted.
4672	4672		Air Condition Cooling System
	4672	1	Air condition sea water cooling pumps No. 1 + 2 Ident. No: 4672R219, R220 (REW 65-200)

Bau Group1	Bau Group	Position	Work Description
			to be removed and transported to the workshop. Pumps to be reinstalled.
			Pumps to be cleaned and disassembled. Report to be submitted.
			Impeller as well as split rings and sealing's to be renewed. Damaged paint to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	4672	2	Freon compensator tightness testing under working pressure with Freon leak detector at 36 pcs. metal compensators to be performed.
			Fitting No. 4672 R171, R172, R173, R174, R175, R176, R177, R178, R179, R180, R181, R182, R183, R184, R185, R186, R187, R188, R189, R190, R193, R194, R195, R196, R197, R198, R199, R200, R201, R202, R203, R204, R205, R206, R235, R236
			Report to be submitted.
	4672	3	2 pcs. Non-return valve Fitting-No.: 4672R012, R013
		EC	to be replaced by Göpfert valves.
			Pipes and pipes connection to the new valve type to be renewed (max. 1m).
4676	4676		Built in Breathing Air System
5 pcs. valves of the breathing air system. Fitting No.4676Q029,Q083,Q084,Q085,Q086	4676	1	Hull valves and valves of the second shut-off
			to be removed and to be disassembled in workshop. Components to be cleaned and to be checked.
			Inspection report to be submitted. Sealing's to be renewed.
			Valves to be reassembled pressure tested (according to the appropriate specification).
			Valve sealing surfaces on the PH gland to smooth and to grind. Necked studs and nuts to be renewed.
			Reinstallation of the valves including pressure test on board to be performed.
			4 pcs. valves of the breathing air system. Fitting No.4676Q083, Q084, Q085, Q086
	4676	2	1 pc. valves of the breathing air system. Fitting No. 4676Q029 to be replaced.
	4676	3	4 pcs. Breathing Air Cylinders Q500, Q600, Q700, Q800 to be disassembled.
			8 pcs foundation caps to be dismounted.
			Connecting piece and drain pipe to be dismantled, seal rings to be renewed with all accessories.
			Hydraulic pressure test to be performed. Cylinder to be cleaned, rinsed and dried.
			Wall thickness measurements to be carried out.
			Inspection to be performed by an AIA certified Institution (Client to supply specification).
			Report to be submitted.
			8 pcs. foundation caps to be maintained with a pourable two component epoxy paste (EPOCAST).
			After the installation of the breathing air cylinder the system pipes to be connected.
			Sealings to be renewed.
	4676	4	4 pcs. Breathing Air Cylinders Q500, Q600, Q700, Q800 (in- and outside), 8 pcs foundation caps and 16 pcs. connecting rods to be grit blasted.
			Parts to be painted in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).

Bau Group1	Bau Group	Position	Work Description
	4676	5	3 pcs. Breathing air (original breathing gas) cylinder Fitting No.: Q100, Q300, Q400 and 1 pc. Breathing air cylinder Fitting No.: Q200 to be opened on area. Connecting piece and drain pipe to be dismantled, seal rings to be renewed with all accessories. Hydraulic pressure test to be performed. Cylinder to be cleaned, rinsed and dried. Wall thickness measurements to be carried out.
			Inspection to be performed by an AIA certified Institution.(Client to supply specification) Report to be submitted.
	4676	6	4 pcs. Breathing air (in- and outside), 6 pcs. foundation caps and 12 pcs. connecting rods to be grit blasted. Parts to be painted in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	4676	7	5 pcs. Pressure reducer, pressure controller and H.I.S. controller Fitting No. 4676Q094, Q125, Q119, Q120, Q127 to be removed and transported to the workshop. Pressure reducer, pressure controller and H.I.S. controller to be reinstalled.
	4676	7.01	Pressure reducer, pressure controller and H.I.S controller to be transported to the manufacturer. Parts to be disassembled. Inspection report to be submitted. Sealing's and wearing parts to be renewed.
	4676	8	Fitting No. 4676Q094, Q125, Q119, Q120, Q127 22 pcs. Valves to be removed, overhauled and reinstalled. Sealings to be renewed. Fitting No. 4676Q001, Q002, Q003, Q004, Q005, Q007, Q008, Q015, Q016, Q030, Q031, Q034, Q036, Q081, Q082, Q087, Q089, Q091, Q093, Q156 Fitting No. 4676Q006 and Q157 to be replaced.
	4676	9	4 pcs. Safety Valves to be removed and disassembled. Sealing's, and springs to be renewed. Valves to be reassembled and adjusted. Valve to be reinstalled.
	4676	10	Fitting No. 4676Q032, Q033, Q088, Q092 5 pcs. Pressure Gauge Units to be removed and reinstalled. Fitting No. 4676Q101, Q104, Q105, Q106, Q121
	4676	11	5 pcs. Pressure Gauge Units to be overhauled and adjusted. Fitting No. 4676Q101, Q104, Q105, Q106, Q121
	4676	12	3 pcs. Filter to be opened, cleaned. Sealings to be renewed. Fitting No. 4676Q123, Q124, Q128
	4676	13	185 pcs. Quick Coupling Q035 to be renewed.
	4676	14	4 pcs. Locking Couplings to be removed, overhauled and reinstalled. Sealings to be renewed. Fitting No. 4676 Q113, Q114, Q116, Q117
	4676	15	5 pcs. Compensators to be renewed. Fitting No. Q130, Q115, Q118, Q141, Q142
	4676	16	Pressure controller Q158 1/4" NB56199/SA634MK3 to be removed, cleaned and sent to the manufacturer. Pressure controller to be reinstalled.
	4676	17	Pressure controller Q158 1/4" NB56199/SA634MK3 to be disassembled and checked at the manufacturer. Inspection report to be submitted. Sealing's and wearing parts to be renewed.
	4676	18	System to be checked. Report to be submitted.

Bau Group1	Bau Group	Position	Work Description
4677	4677		CO2 – O2 Measuring Equipment
	4677	1	Combined O2/CO2 Measuring Unit.
			Both measuring devices to be calibrated. Report to be submitted.
RENEW ? CLASS	4677	2	O2 sensor of Measuring Instrument to be renewed.
4715	4715		Provision Cooling System
	4715	1	Provision sea water cooling pumps No. 1 + 2
			Ident. No: 47150105, 47150106 (UZ 32-160) to be removed and transported to the workshop.
			Pumps to be cleaned and dismantled by specialist. Report to be submitted
			Impeller, bearings as well as split rings and sealing's to be renewed.
			Pumps to be reinstalled.
			Remark: Pump No 1 has been in service for 21.000h, No 2 for 20.500h.
	4715	2	Damaged paint Provision sea water cooling pumps No. 1 + 2 to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 26 Aug 2013).
	4715	3	Freon Compressor No. 47150109, 47150110 cooling unit 1 + 2 to be removed, overhauled and reinstalled.
			Sealings and wearing parts to be renewed. Protocoll to be submitted.
			Remark: The compressors were in service for 21.000 hours.
		4	Damaged paint Freon Compressor No. 1 + 2 to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	4715	5	Thermal insulating of the meat and vegetable store as well as refrigerator door and the piping's to be checked.
			Report to be submitted.
	4715	6	Evaporator in cold store 47150102 and deep freeze room 47150101 and refrigerator 47150103
			to be cleaned, Drainline heating, fan and fan motor to be checked in situ.
			Report to be submitted.
			Remark: The evaporator, the Fan incl. E-Motor were in service for 21.000 hours.
	4715	7	Freon condenser 1 +2
			Equipment No.: 47150107, 47150108 to be removed and transported to the workshop.
			Condenser covers to be dismantled
			Cooling pipes (sea water side) to be cleaned by pipe brush, condenser to be inspected.
			Inspection report to be submitted. Condenser covers to be refitted.
			Sealings to be renewed.
			Condenser to be cleaned and painted in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			Freon condenser 1 +2 to be reinstalled.
	4715	8	Freon pipe system incl. Condenser to rinse and to pressure test in situ for inspection.
			Dryer to be renewed.
			After checking the pipe system, leak detection and vacuum test to be performed
			Report to be submitted.
			Refill of the system.
	4715	9	El-switch contacts and equipment to open, installed parts
			and wiring to be cleaned and to be checked. Cable connections to be checked for tight fit.
			Electrical equipment to be reclosed.
			Report to be submitted.
	4715	10	4 pcs. Anti vibration and shock absorber for the

Bau Group1	Bau Group	Position	Work Description
			provision cooling plant to be renewed.
	4715	11	Corroded areas (max. 2 m ²) on the provision sea water cooling pump foundations to be ground down to the clean material.
			The area shall be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			After installation the foundation plates of each shock absorber to be cleaned and coated in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			Rubber element to be coated 1 x with Pliobond.
	4715	12	Funktion check Pressure switch 4715S110, S111.
			Report to be submitted.
	4715	13	Cables and cable connections to be checked.
			Report to be submitted.
	4715	14	1 pcs. Screwed bonnet type shut-off valve Fitting-No.: 4715S001
		EC	to be replaced by a Göpfert valve.
			Pipes and pipes connection to the new valve type to be renewed (max. 1m).
	4715	15	10 pcs. Rubber compensator to be renewed.
			Fitting-No. 4715S160-S169
	4715	16	Fittings and pipe lagging of the provision cooling system to be checked.
			Report to be submitted.
	4715	17	Setting the system to work and adjustment of the fittings.
4719	4719		E-Motor Provision Cooling System
	4719	1	2 pcs. El-motors GX70SPEZ for provision compressor and sea cooling pump Ident No: 47190102, 47190103
			to be removed, cleaned and sent to the manufacturer.
			E-motors to be reinstalled.
	4719	2	2 pcs. El-motors GX70SPEZ for provision compressor and sea cooling pump Ident No: 47190102, 47190103 to be dismantled at the manufacturer.
			Report to be submitted.
			Rotor (armature windings) and stator to be washed, dried and new impregnated.
			Commutator to be smoothed and undercut. Rotor to be balanced.
			Carbon brushes, bearings and V-belt to be renewed. Motor to be reassembled.
			A test bench run with vibration analysis to be performed.
			Remark: E-motor No1 has been in service for 21.000h, No 2 for 20.500h.
			Damaged paint to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
4778	4778		Chilled Water System
	4778	1	1 pc. chilled water cooling system compressor
			Item No.: 47780102 to be removed, overhauled and reinstalled. Sealings and wearing parts to be renewed.
			Protocoll to be submitted.
			Damaged paint to be patch coated in accordance with the coating plan paint .
			Remark: The compressor was in service for 8000 hours.
	4778	2	E-Motor chilled water cooling compressor Item No.: 47780201 to be removed and transported to the workshop.
			E-Moter to be reinstalled.
	4778	3	1 pc.E-Motor chilled water cooling compressor Item No.: 47780201
			to be dismantled by specialist. Report to be submitted.
			Rotor (armature windings) and stator to be washed, dried and new impregnated.
			Commutator to be smoothed and undercut. Rotor to be balanced.

Bau Group1	Bau Group	Position	Work Description
			Carbon brushes, bearings and V-belt to be renewed. Motor to be reassembled.
			A test bench run with vibration analysis to be performed. Damaged paint to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			Remark: The Motor was in service for 8000 hours.
	4778	4	2 pc. Chilled Water Pump (Typ UZ32-160) Fitting No: 47780402, 47780502
			to be removed and transported to the workshop. Chilled water pump to be disassembled and inspected. Protocol to be submitted.
			Bearings as well as split rings and sealings to be renewed.
			Damaged paint to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			Remark: The Pumps were in service for 4000 hours. The change of impeller is not necessary.
	4778	5	2 pcs E-motors Typ GMS309 for chilled water pump to be removed and transported to the workshop.
			Ident No: 47780401, 47780501
			E-motors to be reinstalled.
	4778	6	2 pcs E-motors Typ GMS309 for chilled water pump to be dismantled.
			Report to be submitted.
			Rotor (armature windings) and stator to be washed, dried and new impregnated.
			Commutator to be smoothed and undercut. Rotor to be balanced.
			Carbon brushes and bearings to be renewed. Motor to be reassembled.
			A test bench run with vibration analysis to be performed. Damaged paint to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			Remark: The Motor was in service for 4000 hours.
	4778	7	11 pcs. Anti vibration and shock absorber for the chilled water pumps to be renewed.
			Corroded areas on the foundation in the area of the shock absorber to be ground down to the clean material.
			The area shall be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			After installation the foundation plates of each shock absorber to be cleaned and coated in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			Rubber element to be coated 1 x with Pliobond
	4778	8	Freon condenser covers to be removed in situ.
			Sea water cooling pipes to be cleaned and inspected. Condenser covers to be refitted.
			Sealings to be renewed. Pressure test to be performed.
			Damaged paint to be patch coated in accordance with the coating plan paint.
			Report to be submitted
	4778	9	Pipe system incl. Condenser to rinse and to pressure test in situ for inspection.
			Dryer to be renewed.
			After checking the pipe system, leak detection and vacuum test to perform.
			Report to be submitted. Refill of the system.
			Remark: Freon and oil supplied by the client.
	4778	10	Control panel chilled water system: EI-switch contacts and equipment to open installed parts and wiring to be cleaned and to be checked.
			Cable connections to be checked for tight fit. Insulation test to be submitted.
			Electrical equipment to be reclosed.

Bau Group1	Bau Group	Position	Work Description
			Report to be submitted.
	4778	11	Engine room: 8 pcs chilled water compensator R311, R312, R313, R314, R318, R319, R321, R320
			CIC room: 12 pcs. chilled water compensator
			R297, R298, R299, R300, R301, R302, R303, R304, R305, R306, R331, R332,
			Electronic equipment room: 8 pcs. chilled water compensator R293, R294, R307, R308, R309, R310, R315, R316.
			to be renewed.
	4778	12	2 pcs. Screwed bonnet type shut-off valve Fitting-No.: 4778R263, R283
			6 pcs. Globe valve
			Fitting.-No: 4778R259, R260, R261, R262, R273, R274
			10 pcs. Regulating valve
			Fitting-No.: 4778R275, R276, R277, R278, R279, R280,
			R281, R282, R317, R330
		EC	to be replaced by Göpfert valves .
			Pipes and pipes connection to the new valve type to be renewed (max. 1m).
	4778	13	Fittings, pipe lagging and coupling felxible disc of the chilled water cooling system to be checked.
			Report to be submitted.
	4778	14	Expansion tank 47780205 to be replaced.
	4778	15	System pressure test to be performed.
			Setting the system to work and adjustment of the fittings.
4923	4923		Hydraulic Oil System
	4923	1	Hydraulic oil collecting tanks to be opened and cleaned.
			Running-dry-protection to be checked.
	4923	2	24 pcs. Rubber Compensators of the hydraulic oil system to be renewed.
			Fitting No. 49231003, 1013, 1015, 1016, 1017, 1018, 1020, 1023, 1024, 1028, 1030, 1033, 1034, 1035, 1036, 1037, 1052, 1053, 1054, 1055, 1109, 1110, 1111, 1112, 1113.
	4923	3	5 pcs. Filters to be cleaned. Inserts to be renewed.
			Filter No.: 4923X450, X460, X478, X484, X528
	4923	4	14 pcs. Hydraulic oil accumulators:
			Fitting No: 4923X467, X468, X469, X470, X471, X472, X473, X474, X479, X480, X518, X519, X520, X521 and
			1 pc. nitrogen pressure vessel Fitting No.: 4923X466 to be dismantled and transported to the workshop.
			Hydraulic oil accumulators and nitrogen pressure vessel to be refitted.
	4923	5	14 pcs. Hydraulic oil accumulators
			Fitting No: 4923X467, X468, X469, X470, X471, X472, X473, X474, X479, X480, X518, X519, X520, X521 to be renewed.
	4923	005:1	14 pcs. Hydraulic oil accumulators to be painted in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	4923	6	1 pc. Nitrogen pressure vessel fitting no.: 4923X466 to be disassembled and cleaned.

Bau Group1	Bau Group	Position	Work Description
			Wall thickness measurements to be carried out. Inspection to be performed and report submitted.
			Pressure tests to be performed.
			Inspection to be performed by an AIA certified Institution (Client to supply specification).
	4923	7	Outer surface of the Nitrogen pressure vessel to be sandblasted and coated in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 26 Aug 2013).
	4923	8	8 pcs. Anti vibration and shock absorber hydraulic oil accumulator to be renewed.
	4923	9	Corrosion areas on the hydraulic oil accumulator foundation to be ground down to the clean material.
			The area shall be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			Rubber element to be coated 1 x with Pliobond.
	4923	10	4 pcs. Hydraulic oil pump No 1 -4
			Fitting No: 4923X503, X504, X505, X506
			to be renewed.
			Remark: The pumps were in service about 18.000 hours.
	4923	11	E-Motor hydraulic pump No 1 - 4 GMS 618 Item No.: 49231524-49231527 to be removed and transported to the workshop.
			Motor to be reinstalled.
	4923	12	4 pcs. E-Motor hydraulic pump No 1 - 4 GMS 618 Item No.: 49231524-4923152 to be dismantled and checked. Report to be submitted.
			Rotor (armature windings) and stator to be washed, dried and new impregnated.
			Commutator to be smoothed and undercut. Rotor to be balanced.
			Carbon brushes, bearings to be renewed. Motor to be reassembled.
			A test bench run with vibration analysis to be performed. Damaged paint to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			Remark: The Motor was in service for 18.000 hours.
	4923	13	4 pcs rubber spring ring for the hydraulic oil pumps to be renewed.
	4923	14	Corroded areas on the hydraulic pumps foundation to be ground down to the clean material.
			The area shall be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			After installation the foundation plates of each shock absorber to be cleaned and coated in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			Renew all anti vibration shock absorbers and coat rubber element with 1 x coat of Pliobond.
	4923	15	Pump control block X453 to be removed, cleaned and sent to the manufacturer.
			Pump controll block to be reinstalled.
	4923	16	Pump control block X453 to be disassembled und checked at the manufacturer.
			Report to be submitted.
			Controll block to be overhauled, sealings and wear parts to be renewed.
			Remark: The hydraulic block was in service about 18.000 hours.
	4923	17	Bypass pump 4923X477 to be renewed.
			Remarks: The pump has been changed already.
	4923	18	System to be checked. Pressure test to perform.

Bau Group1	Bau Group	Position	Work Description
4935	4935		Compressed Air System
	4935	1	10 pcs.hull valves and valves of the second shut-off to be removed and to be disassembled in workshop.
			Components to be cleaned and to be checked. Inspection report to be submitted.
			Sealings to be renewed.
			Valves to be reassembled pressure tested (according to the appropriate specification).
			Valve sealing surfaces on the PH gland to smooth and to grind. Necked studs and nuts to be renewed.
			Reinstallation of the valves including pressure test on board to be performed.
			Fitting Nr. 4935U003, U004, U026, U040, U133, U135, U137, U138, U170, U183
	4935	2	2 pcs. HP-Compressor Aggregates 49320100,49320200 to be removed and upon completion of reconditioning compressor aggregates to be returned on board and reinstalled.
	4935	3	2 pcs. HP-compressors WP4253/54 to be disassembled. Components to be cleaned and inspected.
			Piston bolts to be taken off and measured. Connecting rods and main bearings to be measured. Crankshafts to be measured Pins to be polished.
			Cooling spaces in bodies and covers to be rinsed. Renewal of following parts for each compressor: 1 set of piston rings
			1 set of bearings and piston bolt bushings
			2 pcs piston bolts 1 pc vent valve
			4 pcs optical oil monitors 1 set of fan belts
			1 set of suction and pressure valves 1 set of zinc protections
			1 set of oil and air filter 1 set of safety valves 1 set of sealing's
			1 pc suction filter
			2 sets of air coolers to be disassembled and checked in workshop.
			Housings and inserts to be cleaned and checked. Zinc protections and sealings to renewed. Air coolers to be reassembled. Compressors to be reassembled. Test run to be performed. Remark: The compressors were in service for about 2500 hours.
	4935	4	2 pcs. EI-motors HP-compressors to be removed and transported to the workshop.
			Motor to be reinstalled.
	4935	5	2 pcs. EI-motors for HP-compressors to be dismantled and checked by specialist.
			Report to be submitted.
			Rotor (armature windings) and stator to be washed, dried and new impregnated.
			Commutator to be smoothed and undercut. Rotor to be balanced.
			Carbon brushes, bearings and V-belt to be renewed. Motor to be reassembled.
			A test bench run with vibration analysis to be performed.
			Remark: The E-motors were in service for about 2500 hours.
	4935	005:!	Damaged paint to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	4935	6	Corroded areas on the HP- air compressor foundations to be ground down to the clean material.
			The area shall be coated in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			After installation the foundation plates of each shock absorber to be cleaned and coated in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			Rubber element to be coated 1 x with Pliobond.

Bau Group1	Bau Group	Position	Work Description
	4935	7	5 pcs. Pressure Reducers of the compressed air system to be removed, assembled, overhauled and reinstalled. Report to be submitted.
			Seats, needles, sealing's and membranes to be renewed. Fitting No. 4935 U019, U705, U706, U707, U708.
	4935	8	3 pcs. Safety Valves to be removed and disassembled. Sealing's, and springs to be renewed. Valves to be reassembled and adjusted. Valve to be reinstalled. Report to be submitted.
			Fitting No. 4935 U210, U211, U221.
	4935	9	1 pc. Filters to be opened, cleaned, inserts to be renewed and the filters to be reassembled. Fitting Nr. 4935 U654
	4935	10	6 pcs. Emergency Blow Connection to open, cleaned and to be checked. Sealings to be renewed. Fitting Nr. 4935 U145, U146, U147, U148, U164, U306
	4935	11	3 pcs. air manifolds to be open, cleaned, sealing's to be renewed. Fitting Nr. 4935U901, U902, U904.
	4935	12	Blow-Off air Manifold (4935 U903) 32 bar Safety valve to be removed and overhauled. Sealing's and springs to be renewed Valves inserts fitting No.: 4935U092, U093, U094, U095, U096, U097, U101 and Drain Valve insert 4935U099 to be removed, overhauled, reinstalled and pressure tested. Remark: Erosion marks were found at the sealing surfaces of the valve inserts.
	4935	13	Compressed Air Receiver Fitting-No.: 4935U225 (9,6l 10 bar) to be removed, cleaned and transported to the workshop. Compressed Air Receiver to be reinstalled.
	4935	14	Compressed Air Receiver Fitting-No.: 4935U225 (9,6l 10 bar) to be cleaned, rinsed and dried. Wall thickness measurements to be carried out. Inspection to be performed by an AIA certified Institution (Client to supply specification). Report to be submitted. Pressure tests of the Air Cylinder to be performed
			Receiver to be painted in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	4935	15	Dismounting and overhaul emergency blow valve fwd. Fitting-No.: 4935U285, U286, U287, U288, U391, U392 Sealings to be renewed.
	4935	16	26 Rubber Compensators of the compressed air system to be renewed. Fitting No. 4935U636; U639; U936; U637; U638; U935; U604, U605; U606; U611; U609; U613; U615; U616; U617; U614, U608; U618; U619; U620; U621; U622; U656; U657; U658; U659
	4935	17	Compressed air system to be pressure tested, to be checked. Report to be submitted.
4936	4936		Compressed Air Liferaft System
	4936	1	Hull valves and valves of the second shut-off to be removed and to be disassembled in workshop. Components to be cleaned and to be checked. Inspection report to be submitted. Sealing's to be renewed. Valves to be reassembled pressure tested (according to the appropriate specification). Valve sealing surfaces on the PH gland to smooth and to grind. Necked studs and nuts to be renewed. Reinstallation of the valves including pressure test on board to be performed. 4 pcs. Valves of the compressed air system.

Bau Group1	Bau Group	Position	Work Description
			Fitting Nr. 4936U201, U203, U207, U208
	4936	2	2 pcs Pressure Reducer to be removed, cleaned and sent to the manufacturer.
	4936	3	2 pcs Pressure Reducer to be disassembled and checked at the manufacturer.
			Inspection report to be submitted. Sealing's and wearing parts to be renewed. Pressure reducer to be reinstalled.
			Fitting No.: 4936U759, U766
	4936	4	2 pcs. Globe valve (JoWo) to be dismounted, disassembled, and checked.
			Sealings to be renewed.
			Fitting Nr. 4936U266, U267
	4936	5	2 pcs. Air Container of the life raft system to be renewed.
			Fitting No. 4936U767, U768
4937	4937		Service Air System
	4937	1	Hull valves and valves of the second shut-off to be removed and to be disassembled in workshop.
			Components to be cleaned and to be checked. Inspection report to be submitted.
			Sealing's to be renewed.
			Valves to be reassembled pressure tested (according to the appropriate specification).
			Valve sealing surfaces on the PH gland to smooth and to grind. Necked studs and nuts to be renewed.
			Reinstallation of the valves including pressure test on board to be performed.
			1 pc. Valves of the compressed air system.
			Fitting Nr.: 4937V028
	4937	2	8 pcs. Solenoid valves to be removed, overhauled, pressure tested and reinstalled.
			Sealings to be renewed.
			Fitting-No.: 4937V001, V004, V039, V050, V092, V093, V094, V095
	4937	3	1 pc. Three-way-cock to snorkel head valve to be removed, cleaned, overhauled, pressure tested and reinstalled.
			Sealings to be renewed.
			Fitting-No.: 4937V027,
	4937	4	1 pc. Pressure reducing station to be removed, assembled, overhauled and reinstalled. Report to be submitted.
			Seats, needles, sealing's and membranes to be renewed. Pressure Reducers to be reinstalled.
			Fitting No. 4937V130
	4937	5	1 pc. Reducing station to be renewed.
			Fitting No.: 4937V138
	4937	6	6 pcs. Rubber Compensators of the compressed air system to be renewed.
			Fitting No. 4937V222; V223; V224; V225; V226; V227
	4937	7	1 pc.. Pneumatic contr. Unit to be dismounted, disassembled, and checked.
			Report to be submitted.
			Fitting Nr. 4937V150
4938	4938		Compressed Air System HP
	4938	1	Hull valves and valves of the second shut-off to be removed and to be disassembled in workshop. Components to be cleaned and to be checked.
			Inspection report to be submitted. Sealing's to be renewed.
			Valves to be reassembled pressure tested (according to the appropriate specification).

Bau Group1	Bau Group	Position	Work Description
			Valve sealing surfaces on the PH gland to smooth and to grind. Necked studs and nuts to be renewed
			Reinstallation of the valves including pressure test on board to be performed.
			10 pcs. valves of the compressed air system.
			Fitting Nr.: 4938U114, U115, U116, U117, U121, U122 U141, U142, U163, U194
	4938	2	7 pcs. Rubber Compensators of the compressed air system to be renewed.
			Fitting No.4938U600, U601, U602, U603, U670, U671, U939
	4938	3	Reducing Station (4938U702) 250>100BAR
			Valve inserts fitting No.: 4938U102, 103, 104 to be removed, overhauled reinstalled and pressure tested.
			Safety valves to be adjusted.
			Reducing Station (4938U709) 250>50BAR
			Valve Inserts fitting No.: 4938U105, 106, 107 to be removed, overhauled reinstalled and pressure tested.
			Safety valves to be adjusted.
			If the overhaul fails, new valve inserts must be delivered. In case additional quote will presented.
			Remark: Erosion marks were found at the sealing surfaces of the valve inserts.
	4938	4	8 pcs. Filters to be opened, cleaned, inserts to be renewed and the filters to be reassembled.
			Fitting Nr. 4938U820, U821, U822, U823, U824, U825, U826, U829
	4938	5	5 pcs. Safety Valves to be removed and disassembled. Sealing's, and springs to be renewed.
			Valves to be reassembled and adjusted. Valve to be reinstalled.
			Report to be submitted.
			Fitting No. 4938U196, U230, U231, U232, U233
	4938	6	1 pcs. air manifolds to be open, cleaned, sealing's to be renewed. Fitting Nr. 4938U900
	4938	7	16 pcs. Compressed Air Cylinders 4938U918 - U933 to be removed and transported to the workshop.
			Compressed air cylinders to be reinstalled on board.
	4938	8	16 pcs. Compressed Air Cylinders 4938U918 - U933 disassembled in workshop.
			Connecting piece and drain pipe to be dismantled. Sealings to be renewed with all accessories.
			Compressed air Cylinder to be cleaned, rinsed and dried. Wall thickness measurements to be carried out.
			Inspection to be performed by an AIA certified Institution (Client to supply specification).
			Report to be submitted.
			Pressure tests of each Air Cylinder to be performed 26 pcs.foundation caps to be maintained
			8 pcs. foundation caps (U918, U919, U932, U933) on upper deck to be maintained with a pourable two component epoxy paste (EPOCAST will be supplied by ADS).
			NOTE: Based on report, cylinders out of tolerance have to be renewed. Scope to be defined after inspection.
	4938	9	16 pcs. Compressed Air Cylinders (in-and outside),
			26 pcs. foundation caps and 64 pcs. Connecting rods to be grit blasted.
			Parts to be painted in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
ASK STM	4938	10	Air drier FHD-10-95 Fitting No: 49380200 to be remove, cleaned and transported to the manufacturer.
			Air drier to be reinstalled.

Bau Group1	Bau Group	Position	Work Description
	4938	11	Air drier FHD-10-95 Fitting No: 49380200 to be disassembled and checked. Report to be submitted. Air drier to be overhauled, sealings and wear parts to be renewed. Air drier to be tested by TÜV. Drier to be painted acc. Paint specification.
	4938	12	1 pc. Pressure maintaining valve to be renewed. Fitting No.:4938U827
5070			Hydraulic System Antenna
	5070	1	5 pcs. Hose compensators to be renewed. Fitting No. 5070/1060, 1061, 1062, 1088, 1089
	5070	2	1 pce Hydraulic oil accumulators Fitting No: 5070X562 to be replaced.
	5070	3	2 pcs. Stop valves of the hydraulic system. Fitting No. 5070X212, X213 to be removed and overhauled.
5141	5141		HF-Mast
	5141	1	HF emergency Antenna to be checked. Report to be submitted.
5183	5183		Combined Antenna (2-Stage Transmitting and Receiving Antenna)
	5183	1	2-Stage Transmitting and Receiving Antenna to be removed and stored (for reference see 1282/010). After completion of the overhaul of the PH-penetration the hoistable mast will be installed. PH-Penetration gasket set to be renewed. Function test to be submitted.
	5183	2	2-Stage Transmitting and Receiving Antenna Typ AT 4125 to be disassembled and checked by a manufacturer specialist. Report to be submitted. Sealings and wear parts to be renewed. Corroded areas at the FM-Mast to be area blasted and coated in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016). In case damages on components are detected subject has to be investigated and quoted separately.
5254	5254		Plotting Table Type S.P.L
	5254	1	Plotting table to be checked by the manufacturer. Report to be submitted. CMOS Battery needs to be exchanged. To be contracted to Tellumat.
	5254	2	Shock mounts and connectors to be checked. Report to be submitted
	5254	3	Keyboard/Joystick (incl. electroluminescent-display) to be renewed.
5281	5281		Hoisting Masts for Radar Antenna
	5281	1	Hoistable Mast for Radar antenna to be removed and stored (for reference see 1282/10). After completion the overhaul of the PH-penetration the hoistable mast will be installed. PH-Penetration sealings to be renewed. Function test to be submitted.
Manufacturer?	5281	2	Hoistable Mast for Radarantenna to be disassembled and checked by a manufacturer specialist. Report to be submitted. Sealings and wear parts to be renewed. Corroded areas at the FM-Mast to be area blasted and coated in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016). Rotating Drive 5070X738 to be overhauled, sealings and wear parts to be renewed. Remark: Radar Rotating Drive is very noisy. In case any damages on components are detected, they will be calculated separately.
	5281	3	Magnetron for Navigation Radar Type SCANTER 1024 to be renewed.

Bau Group1	Bau Group	Position	Work Description
			Remarks: Burn marks at the Magnetron Supply Wires and inner Plate caused by High Voltage.
5292	5292		Optronic System Type OMS100
1 pc. valve of the central grease system hoistable masts. Fitting No.5292W051	5292	1	Hull valves fitting no.: X233, X221, X22
			to be removed and to be disassembled in workshop. Components to be cleaned and to be checked.
			Inspection report to be submitted. Sealing's to be renewed.
			Valves to be reassembled pressure tested (according to the appropriate specification).
			Valve sealing surfaces on the PH gland to smooth and to grind. Necked studs and nuts to be renewed.
			Reinstallation of the valves including pressure test on board to be performed.
	5292	2	1 pc. valve of the central grease system hoistable masts. Fitting No.5292/W051 to be removed, disassembled, cleaned and checked.
			Report to be submitted.
			Sealings to be renewed
5321	5321		Hoistable Mast for Optronic Sensor
	5321	1	Optronic Sensors to be checked by manufacturer specialist before disassembly.
			Inspection report to be submitted.
			Optronic Head, ocular box, motor drive and hoisting yoke to be removed.
			Parts to be stored by the Client.
			After completion of the hoistable mast Optronic Head, Ocular Box, motor drive and hoisting yoke to be reinstalled.
	5321	2	In accordance with item 1282/010 Optronic Mast to be removed and stored.
			After completion the overhaul of the PH-pentration the optronik hoistable mast will be installed.
			PH-Penetration sealings to be renewed.
			Function test to be submitted. Work to be contracted to ZEISS
	5321	3	Optronic Mast to be disassembled and checked by manufacturer specialist.
			Report to be submitted.
			Sealings and wear parts to be renewed.
			Corroded areas at the Opronik-Mast to be area blasted and coated in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
			In case any damages on components are detected, they will be calculated separately.
			Remarks:
			The optronic mast moves in hoisted position from port- to starbord side while the boat is rolling.
			Leakage on the 2nd stage - 39c3 / 100c3 - 26.05.14 Leakage on the 2nd stage - 100c3 / 100c3 - 27.05.14
			Leakage on the Revolution drive - 500c3 / 500c3. Work to done by ZEISS
5326	5326		ESM System Type UME100
	5326	1	ESM System UME 100 to be checked by specialist. Report to be submitted.
			Remarks: ESM Direction Finder Antenna was defect. The antenna was replaced but not calibrated. New calibration is

Bau Group1	Bau Group	Position	Work Description
			necessary. Work to be contracted to SAAB.
5342	5342		Attack Periscope
	5342	1	Attack Periscope to be removed and stored (for reference see 1282/10). After completion of the overhaul of the PH-penetration the Attack Periscope will be reinstalled. PH-Penetration gasket set to be renewed. Function test to be submitted.
	5342	2	Attack Periscope to be checked by manufacturer specialist. Inspection report to be submitted.
	5342	3	Corroded areas at the Optronic-Mast to be area blasted and coated in accordance with the SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 26 Aug 2013).
5485	5485		Radio Communication System
	5485	1	Radio Communication System to be checked. Report to be submitted. Remarks: NEMAS Laptop defect and removed. HF TRX1 intermittent shows low Power levels when transmitting. BITE intermittent shows HIGH VSWR. Display light is very low. Keypad is not very responsive. LINK SAN could not be tested and is reported defect by crew. CAPSAT Software on Communication Laptop ROC1 needs to be reinstalled.
	5485	2	NEMAS Laptop to be renewed.
	5485	3	B46 ROC4 power supply to be replaced.
5553	5553		Seawater Sensor S ² VTD Probes mod S250 (Raytheon)
	5553	1	S ² VTD Probe Bow to be renewed Remarks: 5553 SSVTD Bow Pressure Sensor defect. 5553 SSVTD Sail not tested (in Air Temperature Indication OK).
	5553	2	S ² VTD Probe Bow and S ² VTD Probe Fin to be removed, calibrated at the manufacturer and reinstalled. System to be checked. Report to be submitted. Remark: Both probes must be calibrated, according the schedule every 2 years. Check can be performed by means of a reference probe from IMT. If a reference probe is not available both probes must be calibrated in Germany at company Raytheon.
5761	5761		Signal Ejector
	5761	1	Signal ejector to be removed. Ejector to be disassembled and overhauled. Sealings and waring parts to be renewed. Pressure test to be performed. Protocol to be suggested. Signal ejector to be reinstalled.
	5761	2	13 pcs. Valves of the system to be removed, overhauled and reinstalled. Sealings to be renewed. Fitting Nr. 5761Y001, Y002, Y003, Y 004, Y005, Y 006, Y007, Y008, Y009, Y010, Y011, Y111, Y115
	5761	3	2 pcs. Pressure Gauges Units to be removed. Pressure gauges to be reinstalled. Fitting No. 5761/Y110, Y113.
	5761	4	2 pcs. Pressure Gauges Units to be maintained and to be adjusted. Report to be submitted. Fitting No. 5761/Y110, Y113.
7325	7325		Torpedo System

Bau Group1	Bau Group	Position	Work Description
2 pcs. valves of the bow torpedo seawater system Fitting No.7325Z132, Z133	7325	1	Hull valves and valves of the second shut-off
			to be removed and to be disassembled in workshop. Components to be cleaned and to be checked.
			Inspection report to be submitted. Sealing's to be renewed.
			Valves to be reassembled pressure tested (according to the appropriate specification).
			Valve sealing surfaces on the PH gland to smooth and to grind. Necked studs and nuts to be renewed.
			Reinstallation of the valves including pressure test on board to be performed.
			2 pcs. valves of the bow torpedo seawater system
			Fitting No.7325Z132, Z133
	7325	2	Shell flaps to be uncoupled and together with the linkages Components to be checked.
			Report to be submitted.
			Zinc anodes and bearings of the linkages to be renewed
			All greasing pipes for torpedo shell flaps to be cleaned. All parts to be reinstalled and adjusted.
	7325	3	Corroded areas (max. 20m²) on the shell flaps and linkages to be ground down to the clean material.
			areas to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	7325	4	Mechanical Functional test of the performance of all valves and linkage to the 8 torpedo tubes.
	7325	5	Hostalen-parts of the guide rails in the torpedo launching area to be removed.
			Inspection report to be submitted.
			Hostalen guide rails to be reinstalled and calibrated by caliber jig. The caliber will be supplied by the Client.
	7325	6	Guide rail foundations to be cleaned. Corroded areas (max. 16 m²) to be ground down to the clean material.
			areas to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	7325	7	Tube I - VIII : Functional test of the performance of valves and linkages at the Torpedo Tubes.
			Report to be submitted.
	7325	8	Tube I-VIII: Muzzle shutters opening shafts, stuffing boxes, linkages, bolts, operating gear to be removed.
			The removed parts to be cleaned and inspected. Inspection report to be submitted.
			Shafts, operating gear, stuffing boxes to be overhauled.
			Sealings to be renewed.
	7325	9	8 pcs. Sealing's and Zinc anodes (to be supplied by the Client)
			end cover doors to be renewed. 7010-03-0020
	7325	10	8 pcs. breech door sealing to be renewed.
			System to be adjusted. 7010-05-0010
	7325	11	4 pcs transport slides of the weapon embarkation and mine lying system to be cleaned, checked.
			Report to be submitted.
	7325	12	Guide rails in the torpedo tubes to be inspected.
			Inspection report to be submitted
	7325	13	4 pcs Safety Valves

Bau Group1	Bau Group	Position	Work Description
			to be overhauled and to be adjusted. Sealing's and springs to be renewed. Fitting Nr.7325Z125, Z126, Z127, Z128
	7325	14	1 pc. Reducing Station to be overhauled sealings to be renewed. Fitting No. 7325/Z067
	7325	15	1 pc. Filter to be cleaned. Sealing to be renewed Fitting No. 7325Z130
	7325	16	1 pc. Screwed bonnet type shut-off valve
		EC	Fitting-No.: 7325Z062 to be replaced by a Göpfert valve.
			Pipes and pipes connection to the new valve type to be renewed (max. 1 m).
	7325	17	System funktion test to be performed. Report to be submitted.
7328	7328		Torpedo Hydraulic Accumulator
	7328	1	2 pcs Hydraulic accumulator X867, X868 to be removed and disassembled in workshop.
			2 pcs. Hydraulic accumulator to be reinstalled on board.
	7328	2	2 pcs. Hydraulic snubber X867, X868 to be replaced.
	7328	3	Outer surface of 2 pcs. Hydraulic snubber X867, X868 to be sandblasted and painted in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
	7328	4	6 pcs. Hydraulic compensator to be renewed. Fitting-No.: 73281118, 1119, 1124, 1125, 1036 & 1041
7340	7340		Torpedo Loading and Stowage Equipment
	7340	1	Lifting masts, lifting traverses, lifting ropes, hydraulic motors, cross-transport trolley, fastening belts and holders of the torpedo loading and stowage. System to be checked. Report to be submitted.
	7340	2	Retracting bolts incl. bearings and drive rods for torpedo loading platform to be disassembled, cleaned and inspected. Parts to be smoothed. All parts to be reassembled and aligned. Greasing pipes to be modified as for S101.
7378	7378		Weapon Embarkation System
	7378	1	7 pcs. Hydraulic compensator to be renewed. Fitting-No.: 73781075, 1076, 1077, 1114-1117
8454	8454		Torpedo Countermeasures System
	8454	1	Torpedo Counter Measures TCM (HDW/ WASS) to be checked by STM specialists. Report to be submitted.
Remove for QMOD			Remarks: Portside "Swing Out Error" shown at RCU - known by Crew / Switch defect.
REmove for QMOD			Starboard Side GRP Cover is not closing properly.
	8454	2	5 pcs. Hull valves and valves of the second shut-off to be removed and to be disassembled in workshop. Components to be cleaned and to be checked. Inspection report to be submitted. Sealing's to be renewed. Valves to be reassembled pressure tested (according to the appropriate specification). Valve sealing surfaces on the PH gland to smooth and to grind. Reinstallation of the valves including pressure test on board to be performed. 5 pcs. Stop valves of the hydraulic system. Fitting No. 8454X047, X090, X091, X092, X093
	8454	3	8 pcs Hydraulic Diaphragm Accumulator (0.16 l) X104,X107, X231, X232, X234, X239, X248, X261 to be renewed.

Bau Group1	Bau Group	Position	Work Description
	8454	4	18 pcs. Compensators for the TCM system to be renewed. Fitting No.8454 9301, 9302, 9303, 9304, 9305, 9306, 9307, 9308, 9309, 9318, 9319, 9320, 9321, 9322, 9323, 9324,9325, 9326
	8454	5	Corroded areas (max. 4m²) on the TCM to be ground down to the clean material. Areas to be repaired in accordance with SA Navy Submarine Coating Plan (Doc No.: 70300-1944-01-00-00, Doc Issue: 2F, dated 3 Nov 2016).
3510	3510		Lighting System
			System to be checked. Report to be submitted.
			Repairs to be completed.
			System to be checked. Report to be submitted.
3540	3540		Navigation Lights
			System to be checked. Report to be submitted.
			Repairs to be completed.
			System to be checked. Report to be submitted.
5010	5010		External Communication Subsystem
			System to be checked. Report to be submitted.
			Repairs to be completed.
			System to be checked. Report to be submitted.
5542	5542		Echo Sounder
			Navigation System
5830	5830		Gyro Compass
			Agilog
			Fire Detection System

Bau Group1	Bau Group	Position	Work Description
???	EC?	Oscel	Steering Console
			Underwater Telephone
			Inertial Navigation System (INS)
5230	5230		Radar System
1660, 1784	1660, 1784		Name plating and Draught marks
1661	1661		Partition Walls, Doors & Cupboards
9112	9112		Stowage of tools, onboard spares
9116	9116		Fire Extinguishers and Removable Rescue Means, Air Trap
1179	1179		Lifting Eyes
4344	4344		Tank Contents Gauge System
0620	0620		Test Before Launching
??			
4814	4814		Cooking Facilities
3916	3916		H2 Elimination System
REPLACE			
4675	4675		Air Regeneration System

Bau Group1	Bau Group	Position	Work Description
3405	3405	????	
2721	2721		Insulation Monitoring Unit for DC Networks
2776	2776		Submarine Control Console
3522	3522		Plug Socket Circuits
0400	0400		Vibration Measurement
6722	6722		Navigation & Data Management Centre (NDMC) S150
2721	2721		Field Rheostat
2722	2722		Exciter Converter with Switchbox for Exciter Control
3664	3664		Ships Announcement and Radio TV Distribution System
0120	0120		EMC - EMI
3629	3629		Ship's Control & Monitoring System
ALL Indication bulbs obsolete			
3655	3655		Fire Alarm System

Bau Group1	Bau Group	Position	Work Description
3661	3661		Postal Telephone System
3661	3661		Sound Powered Telephone
3662	3662		Ship's Intercom System
RST16???			
3681	3681		Alarm System New
5131	5131		Radio Communications System
5141	5141		Emergency HF Antenna
5187	5187		Hoistable Mast Control
5135	5135		250 Fleetbroadband
9137	9137		PC Networking
5546	5546		Sonar Beacon
5500	5500		Sonar Doppler Log
6331	6331		Combat System ISUS 90-45

Bau Group1	Bau Group	Position	Work Description
5500	5500		Link Control System

ANNEXURE C OF THE RFB: SUPPORT CAPABILITY MATRIX

The bidder shall complete a Support Capability Matrix in accordance with the format outlined below. The table hereunder lists all the applicable build groups for the **Technical, Maintenance and repair services for the Submarine platforms of the SA Navy.**

Note that the percentage sum total of column A, B and C below shall be equal to *D =100%

Example:

ITEM No.	BUILD-GROUP NO.	TASK No.	A IN HOUSE SUPPORT CAPABILITY	B EXISTING SUBCONTRACTORS UNDER YOUR MANAGEMENT	C NEW SUBCONTRACTORS	D TOTAL*
1	1171	001	100	0	0	100
2	1172	001	40	60	0	100
3	1175	001 to 005	40	0	60	100
4	1276	001 to 002	0	40	60	100
5	1280/1282	001 to 014	0	0	100	100
6	1613	001 to 003	0	100	0	100
TOTAL						100

DEFINITIONS

1. In house capability

The bidder has the ability to carry out the work with his own personnel, equipment and facilities.

2. Existing subcontractors under their control

The bidder has an existing arrangement with subcontractors to perform the work and is able to manage and accept full responsibility for his subcontractors.

3. New subcontractors

The bidder is able to supply and manage the service, but the work will be carried out by new subcontractors who have not been contracted by him in the past.

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ANNEXURE C OF THE RFB: SUPPORT CAPABILITY MATRIX

ITEM No.	BUILD-GROUP NO.	TASK No.	A IN HOUSE SUPPORT CAPABILITY	B EXISTING SUBCONTRACTORS UNDER YOUR MANAGEMENT	C NEW SUBCONTRACTORS	D TOTAL*
1.	1171	001				
2.	1172	001				
3.	1175	001 to 005				
4.	1276	001 to 002				
5.	1280/1282	001 to 014				
6.	1613	001 to 003				
7.	1636	001				
8.	1910	001				
9.	1916	001 to 005				
10.	1947	001 to 002				
11.	2110	001 to 005				
12.	2124	001 to 007				
13.	2128	001 to 004				
14.	2129	001 to 006				
15.	2136	001 to 009				
16.	2148	001 to 008				
17.	2154	001 to 012				
18.	2155	001 to 008				
19.	2156	001 to 004				
20.	2158	001 to 005				
21.	2178	001 to 005				

ITEM No.	BUILD- GROUP NO.	TASK No.	A IN HOUSE SUPPORT CAPABILITY	B EXISTING SUBCONTRACTORS UNDER YOUR MANAGEMENT	C NEW SUBCONTRACTORS	D TOTAL*
22.	2510	001 to 006				
23.	2544	001 to 002				
24.	2551	001 to 003				
25.	2552	001 to 008				
26.	2553	001 to 010				
27.	2556	001 to 004				
28.	2778	001 to 007				
29.	2910	001				
30.	2914	001 to 004				
31.	2916	001 to 005				
32.	2919	001 to 015				
33.	3310	001 to 019				
34.	3321	001 to 010				
35.	3370	001				
36.	3494	001 to 003				
37.	3662	001 to 003				
38.	4120	001 to 006				
39.	4174	001 to 004				
40.	4192	001 to 006				
41.	4228	001 to 004				
42.	4261	001				
43.	4311	001 to 003				
44.	4315	001 to 003				

ITEM No.	BUILD-GROUP NO.	TASK No.	A IN HOUSE SUPPORT CAPABILITY	B EXISTING SUBCONTRACTORS UNDER YOUR MANAGEMENT	C NEW SUBCONTRACTORS	D TOTAL*
45.	4318	001 to 010				
46.	4338	001 to 010				
47.	4350	001 to 004				
48.	4363	001 to 002				
49.	4368	001 to 004				
50.	4410	001				
51.	4522	001				
52.	4528	001 to 008				
53.	4548	001 to 005				
54.	4558	001 to 009				
55.	4578	001				
56.	4610	001 to 003				
57.	4628	001 to 005				
58.	4671	001 to 026				
59.	4672	001 to 003				
60.	4676	001 to 013				
61.	4677	001 to 002				
62.	4715	001 to 017				
63.	4719	001-002				
64.	4778	001 to 014				
65.	4923	001 to 014				
66.	4935	001 to 014				
67.	4936	001 to 003				

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ITEM No.	BUILD- GROUP NO.	TASK No.	A IN HOUSE SUPPORT CAPABILITY	B EXISTING SUBCONTRACTORS UNDER YOUR MANAGEMENT	C NEW SUBCONTRACTORS	D TOTAL*
68.	4937	001 to 007				
69.	4938	001 to 010				
70.	5070	001 to 003				
71.	5141	001				
72.	5183	001 to 003				
73.	5281	001 to 004				
74.	5292	001 to 002				
75.	5321	001 to 002				
76.	5761	001 to 003				
77.	7325	001 to 018				
78.	7328	001				
79.	7340	001 to 002				
80.	7378	001				
81.	8454	001 to 005				
TOTAL						

ADDITIONAL SUPPORT MATRIX

The bidder is required to complete the matrix below indicating whether they are able to support the build groups listed.

Note: This matrix and the information provided will not be used as qualifying criteria.

ITEM No	BUILD GROUP No	A IN HOUSE SUPPORT CAPABILITY	B EXISTING SUBCONTRACTORS UNDER YOUR MANAGEMENT	C New SUBCONTRACTORS
1.	1780			
2.	3135			
3.	3137			
4.	4416			
5.	5243			
6.	5254			
7.	5342			
8.	5326			
9.	5485			
10.	5553			
11.	5810			
12.	5831			
13.	5840			
14.	6331			
15.	6722			

ANNEXURE D OF THE RFB: MANPOWER CAPABILITY MATRIX

It is required that the Bidder provides personnel with the expertise able to support the systems listed in the SOW Annexure A. The expertise has been broken down into the following categories for EXAMPLE:

Name	Designation	Qualification	System Knowledge Refer to Annexure SOW.	No. of Years of related experience
	Project Manager			
	Engineer			
	Technician			
	Artisan			

Note: The Bidder to refer to the categories below for guidance on expected qualification and experience on various categories of personnel as captured in the table above.

- **Project Manager:**
Personnel capable of planning and co-ordinating various tasks required when conducting a submarine refit, with a minimum 2 years' experience.
- **Engineer:**
A nationally recognised Engineering degree (NQF Level 7) with a proven ability of providing in depth diagnostic services as well as solving complex defects, with a minimum 2 years' experience. Must be proficient in:
 - Mechanical: marine systems, propulsion systems and the structural integrity of a submarine.
- **Technician:**
A Nationally recognized Engineering Technical Diploma (NQF Level 6) plus the proven capability of providing in-depth equipment level diagnostic services as well as solving complex defects, with a minimum 2 years' experience. Must be proficient in:
 - Mechanical: Mechanical systems, including pumps, valves, HVAC systems and other mechanical components.
 - Electrical: electrical systems, power distribution and instrumentation used on a submarine.
- **Artisans:**
A recognized National Trade Test Certificate plus the proven capability of executing maintenance of submarine equipment, with a minimum 1 years' experience.

ANNEXURE E OF THE RFB –WORKS AUTHORIZATIONS (WA)

1.0 **Rates/Costs And Conditions**

The intent of this item is to specify the rates/costs and conditions for services to be rendered on an “on demand” (Work Authorization) basis

CLAUSE NO	DESCRIPTION	RATES/TARIFFS/COSTS FOR THE DURATION OF THE CONTRACT.	RATES/TARIFFS/COSTS AFTER THE INITIAL 12 MONTH PERIOD	
1.1	Labour (normal working hours)	The labour rates shall be fixed for the first financial year.	The labour rates shall be fixed for the first financial year whereas the rates for the second and third financial years are subject to SEIFSA linked escalation formulae Rates will escalate as per Appendix “A” paragraph 2.0	
	Project Manager	R p/hour		
	Engineer	R p/hour		
	Technician	R p/hour		
	Artisan	R p/hour		
	Administrator/data clerk Labourer	R p/hour		
1.2	Labour (After normal working hours) Rates as per 1.1 with the Multiplying Factor below: 1.0 – Normal Weekdays 1.5 – Weekends and Public Holidays	The labour rates shall be fixed for the first financial year whereas the rates for the second and third financial years are subject to SEIFSA linked escalation formulae.	Rates will escalate as per Appendix “A” paragraph 2.0	
1.3	Handling Fee for SPARES, CONSUMABLES and SUBCONTRACTOR SERVICES.	Item value	Handling Fee	Handling fee cost basis (if applicable)
		(R1,00 to R100 000,00)		Direct costs for clearance, shipping or delivery into store not included in handling fee and will be paid for against documentary proof
		(More than R100 000,00 up to R500 000,00)		
		(More than R500 000,00 up to R1 000 000,00)		
		(More than R1 000 000,00 up to R50 000 000,00)		
		More than R50 000 000,00 up to R100 000 000,00		
		More than R100 000 000,00		

1.4	Packaging, Handling, Storage And Transportation (PHS & T)	Actual cost incurred.
1.5	Local Subsistence and Travel cost.	Actual cost incurred as per Armscor's rates and conditions.
1.6	Contractor and subcontractor support services	Subject to an approved quotation.

2.0 Escalation of manpower rates/tariffs

The labour rates is fixed for the first financial year whereas the rates for the second and third financial years are subject to SEIFSA linked escalation formulae. :

$$Pf = \frac{Pq \times (L1)}{(L0)}$$

Where:

Pf = Escalated man-hour tariff

Pq = Offered man-hour tariff

L1 = SEIFSA Index for "Hourly Rated Employees", Table C3, published for the month, three (3) months prior to the month of adjustment.

L0 = SEIFSA Index for "Hourly Related Employees", Table C3, published for the Base Date.

Note: Base date is date of quotation.

3.0 STANDARD SERVICES. LABOUR COSTS AS PER CLAUSE 1.1 and 1.2 ABOVE.

The intent of this item is to cater for "on demand" services to be rendered against the applicable man-hour rates. A Works Authorization shall be opened for each task.

3.1 Conditions of acceptance:

3.1.1 A copy of the completed Works Authorization signed by the SA Navy or his delegated representative and the Armscor Project Manager or his delegated representative.

3.1.2 The Contractor's official certificate of conformance stating that all tasks are completed in accordance with the conditions of the Order.

3.1.3 A Job Card signed by the main contractor, and a SA Navy representative indicating the completion of the task.

4.0 SPARES, CONSUMABLES AND SUBCONTRACTOR SERVICES AS PER CLAUSE 1.3 ABOVE

4.1 The spares, consumables and Subcontractor services will be purchased/supplied by the Contractor and invoiced per Works Authorization. The Contractor shall provide formal motivation and justification for the prices quoted. (Proof of comparative prices shall be provided with the WA. In cases of single source quotations, proof of actual cost shall be provided).

4.2 The existing SANDF owned spares must be utilized before any procurement of that particular spare or material can take place. These spares/materials shall be invoiced at "No Charge".

4.3 **Supplementary conditions:**

4.3.1 A Works Authorization must be opened for each task.

4.3.2 Documentary proof of prices charged for spares/consumables and Subcontractor services must be available for auditing when so required by Armscor.

4.4 **Conditions of acceptance:**

4.4.1 **FOR HARDWARE DELIVERABLES**

4.4.1.1 The A copy of the Inspection Release Certificate (Form AK-FORM-0047), issued, signed and stamped by a representative of Armscor's Quality and the proof of delivery portion, duly completed, signed and stamped by the responsible Dockyard official at the Dockyards premises.

4.4.1.2 The Contractor's official certificate of conformance stating that all tasks are completed in accordance with the conditions of the Order.

4.4.1.3 A copy of the completed Works Authorization signed by the SA Navy or his delegated representative and the Armscor Project Manager or his delegated representative.

4.4.2 **FOR SUBCONTRACTOR SERVICES AND CONSUMABLES**

4.4.2.1 The Contractor's official certificate of conformance stating that all tasks are completed in accordance with the conditions of the Order.

4.4.2.2 A copy of the completed Works Authorization signed by the SA Navy representative or his delegated representative and the Armscor Programme Manager or his delegated representative.

4.4.2.3 A Job Card signed by the main contractor, and a SA Navy representative indicating the completion of the task.

5.0 **PACKAGING, HANDLING, STORAGE AND TRANSPORT AS PER CLAUSE 1.4 ABOVE.**

5.1 The intent of this item is to cater for all material and consumables required for packaging purposes.

5.2 The Contractor shall supply, maintain, insure, license, purchase or lease and operate at his own risk and in his own name all transport considered necessary to carry out his obligations.

5.3 **Supplementary conditions**

5.3.1 Documentary proof of prices charged must be available for auditing when so required by Armscor.

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5.3.2 Where not specified the Contractor shall ensure that the items are suitably packed for the method of transport or storage.

5.4 Conditions of acceptance:

5.4.1 A copy of the completed Works Authorization signed by the SA Navy or his delegated representative and the Armscor Project Manager or his delegated representative.

5.4.2 The Contractor's official certificate of conformance stating that all tasks are completed in accordance with the provisions of the Order.

6.0 SUBSISTENCE AND TRAVEL AS PER CLAUSE 1.5 ABOVE.

6.1 The intent of this item is to cater for local Subsistence and Travel in accordance with the Armscor rates and conditions applicable at the specific time.

6.2 Supplementary conditions

6.2.1 The Contractor/Subcontractor shall be obliged to make use of Armscor's nominated travel bureau and motor rental service. (Contact numbers 012 428 2034/5/2453 or after hours at 082 554 8764).

7.0 TECHNICAL SUPPORT SERVICES COSTS AS PER CLAUSE 1.6 ABOVE.

The intent of this item is to cater for Technical and support services to be rendered against an approved Works Authorization supported by a quotation.

7.1 Supplementary conditions:

7.1.1 Technical and support services will be approved by Armscor and the SA Navy against a Works Authorization and quotation submitted by the Main Contractor before commencement of any work.

7.2 Conditions of acceptance:

7.2.1 A copy of the completed Works Authorization and approved quotation signed by the SA Navy or his delegated representative and the Armscor Project Manager or his delegated representative.

7.2.2 The Contractor's official certificate of conformance stating that all tasks are completed in accordance with the conditions of the Order.

7.2.3 A Job Card signed by the main contractor, and a SA Navy representative indicating the completion of the task.

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NATIONAL INDUSTRIAL PARTICIPATION (NIP) 2013 GUIDELINES

INDUSTRIAL PARTICIPATION

DEFENCE INDUSTRIAL AND NATIONAL INDUSTRIAL PARTICIPATION REQUIREMENTS, CONDITIONS AND REFERENCE DOCUMENTATION FOR REQUIREMENT: SUBMARINE REFIT SUPPORT CONTRACT

REQUIREMENTS

1. Relevant documents

The following attached documents form an integral part of the Industrial Participation requirements in respect of defence-related acquisition/ procurement programmes:

- | | | |
|------|--|---------------|
| 1.1. | DEFENCE INDUSTRIAL PARTICIPATION (DIP) CONFIRMATION BY
BIDDER FORM – <i>SHALL BE COMPLETED, SIGNED AND SUBMITTED
BY THE <u>BIDDER</u></i> | PART 1 |
| 1.2 | NATIONAL INDUSTRIAL PARTICIPATION (NIP) CONFIRMATION BY
BIDDER FORM – <i>SHALL BE COMPLETED, SIGNED AND SUBMITTED
BY THE <u>BIDDER</u></i> | PART 2 |
| 1.3 | DEFENCE INDUSTRIAL PARTICIPATION (DIP) GUIDELINES
- FOR INFORMATION | PART 3 |
| 1.4. | NATIONAL INDUSTRIAL PARTICIPATION (NIP) GUIDELINES
- FOR INFORMATION. | PART 4 |

IMPORTANT NOTES TO POTENTIAL BIDDERS

- Industrial Participation comprises a Defence Industrial Participation (DIP) portion and National Industrial Participation (NIP) portion. Separate guidelines are provided for DIP and NIP and potential bidders shall adhere to the instructions contained in the documentation.
- Separate “Confirmations by Bidder” (CBB) for both DIP and NIP shall be completed, signed and submitted, as part of the bid.
- The wording of the CBB’s shall not be amended, deleted or altered (including the format) in any way by the bidder, unless so directed by ARMSCOR.
- For the purposes of DIP, “foreign content” in the case of a Foreign Prime Contractor refers to the total value of the bid and in the case of a Local Prime Contractor only to the imported content sub-contracted to foreign sub-suppliers. Foreign Owned, Locally Based South African Contractors are regarded as Foreign Prime Contractors.
- For the purposes of NIP, “foreign content” refers to only the imported content (i.e. excluding local content) of the bid.

Full compliance by signing of both DIP and NIP CBB’s is a Mandatory Criteria and failure to adhere to the conditions above will disqualify the bidder’s bid from further evaluation.



DEFENCE INDUSTRIAL PARTICIPATION (DIP)
DOCUMENTATION FOR
REQUIREMENT: SUBMARINE REFIT SUPPORT CONTRACT
DIP CONFIRMATION BY BIDDER (CBB)
COMPANY NAME:

VERY IMPORTANT NOTES:

1. The purpose of this CBB is to obtain the BIDDER's commitment to perform Defence Industrial Participation (DIP) in terms of Armscor's Policy, when applicable.
2. The wording of this document shall not be amended, deleted or altered in any way or form, unless so directed by ARMSCOR.
3. *The completion, signing and submitting of this CBB by the BIDDER is a pre-condition to further consideration of the bid, regardless of whether the foreign content threshold of USD2 million is reached, or whether there is any foreign content at all.*
4. In the event that the contract is placed on a Foreign Prime Contractor the DIP agreement will be concluded directly between ARMSCOR and the Foreign Prime Contractor.
5. In the event that the contract is placed on a Local Prime Contractor, ARMSCOR, at its discretion, shall conclude the DIP agreement with either the Local Prime Contractor or its foreign Sub-contractor/s if and when DIP is applicable.
6. The BIDDER, if a Local Prime Contractor, shall in addition to completing and signing a CBB, ensure that all its intended foreign Sub-contractors comply with the requirements for DIP.
7. The applicable Rate of Exchange (RoE) for Armscor to determine the USD value of Foreign Content other than USD, will be the average ABSA Bank rate at 11:00 on the closing date of the tender.



I/We, the undersigned, therefore and hereby state the following:

1. **With regard to the foreign content value:**
 - 1.1. The total foreign content value of my/our bid for the supply and delivery of is **USD/€/GBP** (This portion shall be completed regardless of whether the threshold of USD 2 million is reached or exceeded. If there is no foreign content the value must be indicated as zero.)
 - 1.2. With regard to possible options required in the RFO/RFP and/or contained in my/our bid, I/we confirm that the total foreign content value of my/our bid amounts to **USD/€/GBP** (If no options are included indicate as "Not Applicable".)
 - 1.3. It is clearly understood that the DIP Obligation will be at least 50% of the foreign content value mentioned in Para 1.1 and/or Para 1.2 above where the foreign content value of the bid **is equal to, or exceeds USD2 million.**
2. In the event that the foreign content value is equal to, or exceeds USD2 million:
 - 2.1. I/We undertake and confirm that I/we shall discharge at least 75% of the DIP obligation with Local (South African) **BEE Compliant Suppliers (Enterprises that are at least 35% owned by Black people and at least 25% controlled by Black people)**, while at least 25% of the obligation value shall be placed with **Enterprise and Supplier Development (ESD) Beneficiaries which are at least 51% Black Owned.**



- 2.2. I/We confirm that the DIP obligation and commitment shall be consolidated into a DIP Agreement including a Business Plan, to be agreed upon and executed in terms of the conditions contained therein.
- 2.3. With regard to penalties and guarantees:
- 2.3.1. I/We herewith accept and confirm that I/we shall
- be liable to pay a penalty fee equal to **100% of the total outstanding DIP obligation** in the event that I/we do not fulfil the DIP obligation.
- 2.3.2. I/We accept that Armscor reserves the right to impose the requirement for a 100% guarantee/s to be provided and that the guarantee ratio proposed in 2.3.2 above, is still subject to approval by Armscor, based on the bidder's financial risk profile if appointed as successful bidder.
3. When the **successful Bidder** is a **Local Prime**:
- 3.1. I/we confirm that the intended foreign Sub-contractors comply with the requirements for DIP and are willing to conclude DIP AGREEMENT/S with ARMSCOR; and
- 3.2. I/we accept that ARMSCOR shall at its discretion conclude the DIP AGREEMENT/S directly with the **Local Prime**, or its foreign sub-contractor/s.
4. It is fully understood by me/us that proposals to discharge any DIP obligation that may result from this bid will not include any civilian/non-defence related projects and/or services, except DUAL-USE products and/or services as approved and registered by ARMSCOR.

"Dual-use" shall mean those products, technologies and/or services rendered by a company and where such products, technologies and/or services could be used for either defence or non-defence related purposes and the meaning



DUAL-USE, shall include reference to dual-purpose products, technologies and/or services applied in a similar manner to be claimed by SELLER as DIP CREDIT as described herein, and subject to prior approval by ARMSCOR.

5. I/we understand and agree fully that no multipliers whatsoever will be considered by ARMSCOR in determining any form of DIP credit.
6. I/We hereby undertake not to reveal or disseminate any information as contained in this document and subsequent supporting documentation to any party, person or body outside the Ministry of Defence, the Defence Secretariat, the SANDF, ARMSCOR, without the written and express consent of ARMSCOR's DIP Division. In the event that such information is disseminated by me/us prior to the official awarding of the tender, I/we acknowledge that such an event could lead to the disqualification of my/our bid.
7. I/We hereby confirm that I/we understand all the relevant prescriptions of the DIP requirement as contained in the DIP Guidelines, Part 3, and furthermore wish to confirm that my/our full participation in South Africa's Industrial Participation Programme to benefit Local Companies as defined in the DIP Guidelines 2.18, **will not contribute to an increase in our total bid price** and that it is my/our sincere commitment to contribute to achieving the respective DIP objectives of South Africa's Industrial Participation Programme by fully discharging my/our DIP obligation.
8. I/We fully accept that if I/we fail to fully comply with the DIP provisions and requirements as contained in this Industrial Participation Section of the RFB/RFP or/as otherwise stated in/required by this document, such failure shall render my/our bid null and void and shall lead to the disqualification of my/our response, in which case I/we forfeit any right to appeal against such disqualification.



DOCUMENT NO: 02056-950-001

PART 1

DIP DIVISION

This confirmation is completed in accordance with the Industrial Participation Requirements and Conditions of this RFB/RFP and signed by (name) duly authorised to act for and on behalf of the bidder (SELLER) at, (place) on this day of (month) (year) without favour or under influence or duress.

.....
Signature: SELLER / BIDDER

NAME:

DESIGNATION:

COMPANY:

WITNESSES

1. Name:
Signature:

Capacity:

2. Name:
Signature:

Capacity:



NATIONAL INDUSTRIAL PARTICIPATION (NIP)

DOCUMENTATION FOR
 REQUIREMENT: SUBMARINE REFIT SUPPORT CONTRACT
 NIP CONFIRMATION BY BIDDER (CBB)

COMPANY NAME:

VERY IMPORTANT NOTES:

- The purpose of this CBB is to obtain the BIDDER's commitment to perform National Industrial Participation (NIP) in terms of *the Department of Trade and Industry and Competition (the dtic) Policy*, when applicable.
- The wording of this document shall not be amended, deleted or altered in any way or form, unless so directed by *the dtic*.
- *The completion and signing of this CBB by the BIDDER, is a pre-condition to further consideration of the bid, regardless of whether the foreign content threshold of USD10 million is reached, or whether there is any foreign content at all.*
- the NIP CBB needs to be submitted to ARMSCOR as part of the bid.
- the *dtic* shall conclude a NIP agreement directly with the Local or Foreign Prime before the effective date of the "MAIN AGREEMENT".
- The applicable Rate of Exchange (RoE) for Armscor to determine the USD value of Foreign Content other than USD will be the average ABSA Bank rate at 11:00 on the closing date of the tender.



I/We, the undersigned, therefore and hereby state the following:

1. **With regard to the foreign content value:**

1.1 The total foreign content value of my/our bid for the supply and delivery ofis

USD/€/GBP (This portion must be completed regardless of whether the threshold of USD 10 million is reached or exceeded. If there is no foreign content the value must be indicated as zero.)

1.2 With regard to possible options required in the RFB/RFP and/or contained in my/our bid, I/we confirm that the total foreign content value of my/our bid amounts to **USD/€/ GBP (If no options are included indicate as “Not Applicable”)**

1.3 It is clearly understood that the NIP Obligation will be at least 30% of the foreign content value mentioned in Para 1.1 and/or Para 1.2 above where the foreign content value of the bid **is equal to, or exceeds USD10 million.**

1.4 The National Industrial Participation (NIP) portion is to be administered and controlled by the Department of Trade and Industry and Competition (***the dtic***) of South Africa.

1.5 The application of NIP in terms of the “Value-Threshold” as stated the NIP Guidelines (2013 Version, page 13, Section 3) is fully understood and conveyed as such to the intended foreign sub-contractors.

2. In the event that the foreign content value is equal to, or exceeds USD10 million:



- 2.1 I/We confirm that the NIP obligation and commitment shall be consolidated into a NIP Agreement to be agreed upon before the effective date of the Main Agreement, to be executed in terms of the conditions contained therein and undertake, if so required, to reveal to **the dtic** our co-investors (if any) in the NIP project(s) tendered.

- 2.2 I/We herewith confirm that I/we shall provide a **bank guarantee as per Appendix A, to the value of 5% of the total NIP obligation** in order to cover our NIP obligation and withdrawals against this guarantee shall be proportional to my/our outstanding NIP obligation and/or against contracted milestones for discharging my/our NIP obligation.

- 2.3. It is understood that I/we shall be liable to pay a penalty fee equal to 5% of the total NIP obligation in the event that I/we do not fulfil our NIP obligation.

- 2.4 I/We herewith confirm that it is fully understood by me/us that our NIP commitment does not and shall not duplicate any DIP – related activities.

3. I/We hereby undertake not to reveal or disseminate any information as contained in this document and subsequent supporting documentation to any party, person or body outside the Ministry of Defence, the Defence Secretariat, the SANDF, ARMSCOR, without the written and express consent of **the dtic**. In the event that such information is disseminated by me/us prior to the official awarding of the tender, I/we acknowledge that such an event could lead to the disqualification of my/our response/proposal.

4. I/We hereby confirm that we understand all the relevant prescriptions of the NIP requirement as contained in the NIP guideline, Section 4, and furthermore confirm that my/our full participation in South Africa's Industrial Participation Programme will not contribute to an increase in our total Tender Price and that it is my/our sincere commitment to contribute to achieving the respective NIP objectives of South Africa's IP Programme by fully discharging my/our NIP obligation.



5. I/We fully accept that if I/we fail to fully comply with the NIP provisions and requirements as contained in this National Industrial Participation Section of the RFB or as otherwise stated in/required by this document, such failure might render my/our tender null and void and would lead to the disqualification of my/our response, in which case I/we forfeit any right to appeal against such disqualification. I/We fully accept that neither ***the dtic*** nor the DOD will be under any obligation to give any reason for such a decision.

This confirmation is completed in accordance with the National Industrial Participation Requirements and Conditions of this RFB and signed by (name) duly authorised to act for and on behalf of the bidder (SELLER) at, (place) on thisday of (month) (year) without favour or under influence or duress.

.....

Signature: SELLER / BIDDER

NAME:

.....

DESIGNATION:

.....

COMPANY:

.....

WITNESSES

1. Name:

.....

Signature

Capacity:

2. Name:

.....

Signature

Capacity:



APPENDIX A

DRAFT NIP BANK GUARANTEE

(For information only)

Place and Date _____

BENEFICIARY:

(Details of the *dtic* to be inserted)-(hereinafter referred to as "the *dtic*")BANK GUARANTEE NO: ISSUED AS OFFICIAL ANNEX TO THE
NIP AGREEMENT:-

Dear Sirs

1. Reference is made to the agreement concerning the purchase of _____ as defined in the MAIN AGREEMENT and certain obligations for national industrial participation entered into by and between *the dtic* (hereinafter referred to as the "BENEFICIARY"), on the one side, and _____ (hereinafter referred to as the "SELLER"), on the other side.
2. The SELLER shall provide the BENEFICIARY with a Bank Guarantee covering the amount of USD/€/GBP.....(.....), being totally 5% (five per cent) of the total NIP obligation as a security for the due and full performance of the SELLER's NIP commitment (hereinafter referred to as "COMMITMENT") against the respective Milestones as referred to in the NIP AGREEMENT (hereinafter referred to as the "AGREEMENT").
3. In view of the foregoing and at the request of the SELLER, we (name and address of the issuing Bank) _____ (hereinafter referred to as the "GUARANTOR"), hereby irrevocably and, subject to the terms set forth herein, unconditionally guarantee to pay to the BENEFICIARY on their first demand as more precisely specified below, irrespective of the validity and the effects of the AGREEMENT mentioned above, waiving all rights of objection and defence arising there from, any amount up to the



maximum amount of USD/€/GBP _____ (USD/€/GBP in words), in the event that in the sole judgement of the BENEFICIARY the SELLER has failed to perform any of his COMMITMENT under the AGREEMENT.

4. We undertake to make payment under this guarantee upon receipt by us of the BENEFICIARY's first written demand for payment, purportedly signed by their duly authorized Officer(s) declaring that the SELLER has failed to perform his COMMITMENT under the AGREEMENTS and specifying the amount to be released and the portion concerned.
5. We, the GUARANTOR, acknowledge that the BENEFICIARY shall be entitled to demand payment under this guarantee, and that the BENEFICIARY shall be entitled to demand payment on one or more occasions, but always subject to our total maximum aggregate liability under this guarantee and never exceeding the maximum amount specified in paragraph 3 above.
6. The GUARANTOR's maximum aggregate liability under this Guarantee shall be reduced over the lifetime of the AGREEMENT upon delivery to the GUARANTOR by the BENEFICIARY of applicable/corresponding Certificate(s) (in the forms attached as Annexure 1 hereto) specifying the amount to be reduced. Furthermore, the total maximum amount available under this guarantee will automatically be reduced by any payment effected by us hereunder in settlement.
7. This guarantee will expire automatically and in full either a) once its amount has been reduced to NIL, or; b) on _____, regardless of such date being a banking day or not and regardless of whether the original is returned to us or not, whichever occurs first.
8. We hereby consent that any renewals, changes and modifications of the MAIN AGREEMENT which subsequently cause or result in an amendment of the AGREEMENT, which are made without notice to us, shall not discharge us from any liability under this guarantee in whole or in part.



9. This guarantee is not yet in force. It shall come into force upon receipt by us, not later than _____, of a written confirmation, duly signed by the BENEFICIARY and the SELLER, making reference to this guarantee No. _____ and stating that the MAIN AGREEMENT has become effective in accordance with its terms. The coming into force will be communicated by the GUARANTOR to the BENEFICIARY by means of an amendment under this guarantee. Should the aforesaid confirmation not be in our possession before _____ at the latest, this guarantee will be null and void with immediate effect.
10. We, the GUARANTOR, hereby represent and warrant that:-
- i. we are a bank duly organised and validly existing and in full compliance with the laws of _____ and have full legal right, power and authority to execute this guarantee and to perform our obligations hereunder; and
 - ii. we have taken all appropriate and necessary corporate actions to authorise the issuing of this guarantee;
 - iii. this guarantee constitutes our legal, valid and binding obligations enforceable in accordance with its terms; and
 - iv. no governmental consents, approvals and authorisations are presently required in connection with the validity and enforceability of this guarantee.
11. This guarantee shall be governed by and construed in accordance with the laws of the Republic of South Africa, and the place of jurisdiction is Pretoria.

.....
 (Name of the issuing Bank)



| DIP GUIDELINES |

This document serves as a guideline only and the content is subject to change without prior notice and will not be binding on ARMSCOR, the DOD and *the dtic*.

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1. **SCOPE**

This document provides the background on military and defence industrial strategic considerations as well as the environment in which defence industrial participation is to be undertaken to enable the Bidder to understand the Defence Industrial Participation (DIP) Policy of the Republic of South Africa (RSA).

2. **DEFINITIONS AND ABBREVIATIONS**

2.1 **AMMUNITION** is a generic term for munitions of war and includes all missiles and devices used for defence and offence against an enemy. In its broadest sense it may be defined as:

2.1.1.1 Any container that is filled with an explosive, propellant, incendiary, smoke, nuclear, chemical or pyrotechnic composition or liquid.

2.1.1.2 Any of the above mentioned energetic compositions or liquids in bulk.

2.1.1.3 Any non-explosive component, part or unfilled container of paragraphs 2.1.1.1 and 2.1.1.2 mentioned above.

2.1.1.4 Any non-explosive replica of paragraphs 2.1.1.1 and 2.1.1.2 mentioned above.

2.2 **ARMAMENTS** are defined as any vessel, vehicle, aircraft, ammunition and weapon system, and also substances, materials, raw materials, components, equipment systems, articles, know-how, techniques or devices, that are designed, modified or adopted to be utilised to equip, maintain or support security operations; or which are used in the Acquisition of such armaments.

- 2.3 **BROAD BASED BLACK ECONOMIC EMPOWERMENT (BBBEE)** means the empowerment of Black People as defined in South Africa's BBBEE Act and Armscor's A-POL-4000.
- 2.4 **BENEFICIARY** is a **LOCAL COMPANY** (2.18 below) with at least 35% black equity ownership, which benefits directly or indirectly from **DIP**. It excludes agents and non-value adding representatives of such companies. **DIP BENEFICIARIES** will comply with the requirements of the Defence Sector Code as published by the Minister of Trade and Industry on 2 October 2018. Business conducted with **LOCALLY BASED COMPANIES** (2.19 below) will not be eligible for the awarding of credits.
- 2.5 A **BEE COMPLIANT SUPPLIER** means an enterprise that complies with the the requirements of the Defence Sector Code with regard to, amongst others but not limited to, Ownership, Management Control, Skills Development and Enterprise and Supplier Development. Ownership refers to economic interest, while management refers to executive directors/members.
- 2.6 A **BLACK CONTROLLED/OWNED ENTITY** means a juristic person, having shareholding or similar members' interest that is black controlled, in which black participants enjoy a right to an Economic Interest that is at least 51% of the total, such rights measured using the Flow Through Principle.
- 2.7 **CATEGORY 1 MATÉRIEL** means matériel designed and developed for military use or conforming to military specifications. The distinguishing characteristic between different categories of matériel is found in the ownership of the specification. The system may consist of items that are not commercially available, and integrated for use in the military operational environment. Category 1 matériel may consist of both military unique and commercial parts. Military requirements and the DOD acquisition authority direct the acquisition of Category 1 matériel.

- 2.8 **COTS** (commercial-off-the-shelf) means an item that has been developed, produced and tested to commercial standards and specified environmental conditions.
- 2.9 **DIP** (Defence Industrial Participation) means a Government-initiated process whereby Defence acquisition and procurement is used as a leverage to oblige a foreign **SELLER** of Defence related equipment and services to reciprocate Defence-related business in SA in order to advance military strategic and Defence-related industrial imperatives. **DIP** refers to the obligation placed on a **FOREIGN COMPANY**, either as prime contractor, or as subcontractor to a local prime contractor, by means of a **DIP** Agreement, to reciprocate business in SA. **DIP** is a consequence of Defence acquisition from a foreign source and is aimed at benefiting **LOCAL COMPANIES** (2.4 above and 2.18 below) in the SA Defence- related industry.
- 2.10 **“the dtic”** means the Industrial Participation (IP) Secretariat of the Department of Trade and Industry and Competition responsible for the NIP portion of the tender.
- 2.11 **EXEMPT MICRO ENTERPRISE (EME)** means an enterprise with an annual turnover of R5 million or less.
- 2.12 **ENTERPRISE AND SUPPLIER DEVELOPMENT (ESD) BENEFICIARIES** means **EME**’s and **QSE**’s which are atleast 51% black owned or 51% black women owned.
- 2.13 **FOREIGN COMPANY / ENTERPRISE** means an Entity that is incorporated outside the borders of South Africa whether or not it carries on business in South Africa and has the potential to attract DIP obligation under this Policy.
- 2.14 **FOREIGN CONTENT** means the monetary value of the portion of the offered price represented by the cost of components, materials, parts, skills and manpower that have been manufactured or made or produced or originate

outside the borders of South Africa, which is used to determine the DIP obligation value.

- 2.15 **IMPORTED CONTENT** means the monetary value of the difference between the **FOREIGN CONTENT** and the **LOCAL CONTENT**, which difference is used to determine the **DIP OBLIGATION**.
- 2.16 **INDUSTRIAL PARTICIPATION** is a generic term for reciprocal business conducted in South Africa by foreign companies as a result of Government orders placed with them. It is the generic term used to refer to the total content of **DIP** and **NIP**.
- 2.17 **IOBL** (Initial Operating Baseline) means the minimum essential logistic performance level to be achieved for releasing a system into service and forms part of the overall process to establish an Operating Baseline (OBL) as a result of the Commissioning Phase. (Source: RSA-MIL-STD-4 Issue 3)
- 2.18 **LOCAL COMPANY** means an enterprise with 51% or more equity ownership by South African citizens, registered in the Republic of South Africa and paying tax to South African Revenue Services.
- 2.19 **LOCALLY BASED COMPANY / ENTERPRISE** is a foreign owned company (51% owned by foreigners) based and registered in South Africa, which could attract a DIP Obligation under the DIP Policy.
- 2.20 **LOCAL CONTENT** means monetary value of the portion of the Contract price represented by the cost of components, materials, parts, skills and manpower that have been manufactured or made or produced or originate in South Africa, rather than imported.
- 2.21 **LOCALISATION** is the process of adapting product or content to a specific locale or market.

- 2.22 **MAIN AGREEMENT** means the agreement or purchase contract concluded between Armscor and the Seller for the supply of goods/services, and which places the Seller under a DIP and NIP (where applicable) obligation.
- 2.23 **MOTS** (military-off-the-shelf) means all materiel procurable for military use, which is readily available off-the-shelf or may readily be manufactured against an existing military specification.
- 2.24 **NIP** (National Industrial Participation) means the process prescribed in the National Industrial Participation Policy, which is administered separately by the Department of Trade and Industry and Competition (*the dtic*) in accordance with its own rules and procedures and which concentrates on civilian (non-defence) projects.
- 2.25 **QUALIFYING SMALL ENTERPRISE (QSE)** means an entity that qualifies for measurement under the Qualifying Small Enterprise Scorecard with a turnover of R5 million or more but less than R50 million.
- 2.26 **SELLER** means the party defined as seller in any main agreement and subsequent DIP Agreement between Armscor and any main defence contractor who becomes liable to supply the products/services to Armscor and to perform the DIP and NIP (where applicable) obligation. Also referred to as the “Obligor” when DIP and NIP is applied.
- 2.27 **SOUTH AFRICAN DEFENCE INDUSTRY (SADI)** which is a collective term for South African Defence Industries and means those Entities in the public and private sector, including commercial companies and business units of such Entities, which are directly or indirectly active in the design, research, development, manufacture and marketing of Defence Matériel.

2.28 **SPECIALISED ENTERPRISE** means an enterprise that cannot be measured on ownership, e.g. higher education institutions, public entities and enterprises wholly owned by organs of State.

2.28 **USD** means United States Dollars, or any other monetary equivalent thereof.

3. **INTRODUCTION**

3.1 The Constitution of the Republic of South Africa states that the primary object of the South African Defence Force (SANDF) is to defend and protect the Republic, its territorial integrity and its people, in accordance with the Constitution and the principles of international law regarding the use of force. In terms of the Defence White Paper, the SANDF shall maintain a modern, technologically advanced core force.

3.2 Defence and/or security-related acquisition and procurement programmes are specifically focused to provide suitable armament to the SANDF and/or South African Police Services (SAPS)/Security Services. Retaining, maintaining and developing appropriate skills, abilities and capabilities in the RSA's local defence related industry is of the utmost importance in order to be able to maintain, upgrade and optimize technologically advanced defence equipment. Major defence procurement projects require an appropriate industrial capacity needed for sustainable support of the SANDF and in some cases the South African Police Services (SAPS)/Security Services.

3.3 This approach recognises that life-cycle support of equipment is integral to all stages of planning and decision-making and is as such considered when developing an acquisition strategy and project programme for each major project. The Department of Defence is thus responsible for timing such projects to improve continuity and to encourage the sustained ability of high-priority skills in an effort to maintain the readiness and capability of all the Security Cluster.

- 3.4 The Department of Defence (DOD) is an extremely important client of the defence industry, thus, most of the products produced by the industry are developed to the specific requirements of the SANDF. The DOD funds a large portion of research and development spending in the defence industry and owns much of the immaterial rights of the products manufactured locally. The DOD also contracts a large portion of the logistic and operational support of its equipment to the local defence industry. The technology, know-how and capacity for maintaining of weapon systems and supplying of services such as informatics, command and control, etc., reside within the industry.
- 3.5 Defence Industrial Participation (DIP) is the process whereby major acquisitions of the Security Cluster (where Armscor is involved in the process) are used as a leverage to oblige a seller of imported defence/security commodities/service, either complete systems or subcomponents, to do defence/security-related business in South Africa, on a reciprocal basis in order to advance militarily/security strategic and defence-related industrial imperatives.
- 3.6 The primary intent of **DIP** is a contribution to the sustainability of the **SADI** and enhancement and expansion of defence industrial capabilities in support of self – reliance and – sufficiency, i.e. the SANDF's mandate to protect the sovereignty of South Africa.

4. **OBJECTIVES**

- 4.1 DIP shall be applied in such a manner that it contributes to independence and self-reliance, as far as is practically possible, with regard to the maintenance and advancement of South Africa's defence industrial capabilities and addresses specific defence strategic objectives, such as:
- a) Contribution to the retention and, the creation of jobs, abilities, skills and capabilities in the defence environment;
 - b) Contribution to the sustainability of local defence companies with strategic logistic support capabilities;

- c) Increasing defence exports of value-added goods and services;
- d) Facilitating access to new markets, and establishing new trading partners;
- e) Promotion of like-for-like technology transfers and joint ventures, and encouraging foreign investment in the defence-related industry;
- f) Contribution to the maintenance of skilled indigenous design, development and manufacturing capabilities;
- g) Contribution to the development of human resources in the defence environment;
- h) Promotion of small, medium and micro enterprises and Black Economic Empowerment participation in the defence industry and military veterans; and
- i) Contribution to the minimisation of the outflow of foreign reserves on Defence purchases.

4.2 The consolidated **DIP** proposals, contained in the **DIP** Business Plan, to be negotiated and agreed upon, will be based on requirements within the defence/security-related industry to provide for a strategic design, development and manufacturing capability, logistical support and upgrade capability for a technologically advanced and modern defence force, its doctrine and posture.

4.3 A **SELLER** will actively demonstrate the achievement of the **DIP** objectives by means of dedicated reporting as agreed with Armscor. To this end the **SELLER** must ensure that local **BENEFICIARY** companies are willing to provide the required information to substantiate such achievements.

5. DIP PRINCIPLES

In executing **DIP**, the DIP Division shall always consider and apply the following principles:

5.1 Causality

Causality means that the seller must demonstrate, to the satisfaction of Armscor, that **DIP** activities are/were caused by the seller as a direct result of a **DIP** agreement and as a direct result of the seller's involvement. In other words, the seller would not have initiated or participated in a **DIP** activity had it not been for the **DIP** programme or a condition of the main agreement. There must be a clearly identifiable link between the **DIP** obligation, the seller and the **DIP** activity.

5.2 Additionality

All **DIP** activities, except where strategic capabilities are transferred, must reflect incremental and/or new export business in order to be considered for **DIP** credits. Existing business, completed projects or any activity preceding the effective date of the **DIP** contract will not be considered for **DIP** credits unless credits were banked under a valid Pro-active agreement. Investment or joint venture **DIP** activities only qualify if they are either new facilities or the expansion of existing facilities. Investment in existing facilities should demonstrate, to the satisfaction of Armscor, the added benefit accruing from such investment. Export **DIP** activities only qualify if it is a case of either new products or existing products introduced into new markets (new country or new customer), or follow-on orders in which the seller has demonstrably played a role in securing the follow-on order.

5.3 Sustainability

DIP activities must contribute to the economic and operational sustainability of **LOCAL COMPANIES** (2.18 above) in the **SADI** and must support the objectives of the MoD, i.e. defence industry strategies regarding local availability of capabilities.

5.4 Price

Application of **DIP** must not add to the price of Acquisition or Procurement in order to contribute to cost-effective solutions to the client's requirements.

5.5 Mutual benefit

In order to enhance sustainable business, the **SADI's** competitiveness and the SA economy in general, the Policy recognises that **DIP** activities, in addition to benefitting **LOCAL COMPANIES** in the **SADI**, may also be to the mutual benefit of the **SELLER**.

5.6 Core business

DIP activities will mainly be in the **SELLER's** area of expertise and will relate to the core business of the local **BENEFICIARY**.

6. **DIP THRESHOLD APPLICATION AND CALCULATION**

[NOTE: Rate of Exchange – Any foreign currency other than USD, will be converted to USD at the average ABSA Bank rate at 11:00 on the closing date of the tender.]

The **DIP** Threshold of USD2 million for application of 50% **DIP** is determined in any of the following manners:

6.1 **Foreign and Locally Based Companies/Enterprises Prime Contractor**

- Any single Main Agreement of which the **IMPORTED CONTENT** of the Contract/order value, i.e. excluding **LOCAL CONTENT** exceeds USD2 million;

- Multiple Main Agreements concluded within two years of completion of first or previous orders, within the framework of a specific project or across different projects, for same and/or similar products or services, awarded to the same Seller of which the aggregate value of the **IMPORTED CONTENT** exceeds USD2 million;
- Extensions or amendments to the Main Agreement within the active life of the agreement, which result in the aggregate **IMPORTED CONTENT** value of the project exceeding USD2 million; and
- Where multiple Sellers are used to address a single Defence Acquisition for the same products or services and the value of the **IMPORTED CONTENT** in total, exceeds USD2 million, each Seller shall incur pro-rata 50% of the total DIP Obligation.

NOTE: For the purposes of determining the DIP Obligation, LOCALLY BASED COMPANIES (as defined in 2.19 above), are considered to be Foreign Prime Contractors.

6.2 Local Prime Contractor with Foreign Sub-contractors

- The **IMPORTED CONTENT** of any single foreign sub-contract equal to, or above USD2 million;
- Aggregate value of the **IMPORTED CONTENT** of Multiple sub-contracts to different sub-contractors for same or similar products/services, equal to, or above USD2 million;
- Aggregate value of the **IMPORTED CONTENT** of increases to either of the above as a result of amendments to the sub-contracts equal to, or above USD2 million;
- Aggregate value of the **IMPORTED CONTENT** of additional, future orders (either through sub-contracting, or directly) for same or similar

products/services related to the original contract, within two years of completion of the original contract, equal to, or above USD2 million.

6.3 **Local Suppliers/Agents of Foreign Items**

Where a **LOCAL COMPANY** is itself a supplier or agent for supplying foreign items, or sources such foreign items from other local suppliers/agents, the **IMPORTED CONTENT** of such items will be taken into account to determine the **DIP** obligation.

NOTE: Armscor reserves the right to verify any information in this regard by means of an audit.

7. **ACHIEVEMENT OF DIP OBLIGATION**

7.1 In the case of a Foreign Prime, the **DIP** Agreement will be concluded with the Foreign Prime, but in the case of a Local Prime the **DIP** Agreement will be concluded with either the Local Prime, or the Foreign Sub-contractor/s at the discretion of Armscor.

7.2 All **DIP** activities will be of a Defence-related nature and will be directed exclusively at Defence-related companies, regardless of whether the **MAIN AGREEMENT** relates to commercial equipment and products.

7.3 In consideration of DIP proposals by Obligors, Armscor may prescribe DIP Beneficiaries to Obligors.

7.4 **DIP Categories and Activity Types**

The obligation can be achieved through either Direct (Activities directly related to the **MAIN AGREEMENT**) or Indirect (Other goods & services) **DIP**.

The followings activities or a combination thereof will be considered for the achievement of the **DIP** obligation:

- Technology Transfer (TT);
- Investments or Loans;
- Joint Ventures;
- Local Industrial participation (DDIP); and
- Export Sales (IDIP)

NOTE: Technology Transfer: The value and benefit of TT must be demonstrated through corresponding business emanating directly from the TT

7.5 **BBBEE Requirements**

7.5.1 To support Governments endeavours to promote the transformation of the **SADI**, all activities proposed to discharge the obligation value must be allocated to **BEE COMPLIANT-** (2.5) and/or **BLACK CONTROLLED/OWNED ENTITY** (2.6) and/or **ESD BENEFICIARIES** (2.12), either through direct contracting, or through sub-contracting.

7.5.2 For the purposes of **DIP**, activities directed at **SPECIALISED ENTERPRISES** would qualify as **BBBEE** activities.

7.5.3 At least 25% of the obligation will be discharged by directing activities at **ESD BENEFICIARIES**.

8. **NON-PERFORMANCE AND PENALTIES**

8.1 Non-performance against the planned discharge of an obligation is subject to a 100% penalty against the outstanding portion of the obligation;

8.2 For this purpose, the obligor will provide Armscor with an acceptable guarantee, or acceptable guarantees to the value of 100% of the obligation value. A proportional combination of a first demand bank guarantee, or insurance guarantee and a corporate guarantee, subject to Armscor's approval, may be acceptable;

- 8.3 Progressive reduction of the guarantee value will take place in line with performance against contracted milestones, but the balance must at all times cover the outstanding value of the obligation.

9. **DEPARTMENT OF DEFENCE STRATEGIC NEEDS**

- 9.1 As defined and provided by the Project if applicable.

10. **LOCAL DEFENCE INDUSTRY REQUIREMENTS**

- 10.1 Armscor may require a **SELLER** to participate in activities to support and establish sustainable capabilities to enhance self-sufficiency and self-reliance in areas of strategic importance. Such activities will be defined by the Project Team in either the RFB or in the phase leading up to the conclusion of the **DIP** Agreement.

11. **THE EVALUATION PHILOSOPHY**

- 11.1 Compliance to the requirement for **DIP** and **NIP** is a **mandatory criterion** in the evaluation process.

11.1.1 **Mandatory criteria**

The bidder must comply to the requirements for DIP and NIP by duly completing, signing and submitting the following two documents with its bid, thereby committing to the conditions stated in said documents:

- “Defence Industrial Participation Confirmation by Bidder” (Part 1)
- “National Industrial Participation Confirmation by Bidder” (Part 2)

12. THE EVALUATION METHODOLOGY**12.1 Mandatory elements as per par 11.1.1**

During the evaluation of tenders, compliance to the Mandatory Criteria stated in 11.1.1 above will be indicated by a statement of either “Yes” or “No” and if “No”, the tender will be excluded from further evaluation.

SOURCE REFERENCES

1. Armscor DIP Policy

IMPORTANT NOTE

The information contained in this document serves as a guideline only: It will not be binding on ARMSCOR or the MOD/DOD and is subject to amendments without prior notice.

The National Industrial Participation (NIP)

Revised Guidelines 2013



the dti

Department:
Trade and Industry
REPUBLIC OF SOUTH AFRICA





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Foreword



Public procurement is widely regarded as one of the principal policy instruments to deepen and expand industrial and economic activity within both developing and developed countries. The extent to which this policy instrument can be leveraged in support of the domestic manufacturing sector is indicated by the fact that in 2012 public procurement amounted to R236,654 billion and constituted 7.4 percentage points of gross domestic product (GDP).

Over the past 15 years, public infrastructure investment by government departments and state-owned companies (SOCs) has been a key driver of investment in South Africa. In 2012, Government adopted a National Infrastructure Plan, which falls under the Presidential Infrastructure Co-ordinating Committee (PICC), and in terms of which public infrastructure investment is projected to be R827 billion over three years, commencing in 2013.

These investments will improve access by South Africans to healthcare facilities, schools, water, sanitation, housing and electrification. Investment in the construction of ports, roads, railway systems, electricity generation and dams will help unblock existing economic development constraints and stimulate faster economic growth.

Recently, a significant portion of public procurement has led to high levels of imports, in some instances without due regard for the need to secure and stimulate domestic manufacturing capacity and increase competitiveness. It is estimated that this figure was R150 billion in the 2010/11 financial year. However, over the last few years, Government has sought to reverse this trend by designing and implementing a set of interlocking and mutually supportive public procurement instruments to support localisation. These are:

- Amended Regulations of the Preferential Public Procurement Finance Act (PPPFA) that enable the Minister of Trade and Industry to designate sectors for local procurement to a defined threshold. The regulations also enable state institutions to stipulate localisation requirements in tender specifications not designated by the Minister. Clause 9.3 of the amended regulations enables all state departments and entities to design and adjudicate tenders enshrine localisation objectives; and
- The adoption in 2007 of localisation and supplier development through the Competitive Supplier Development Programme (CSDP), which applies to the procurement programmes of SOCs and designed to increase the competitiveness, capacity and capabilities of the local supplier base. The period since 2007 has witnessed substantial progress in the roll-out of this programme in some SOCs.

Further impetus was provided to the drive to support domestic manufacturers in the form of the Procurement Accord, which was adopted in 2011 and commits all the social partners – Government, business, labour and the community constituency – to support localisation.

A further strengthening of the procurement lever was effected in December 2012, when Cabinet approved a revised NIP policy. The Revised Guidelines provide practical effect to Cabinet's decision and are designed to update and strengthen the NIP and align it with the suite of other procurement instruments as well as maintain its core principles and objectives.

The NIP places a statutory obligation on the suppliers of goods and services to Government, that have an imported content of \$10 million and above, to participate in domestic economic activity, by supporting the productive sectors of the economy through any or a combination of investment; export sales, research and development, technology transfer and transformation of the domestic economy, with special emphasis on the manufacturing sector.

The Revised Guidelines have been issued by the Department of Trade and Industry (**the dti**) and are binding on all government departments, spheres of Government and SOCs, unless so exempted by **the dti** under the terms and conditions set out.

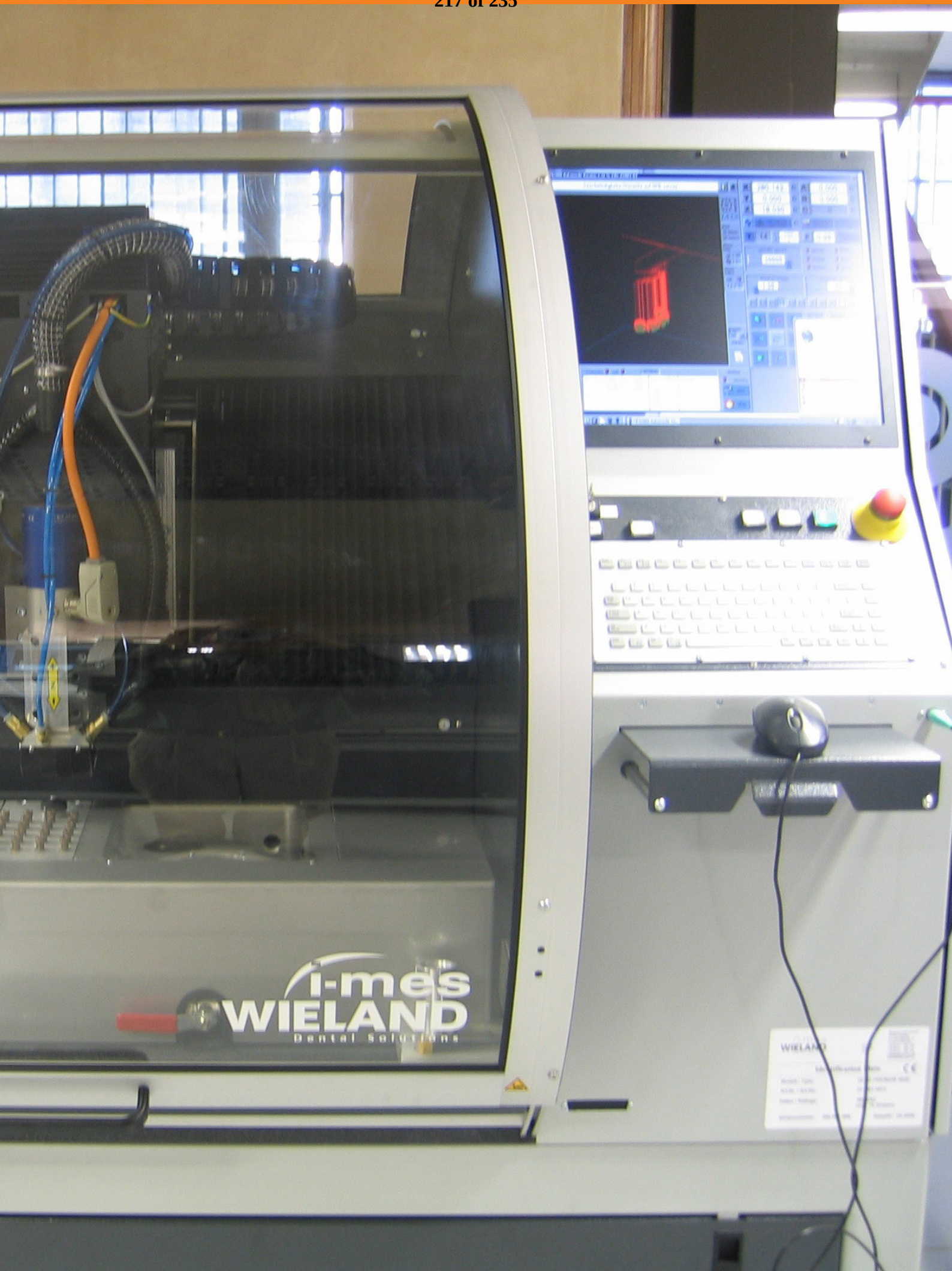
The revised NIP policy, together with other procurement policy instruments, is designed to support the production sectors of the economy, with special emphasis on the value-adding, tradable manufacturing sectors. The revised NIP policy is based on lessons learned through implementation of the NIP, and has been the subject of extensive research and significant and ongoing engagement with the private sector.

There has been a sea-change, with respect to the quantity and quality of the procurement instruments that Government has brought to bear in support of the production sectors of the economy as well as the impact of these instruments. Although more needs to be done, I have no doubt that these instruments have had a positive impact and am confident these new measures will further contribute to providing support for the domestic economy and the shared perspective of growing the economy, creating employment and fighting inequality.

I wish to thank all those companies that have participated as NIP partners and those who have assisted in the process to strengthen the Revised Guidelines.

A handwritten signature in black ink, appearing to read 'R. Davies', with a large, stylized loop at the top and a long, sweeping underline.

Dr Rob Davies, MP
Minister of Trade and Industry



LIST OF ACRONYMS

APDP	Automotive Production Development Programme
B-BBEE	Broad-Based Black Economic Empowerment
BEE	Black Economic Empowerment
CSDP	Competitive Supplier Development Programme
CSP	Customised Sector Programme
CSIR	Council for Scientific and Industrial Research
FDI	Foreign Direct Investment
FET	Further Education and Training
ICT	Information and Communication Technology
IDC	Industrial Development Corporation
IPAP	Industrial Policy Action Plan
IPCC	Industrial Participation Control Committee
IPS	Industrial Participation Secretariat
LED	Local Economic Development
MIDP	Motor Industry Development Plan
NECSA	Nuclear Energy Corporation of South Africa
NEF	National Empowerment Fund
NGO	Non-Governmental Organisation
NIPF	National Industrial Policy Framework
NIPP	National Industrial Participation Programme
NIP	National Industrial Participation
NQF	National Qualifications Framework
PPPFA	Preferential Procurement Policy Framework Act
OEM	Original Equipment Manufacturer
R&D	Research and Development
SA	South Africa
SAA	South African Airways
SADC	Southern African Development Community
SAQA	South African Qualifications Authority
SATS	the South African Technical Specification
SDP	Supplier Development Programme
SETA	Sector Education and Training Authority
SMME	Small, Medium and Micro Enterprises
SOC	State-Owned Company
the dti	The Department of Trade and Industry
ZAR	South African Rand

DEFINITIONS

The following definitions and interpretations apply to the National Industrial Participation (NIP) programme and may not necessarily carry the same meaning as used internationally or elsewhere.

Direct NIP

Direct NIP refers to local manufacture, value-addition and related services projects that are directly related to the sector or industry from which the public sector procurement contract originates. Direct NIP is the overwhelmingly preferred method for fulfilling industrial participation obligations, particularly in those sectors considered strategic for the country's industrial development objectives and as set out in successive iterations of the IPAP as well as the New Growth Path (NGP).

A clear case setting out why direct NIP cannot be utilised in any particular instance will inform any exemption in this regard.

Indirect NIP

Indirect NIP refers to local manufacture and services projects unrelated to the sector or industry from which the public procurement contract originates. Indirect NIP is not the preferred method for fulfilling industrial participation obligations. Indirect NIP should only be applicable to those areas of public sector procurement where there is neither the capacity nor capability – or reasonable expectation that such capacity and capability could be developed – to support long-term industrial development, but for which there is significant expenditure by public entities. Indirect NIP may only be used under the following conditions:

- (i) To leverage obligations arising from the services industry [leasing contracts and consulting services];
- (ii) To create market access opportunities; and
- (iii) To facilitate access to small-scale capital.

Fleet Procurement

Fleet procurement refers to a programme of procuring capital equipment extending over a longer period, usually a 10 to 15-year procurement programme that involves a relatively long projected working life for which it is essential to maintain an operation or service.

The CSDP and fleet procurement levers overlap and “co-exist” with designation and will be managed accordingly. For this reason, procuring entities are obliged to indicate in their tender documents the procurement lever that is applicable for each tender, and notify the dti and DPE of such a stipulation.

NIP Credit

A factor used to adjust the transaction value of NIP-related financial transactions for purposes of determining and measuring the performance of NIP projects. NIP credits may be used to either reduce the NIP obligation or be banked for use in the fulfilment of any future NIP obligations.

Local Sales

Local sales refer to the value of sale of goods and services generated by NIP projects for purposes of fulfilling NIP obligations. Sales to countries within the Southern African Customs Union (SACU) are considered to be local sales.

Export Sales

Export sales refer to the value of sale of goods and services generated by NIP projects for purposes of fulfilling NIP obligations. This definition relates to sales outside of SACU. For the purposes of calculating NIP credits, a formula $[1 + \text{local content}]$ is used, where export sales is a result of the obligor investment in the NIP project, while a formula $[\text{local content} \times 2]$ is used where market access is the only role of the NIP obligor in the project.

Value Added

Value addition refers to the activities that contribute to the variation of product shape, form, use and monetary value and have changed through some value-added process, e.g. software reconfiguration, software integration, assembly or manufacturing process. Sales and Marketing activities or any other similar type of services are not considered for NIP credits.

Local Content

Local content means the total tender price less the imported content. It is expressed as a percentage of the total price of a product, taking into account the cost of each of the components that are used in the manufacture of such product, and is calculated in accordance with the South African Technical Specification [SATS 1286:2011].

Imported Content

Imported content is defined as that portion of a tender price represented by:

- (a) The cost of imported components; and
- (b) The cost of parts or materials that have been or are still to be imported (whether by the suppliers or the supplier's subcontractors or any other third party), the cost of which is inclusive of the costs incurred abroad, plus freight and other importation costs.

Investment

Investment is classified as the amount of capital, whether in the form of equity or loan financing, injected into the project or business, for the purposes of buying assets and other set-up costs. For NIP purposes, investment is classified under the following categories:

- (i) Greenfield investment: Business ventures where capital is employed to create new "start-up" facilities for a business in a location where there are no existing facilities of the same type owned by the obligor.
- (ii) Brownfield investment: Business ventures where existing facilities are purchased for the purposes of introducing new products, services or expanding the facility to provide for an increase in product or service demands. This includes investment that is aimed at upgrading facilities for purposes of increasing competitiveness and access to new markets.

Job Creation

Job creation refers to the number of new direct jobs that are created or the number of jobs retained as a result of the NIP project. In the case of jobs retained, the onus is on the NIP obligor to prove that jobs would have been lost had it not been for its involvement in the project. The number of persons employed (reflected concretely in the amount paid for salaries and wages) is used in calculating NIP credits.

State-Owned Company (SOC)

A SOC refers to an enterprise that is registered in terms of the Company's Act [Act No. 3 of 2011 as amended] as a company, and either:

- (a) Falls within the meaning of state-owned enterprise (SOE) in terms of the Public Finance Management Act, 1999 (Act No. 1 of 1999); or
- (b) Is owned by a municipality, as contemplated in the Local Government: Municipal Systems Act, 2000 (Act No. 32 of 2000), and is otherwise similar to an enterprise referred to in paragraph (a) above.

Technology Transfer

Technology Transfer refers to the transfer of technology or technical know-how from an owner of the technology to a seeker of that specific technology by means of some form of agreement – licensing, joint venture, strategic alliance, outright sale or mutually acceptable means. In determining the value of technology transfer for purposes of NIP credits, the net present value of the stream of associated economic benefits that are yielded by the technology over its life span will be determined through negotiations. These benefits will include the real value of technology, patents, trademarks, copyrights and other technology-related variables.

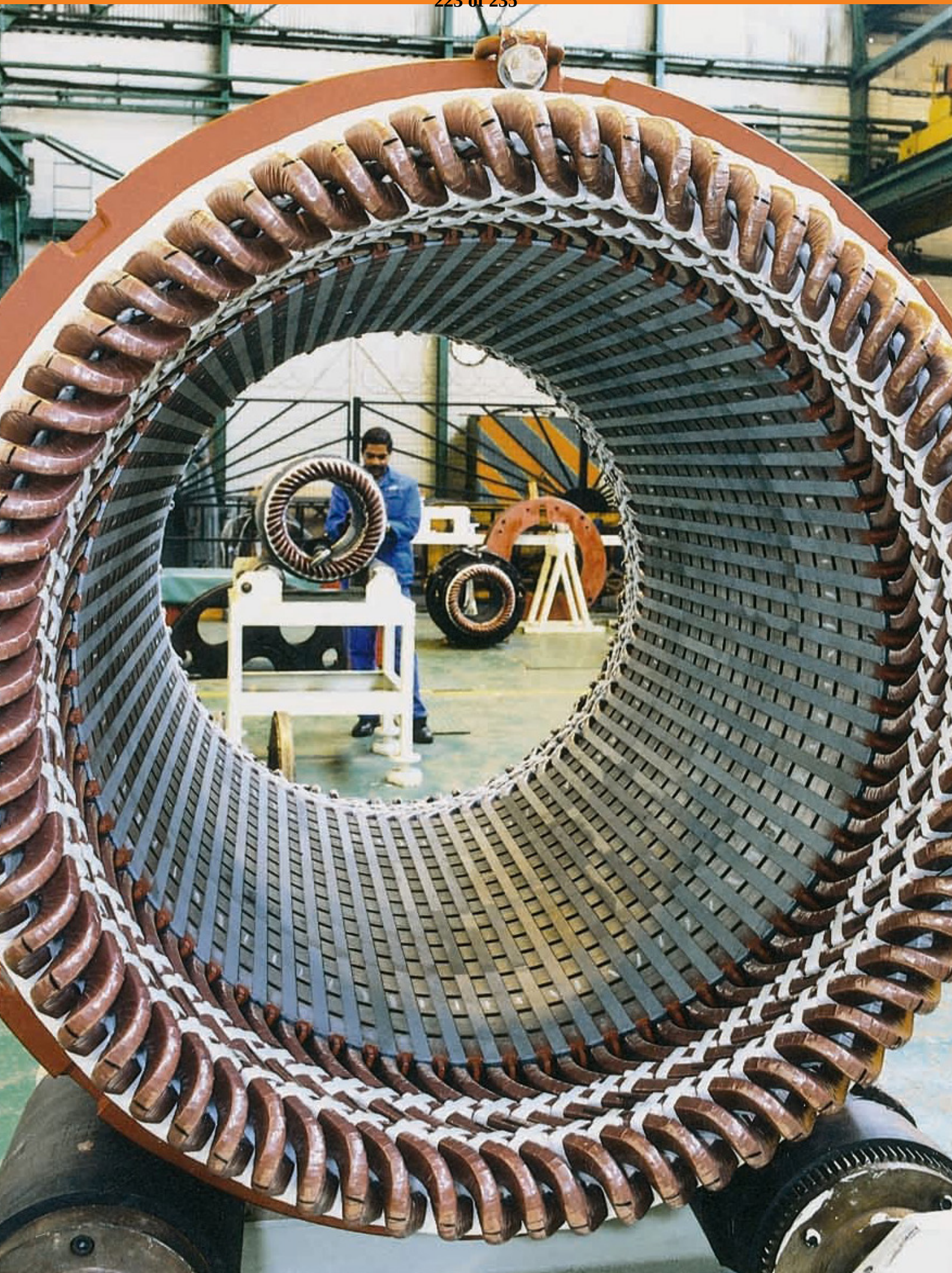
Research and Development (R&D)

For NIP purposes, R&D refers to those systematic activities that combine both basis and applied research, that are aimed at discovering solutions to problems or creating new goods and knowledge. R&D may result in ownership of intellectual property such as patents, where the development cost is carried forward, but the cost of basic and applied research is written-off as incurred.

Transformation of the economy

Economic Transformation relates to those NIP activities that seek to support the development and growth of small, medium and micro enterprises (SMMEs), co-operative enterprises, black economic empowerment (BEE), women empowerment, as well as regional development initiatives as set out in a range of government policy documents giving effect to these policy objectives.





1. Introduction

The NIP programme was approved by Cabinet in September 1996 and seeks to build the country's industrial capabilities through the leveraging of public procurement. NIP places an obligation on all suppliers of goods and services to Government to participate in some form of economic activity through any or a combination of the following key objectives: investment to raise production capacity and competitiveness in strategic sectors of the economy; export promotion; R&D collaboration; technology transfer; and acquisition. NIP means that all Government purchases that have an imported content of \$10 million and above are subjected to a NIP obligation, calculated as an equivalent of 30% of the imported portion of the purchase contract. This 30% NIP obligation is fulfilled through local economic activities that have the potential to impact positively on the objectives of NIP.

NIP forms part of the four-tier system of public procurement levers approved by Cabinet in December 2012, i.e. designations in terms of the amended regulations of the PPPFA; the Competitive Supplier Development Programme; Direct NIP and Indirect NIP.

2. The Objectives of the NIP

The objectives of the NIP are to:

- (i) Ensure sustainable economic growth, with particular emphasis on the value-adding, labour-intensive and strategic manufacturing sectors of the economy;
- (ii) Facilitate access to new markets and/or establish new trading partners;
- (iii) Encourage FDI into South Africa, particularly in strategic productive sectors of the economy;
- (iv) Ensure there is technology transfer to South Africa;
- (v) Encourage R&D collaboration and the commercialisation of such new technology in South Africa;
- (vi) Enable and support South African manufacturers to enter global supply value chains (GVCs) of major OEMs;
- (vii) Contribute to sustainable job creation and/or retention; and
- (viii) Support broad-based black economic empowerment and contribute to regional economic decentralisation where possible and appropriate.

3. The NIP Obligation

Subject to exemptions specified in clause 3.5 below, all purchases or lease contracts for goods and services by Government and SOEs with an imported content equal to or exceeding US\$10 million or equivalent value ("the NIP threshold") are subject to a NIP obligation.

Companies with a NIP obligation are required to sign an obligation agreement with **the dti** within a month of signing the purchase agreement with the procuring entity. The obligation agreement governs the relationship between **the dti** and supplier. It defines the NIP obligation value/s, requirements to fulfil the NIP obligation, performance milestones, performance monitoring processes and the NIP credit allocation criteria.

3.1. Types of government contracts

The following types of government contracts will attract NIP if the imported content equals or exceed the NIP threshold:

3.1.1 Single Contracts

This refers to any single contract with the imported content equalling or exceeding the US\$10 million NIP threshold.

3.1.2 Multiple Contracts

This refers to multiple contracts for the same products or services, each with an imported content exceeding US\$3 million, awarded to one seller over a two-year period, which in total equals or exceeds the US\$10 million NIP threshold.

3.1.3 Contracts with Renewable Options

This refers to all contracts with a renewable option clause, where the total value of the imported content would equal or exceed the US\$10 million NIP threshold.

3.1.4 Lease Contracts

This refers to all lease contracts where the total imported cost of the lease equals or exceeds the \$10 million NIP threshold.

3.2. NIP fulfillment period

The fulfillment Period for NIP obligations is 7 years, commencing from the effective date of the NIP obligation. Projects linked to the NIP obligation agreement will carry a life span of 7 years. After this period, any excess credits accumulated will be banked for a further period of 4 years. Banked (excess) credits may be used to discharge 50% of any new obligation.

4. Exemptions from NIP

The following contracts are exempted from NIP:

- All procurements by SOCs that fall under and have been expressly defined as falling under the Competitive Supplier Development Programme, managed by the Department of Public Enterprise, and for which there are Supplier Development Plans (SDPs) in place, which has been made a stipulated criteria for the tender adjudication. Where there are no SDPs in place, NIP will apply; and
- All products, sectors or sub-sectors that are designated for public procurement by the Minister of Trade and Industry in terms of the Amended Regulations of the PPPFA. This exemption does not apply to the whole value of the contract, but specifically to the designated products.

5. Principles of NIP

The criteria for evaluating qualifying NIP business concept are based on the following principles.

5.1. Additionality

All NIP projects must reflect new or incremental business. Investment type projects only qualify for NIP credits if they are either new facilities or the expansion or upgrading of existing facilities. Investment in existing facilities should demonstrate, beyond reasonable doubt, the added benefit of “competitiveness upgrading” accruing from such investments. Export promotion-type projects qualify for NIP credits only if they are either for new or existing products that are introduced into new markets.

5.2. Causality

Causality means that the NIP project must result directly from a NIP obligation, arising from a Government purchase contract. In other words, the obligor would not have initiated or participated in the project had it not been for the NIP programme or a condition of the purchase contract. There must be a clearly identifiable link between the NIP obligation, the obligor and the NIP project. A project submitted under a Strategic Partnership Agreement need not meet this criterion, other than to demonstrate that it has been caused by the involvement of the obligor.

5.3. No Increase in Purchase Price

The NIP obligation must not result in an increase in the price of the purchase contract.

5.4. Sustainability

All NIP projects should be economically and operationally sustainable. Capacity and competitiveness must be created to enable the project to sustain momentum even after the NIP obligation has been discharged.

6. Qualifying NIP Projects

6.1. Investment

Investments that are triggered by a NIP obligation should wherever reasonably possible take the form of a capital injection dedicated to the establishment, expansion or upgrading of a manufacturing facility in South Africa. Investments can also involve a capital outlay that is aimed at creating new or expanding or upgrading service facilities in South Africa.

6.2. Licensee Production

Licensed production refers to the production of goods by a South African firm based on the transfer of technology under direct commercial arrangement between the NIP obligor and the South African firm.

6.3. Export promotion

Export promotion involves the procurement of locally manufactured goods and services by foreign companies. To qualify for NIP credits, these purchases and sales transactions must be for new products and/or new markets. Obligors must

provide documentary proof that the products/services would not have otherwise been exported without direct involvement of the obligor.

6.4. Subcontracting

In the context of NIP, subcontracting refers to the local production of components or parts of a product by a South African firm as part of an agreement between the local firm and the obligor. The subcontracting arrangement does not necessarily involve the licensing of technical information; instead, it may be a direct commercial arrangement between the NIP obligor and the South African local partner/firm.

6.5. Technology Transfer

Technology transfer refers to the transfer of technology or technical know-how from an owner of the technology to a seeker of that specific technology by means of some form of agreement – licensing, joint venture, strategic alliance, outright sale or mutually acceptable means. In determining the value of technology transfer for purposes of NIP credits, the net present value of the stream of associated economic benefits that are yielded by the technology over its life span will be determined through negotiations. These benefits will include the real value of technology, patents, trademarks, copyrights and other technology-related variables.

6.6. Research and Development (R&D)

For NIP purposes, R&D refers to those systematic activities that combine both basic and applied research aimed at discovering solutions to problems, creating new products/processes or improving existing products/ processes. R&D may result in ownership of intellectual property such as patents, where the development cost is carried forward, but the cost of basic and applied research is written-off as incurred.

7. Non-Qualifying Projects

- 7.1. Business activities that have been submitted and approved for purposes of satisfying the Equity Equivalent requirement under the B-BBEE Act do not qualify for NIP.
- 7.2. Business activities that benefit from the automotive investment scheme do not qualify for NIP. An exception may be allowed, provided that such exemption is informed by a clear case setting out the reasons why a project receiving benefits from the automotive incentive scheme, should also benefit from NIP. This should typically be linked to localisation technologies that are deemed a priority at sectoral level. For example, if the proposed NIP project is seen to be satisfying one of the localisation technologies or activities that are prioritised by the Automotive Supply Chain Competitiveness Initiative (ASCCI) or similar platforms.
- 7.3. Business activities that benefit from the 12i Tax Incentive scheme will not qualify for NIP.

8. General Procedure for Compliance with NIP

To comply with the minimum requirements of NIP, all potential suppliers of goods and services with a foreign content that equals or exceeds the NIP threshold of \$10 million (or equivalent) are required to strictly comply with the following procedure:

8.1. SBD 5 Form

Government procuring entities must include a copy of the SBD 5 Form as one of the eligibility forms/documents to be completed and submitted by bidders submitting government tenders or RFPs.

A copy of this completed form must be submitted to **the dti** upon submission of tender documents. An acknowledgement of receipt will be issued by **the dti**.

8.2. NIP Obligation Agreement

Obligors are required to sign a NIP obligation agreement within a month of the signing of the main purchase agreement.

8.3. Performance Guarantee

Upon signature of the NIP agreement, obligors are required to furnish **the dti** with an acceptable form of performance guarantee within 90 days of the effective date of the NIP obligation agreement. The following performance guarantees

may be accepted:

- **Bank Guarantee**
For the purposes of NIP, the term “Bank Guarantee” refers to an irrevocable commitment by a bank to pay a specified sum of money in the event that the NIP obligor fails to perform on the legally binding undertaking to discharge the NIP obligation to the satisfaction of the Government of South Africa.
- **Company Guarantee**
This refers to an irrevocable commitment by the obligated company or its parent company to pay a specified sum of money in the event that the NIP obligor fails to perform on the promise to discharge the NIP obligation to the satisfaction of the Government of South Africa. This is accepted in circumstances where the obligor can demonstrate a solid financial standing and the ability to meet this commitment.

8.4. Strategic Partnership Agreements (SPA)

SPA refers to an arrangement where companies are allowed to undertake NIP activities in advance and bank NIP credits as defined for future use. The SPA, upon date of signature, will remain valid until the parties agree to terminate. Projects linked to the SPA will carry a life span of ten (10) years. NIP credits carry a limited life span of five (5) years from the date of award and credits that are not used within this period will automatically lapse. Banked NIP credits in the SPA may be used to discharge future NIP obligations.

8.5. NIP Business Concept

The primary purpose of the business concept is to provide a brief overview of the proposed project and preferably be not more than five pages. It is primarily used by the IPS to adjudicate whether the business concept meets the NIP criteria before a company can embark on a more detailed business plan. It should contain the following information:

- A brief description of the type of project, as outlined in section 6;
- A brief description of the products or services;
- A brief description of the technologies, processes and systems to be used;
- The source of raw material inputs and estimated local content;
- The proposed geographic location;
- A clear demonstration of the project’s sustainability; and
- Demonstrate concisely how and the extent to which the project will contribute to the objectives set out in section 2.

8.6. NIP Business Plan

A NIP business plan is a document that expresses the purpose and direction of the NIP project, clarifies the growth potential of the project and outlines project deliverables, timelines and resource allocation. At the same time, it should concisely demonstrate the role and commitment of the NIP obligor and the local partner(s) to the NIP project. Where the project involves other participating companies, the business plan must be accompanied by bona fide letters from those companies indicating their support and binding commitment to participate in the project as a NIP project. It should expand on the information provided in the business concept and include the following additional information:

- Partners (companies involved in the project);
- Ownership structure, including the role of the obligor;
- Funding details, where applicable;
- Financial projections, including estimated credit schedules over the lifespan of the project;
- Employment projections, both local and foreign; and
- Demonstrate causality and additionality.

9. Performance Milestones

The economic success of the NIP programme depends on the ability of obligors to identify and implement value-adding business activities in the productive sectors of the economy, including services that meet the NIP criteria. Because of challenges associated with business start-ups and ramp-up phases of projects where commercial production may start at relatively low levels of volume, obligors must observe the following performance milestones in the processes of discharging NIP obligations:

9.1. Milestone 1

Discharge of a minimum of 30% of the aggregate value of the NIP obligation within three years of the effective date of the NIP agreement.

9.2. Milestone 2

Discharge of a minimum of 70% of the aggregate value of the NIP obligation within five years of the effective date of the NIP agreement.

9.3. Milestone 3

Complete discharge of the NIPP obligation within seven years of the effective date of the NIP agreement.

10. Performance Review

10.1. Annual review meetings

The parties must hold annual review meetings, commencing from the effective date of the NIP obligation agreement. The purpose of a NIP review meeting is to assess the obligor's performance against milestone targets as set out in the obligation agreement. This review also assesses the performance of all projects in relation to the achievement of the NIP objectives mentioned in section 2.

10.2. Project site visits

The purpose of a NIP project site visit is to verify the implementation status of the project, new or additional assets, employment records and general management of the project. **the dti** reserves the right to conduct project performance reviews and site visits as and when necessary.

10.3. NIP Credit Claims

NIP project performance stipulations, as projected in the approved business plan, require that the obligor must submit NIP credit claims at least once but no more than two times a year. Such applications for NIP credit claims shall be supported by documentary evidence of performance (certified copies of sales invoices and proof of investment), with written confirmation of such financial transactions by the participating local companies.

10.4. NIP Credit Methodology

10.4.1 Investment Model

Investment related NIP projects are credited with a multiplier of 2 NIP credits. For the investment to earn NIP credits, the NIP obligor must have provided direct funding to the project/s.

This funding must have been used to finance:

- (i) The establishment of a manufacturing facility;
- (ii) Acquisition of capital equipment;
- (iii) Technology-transfer costs; and
- (iv) Where jobs are created as a result of the investment, the cost of salaries and wages of such employees qualify for NIP credits.

In all instances where investment-related NIP credits are claimed, documentary evidence of actual transactions must be produced.

For the purposes of determining and awarding NIP credits for investment-related NIP projects, the criteria outlined in Table 1 will be used.

Table 1: Investment Project

NIP Objective	Crediting Methodology	NIP Credit Multiplier
Sustainable Economic Growth [Local Sales]	Revenues accumulated over the fulfilment period	\$1 = 1 Credit Minimum 40% LC
Export Promotion	Export Revenues = Additional Credits	\$1 = 1+LC* Minimum 40% LC
Job Creation	Cost of Salaries for a specified number of jobs accumulated over the fulfilment period	\$1 = 1 Credit
Training and Development [directly linked to project investment]	Cost of training accumulated over the fulfilment period	\$1 = 1 Credit
SMME** Promotion	Outsourcing to SMMEs	\$1 = 1 Credit
Black Economic Empowerment	Outsourcing to BEE SMMEs	\$1 = 2 Credits
	BEE Ownership % x revenue	\$ x ownership % = Credits
Investment and Technology Transfer	Capital outlay	\$1 = 2 Credits
R&D Expenses	All costs	\$1 = 2 Credits

Table 2: Example of NIP Credits Schedule Based On The Investment Model

	Year 1	Year 2	Year 3	Year 4	Year 5	Credits
INCOME						
Total Sales:		5 100	9 400	10 800	10 800	
Domestic (x1)		2 000	3 400	4 200	4 200	13 800
Exports* (I+LC) - 75% LC		3 100	6 000	6 600	6 600	39 025
BEE Ownership (% x Rev) - 30%		1 530	2 820	3 240	3 240	10 830
EXPENDITURE						
Land and Building (x2)	5 000					10 000
Plant and Equipment (x2)	6 000	1 000				14 000
Tooling (x2)	3 000	500				7 000
Other Set-Up Costs (x2)	500					1 000
Material Costs	190	1 200	1 690	2 040	2 040	
Salaries and Wages (x1)	760	2 520	2 570	2 630	2 630	11 110
Training and Development (x1)	50	200	300	300	300	1 150
Services:						
Transportation/Shipping (x1)		70	150	160	160	540
Security (x2)	10	80	120	150	150	1 020
Auditing (x2)	10	50	80	100	100	680
Technical Services (x1) etc.	10	300	480	550	550	1 890
Consulting Fees (x2)	70	450	400	370	370	3 320
R&D Expenses (x2)	60		200	220	220	1 700
Sundries	10	60	60	60	60	
Total NIP Credits Accumulated						117 065

10.4.2 The Export Promotion Model

Export promotion involves the export of locally manufactured goods. For export-related projects, NIP credits are based on:

- (i) Revenue
- (ii) Local content

Table 3: Export Promotion projects

	Year 1	Year 2	Year 3	Year 4	Year 5	Credits
Annual Export	60	100	200	250	260	
100% Local Content (LC)						
NIP Credits per Annum [Revenue x 100% x 2]	120	200	400	500	520	
NIP Credits Accumulated	120	320	720	1 220	1 740	1 740
60% Local Content						
NIP Credits per Annum [Revenue x 60% x 2]	72	120	240	300	312	
NIP Credits Accumulated	72	192	432	732	1 044	1 044

11. Roles and Responsibilities

11.1. Industrial Participation Secretariat (IPS)

The powers and functions of the IPS are set out as follows:

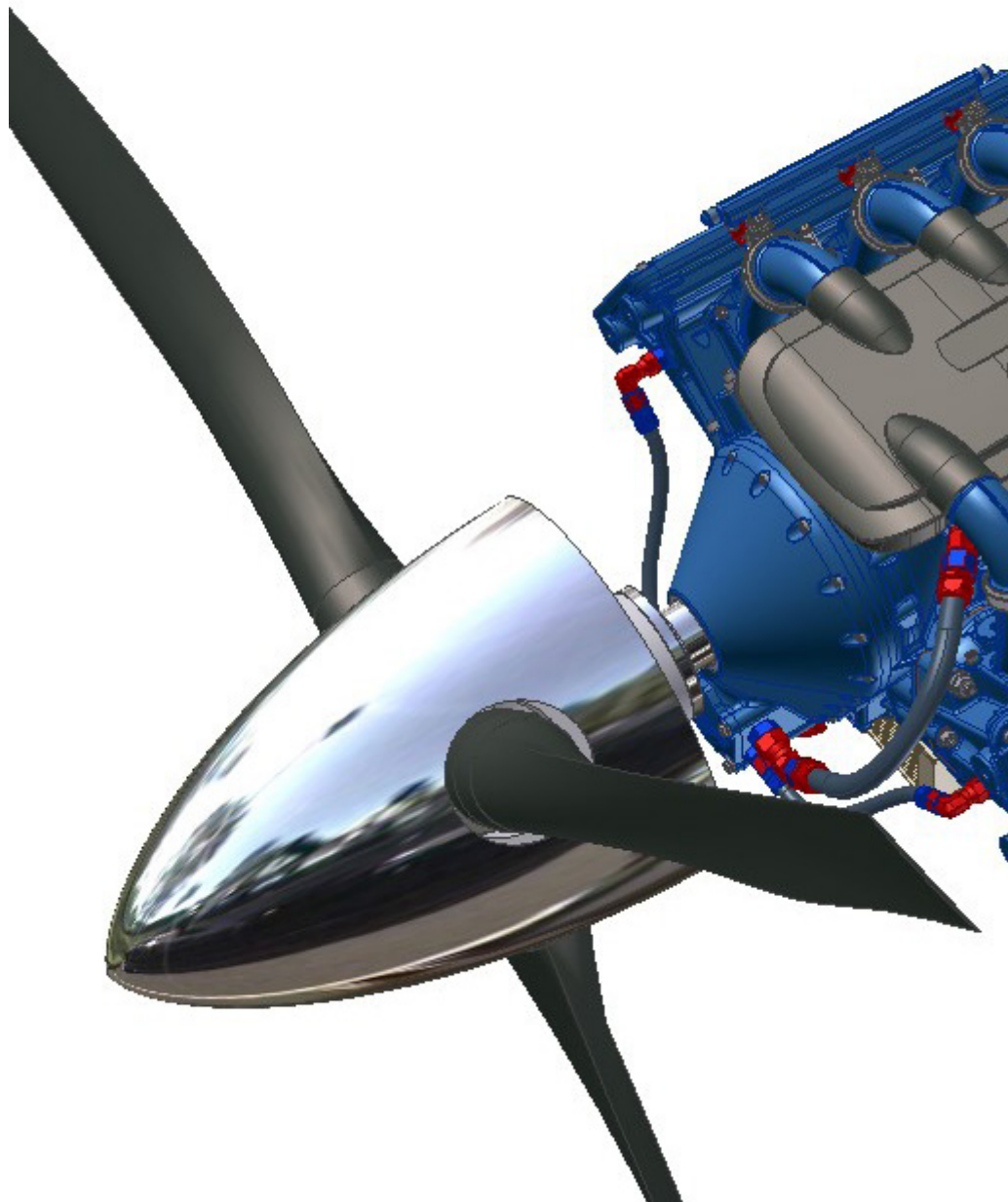
- a) Monitor all relevant procurement transactions in South Africa that do attract NIP obligation;
- b) Assist, guide and advise obligors in the fulfilment of their NIP obligations;
- c) Conclude NIP contracts to secure strict compliance;
- d) Evaluate NIP business concepts prior to submission to the ICC for adjudication;
- e) Submit recommendations regarding NIP business plans to the Industrial Participation Control Committee (IPCC) for approval;
- f) Administer and audit the performance of all NIP projects;
- g) Prepare status/performance reports for the IPCC for the allocation of credits; and
- h) Assist the IPCC with its functions and where possible disseminate all decisions of the latter to all relevant parties.

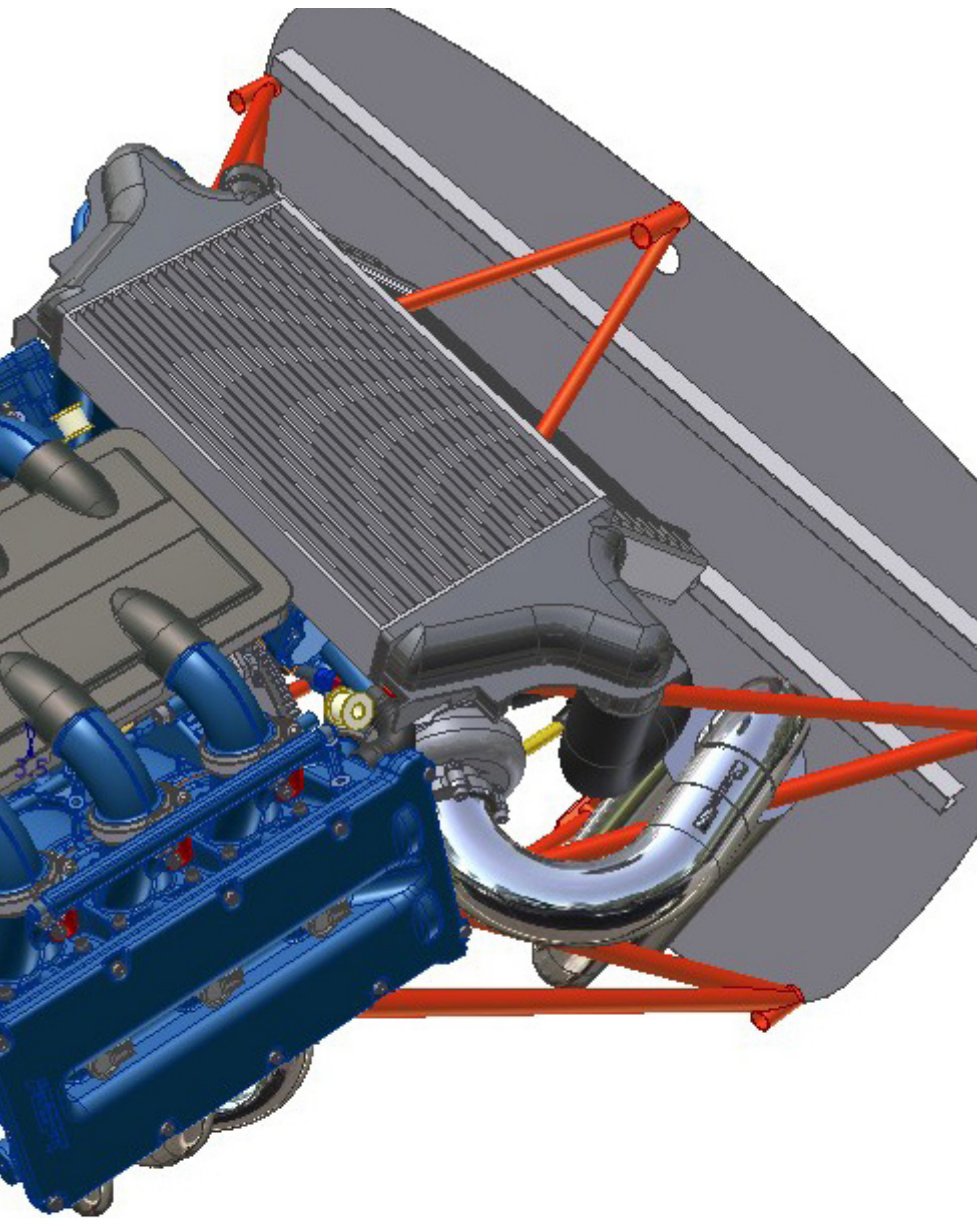
11.2. The Industrial Participation Control Committee (IPCC)

The powers and functions of the IPCC are set out as follows:

- (a) Provide strategic guidance and propose amendments to NIP guidelines, where necessary;
- (b) With the assistance of the Industrial Participation Secretariat (IPS), ensure that all relevant government departments and SOCs are aware and enforce their obligations related to NIP;
- (c) Adjudicate on recommendations made by the IPS regarding NIP business proposals;
- (d) Evaluate the performance reports, as supplied by the IPS, and award credits or invoke penalties where it is justified;
- (e) Ensure that all relevant NIP agreements are monitored and audited by the IPS on a regular basis; and
- (f) Report regularly to the Director-General, the Minister and the Portfolio Committee on Trade and Industry.







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