

TENDER DATA

Project title:	Appointment of additional suppliers for a Panel of Suppliers to source / Manufacture, supply, and deliver digital Set-Top Boxes (STBs) and integrated Digital Television sets with related accessories for Digital Terrestrial Television (DTT) and Direct to Home (DTH) non-subsidised market as and when required within a period of 12 months.
Bid no:	SENT-022-2025-26

1. BACKGROUND

Sentech is a state-owned company and is the largest broadcasting signal distributor in South Africa. Sentech is a licensed Electronic Communications Network Service provider in South Africa. It currently operates many telecommunication networks for Satellite, Television, Radio, Internet and more. As such, Sentech is a global enabler of broadcasting and digital content delivery.

SENTECH requires the manufacturing, supply, and delivery of digital Set-Top Boxes (STBs) and integrated Digital Television sets with related accessories

Sentech operates several Intelsat Satellites on IS-20 Transponder networks. Sentech has implemented digital Satellite television networks in the Ku-Band Frequency spectrum using the Digital Video Broadcast – Satellite first-generation (DVB-S) and second-generation (DVB-S2) standards as contained in the European Telecommunications Standards Institute (ETSI) EN 300 421 and ETSI EN 302 307 Part-1, respectively. MPEG2 and MPEG4 video encoding, as well as MPEG1 Layer2 and AAC sound encoding, are used. Sentech's current Satellite network parameter configuration and capacity allocation are in Table 1 and **are not limited** to the below:

Transmission Parameter	TP 1	TP 2	TP 3	TP 4
DVB Standard	DVB-S2	DVB-S2	DVB-S	DVB-S
Modulation Type	8-PSK	8PSK	QPSK	QPSK
FEC	5/6	5/6	2/3	1/2
Symbol Rate (MSys/s)	28.75	28.75	30.00	26.66
Roll-off	35%	25%	20%	35%
Pilots	Yes	Yes	No	No
Polarization	Vertical	Vertical	Vertical	Vertical

Table 1: Sentech's current Satellite network parameters

Sentech owns and operates several national terrestrial television and radio transmitter networks. Sentech has implemented digital terrestrial television (DTT) networks in the Ultra High Frequency (UHF) band using the Digital Video Broadcast – Terrestrial second-generation (DVB-T2) Modulator Interface (MI), Multiple Physical Layer Pipe (MPLP) technology as contained in the European Technical Standards Institute (ETSI) EN 302755 v1.3.1 (2011-11) and TR 101290 v1.3.1 (2014-07). MPEG-4 video encoding and AAC sound encoding are used. Sentech's current DTT network parameter configuration and capacity allocation are in Table 2 and **are not limited** to the below:

Transmission Parameter	Mux 01		Mux 02	
Physical Layer Pipe	PLP 0	PLP 1	PLP 0	PLP 1
Transmission Mode (FFT)	32K Extended	32K Extended	32K Extended	32K Extended
Constellation	256 QAM rotated	256 QAM rotated	256 QAM rotated	256 QAM rotated
Guard Interval	1/16	1/16	1/16	1/16
Pilot Pattern	PP4	PP4	PP4	PP4
PAPR	None	None	None	None
SISO/ MISO	SISO	SISO	SISO	SISO
FEC Frame length	64800	64800	64800	64800
Input Mode	Mode B (MPLP)	Mode B (MPLP)	Mode B (MPLP)	Mode B (MPLP)
Code Rate	3/5	3/5	3/5	3/4

Table 2: Sentech's current DTT network parameters

Theoretical C/N value per type of channel, Multiplex & PLP are in Table 3 below:

Type Stationary Channel	Mux 01 - Theoretical C/N		Mux 02 - Theoretical C/N	
Physical Layer Pipe	PLP 0	PLP 1	PLP 0	PLP 1
Additional White Gaussian Noise (AWGN)	16.1 dB	16.1 dB	16.1 dB	20.0 dB
Fixed Reception (LOS) - Rice	16.3 dB	16.3 dB	16.3 dB	20.3 dB
Portable Reception (NLOS) - Rayleigh	18.3 dB	18.3 dB	18.3 dB	22.6 dB
0dB @ 90% of Guard Interval (SFN)	18.4 dB	18.4 dB	18.4 dB	22.7 dB

Table 3: Theoretical C/N per type of channel, Multiplex & PLP

The primary requirement is the supply and delivery of integrated Digital Television TV sets and Set-Top-Box for DTT and DTH networks for unsubsidized markets, and it is this tender's primary focal point. There are functionalities that the Decoder units are required to perform:

1. Satellite Signal Reception, decodability, and interactive services on SENTECH's Satellite Network.
2. Terrestrial Signal Reception, decodability, and interactive services on SENTECH's DTT Network.
3. Operate with Free-To-Air, Free-To-View, and Pay TV services on the DTH network.
4. Operate with Free-To-Air services on the DTT network.

The purpose of this tender is to assist non-subsidised DTT and DTH network users across the country to access Sentech's television network by using Set-Top Boxes and integrated Digital Television sets for DVB-T2 and DVB-S2 reception across the country.

1.1. ICASA Type approval

Successful bidders appointed to the panel will be required to provide ICASA approval certificates for each product they supply.

The responsibility of obtaining type approval certificates is that of the OEM and supplier. ICASA offers an online registration process (via Google Chrome browser) for type approval certification, enabling the creation/registration of your entity, as well as the lodging of your application once the entity verification process is successfully concluded.

Registration website: <https://online.icasa.org.za>

Type Approval Regulations: <https://www.icasa.org.za/legislation-and-regulations/type-approval-regulations-2013>

Should you experience any challenges during the registration process, please feel free to contact the following ICASA officials for assistance:

Mark Deavall: 012 568 3843 (MDeavall@icasa.org.za)

Lenneth Bera: 012 568 3337 (LBera@icasa.org.za)

Keneilwe Lonake: 012 568 3373 (KLonake@icasa.org.za)

Bethuel Nkgadime: 012 568 3993 (BNkgadime@icasa.org.za)

Thuli Mkhabela: 012 568 4015 (TMkhabela@icasa.org.za)

Siyanda Nkamisa: 012 568 3802 (SNkamisa@icasa.org.za)

1.2 SABS Type Approval

Successful bidders appointed to the panel will be required to provide SABS/SANAS approval certificates for each product they supply. The appointed bidders must ensure that valid certificates are issued for the units provided.

2. SUBMISSION OF BIDS and CLOSING

2.1 This Bid closes on the date and time stipulated on the Notice and Invitation to Bid (SBD1). Bids can be submitted electronically via the eTender Portal and/or by hand to the tender box at Sentech Offices, Octave Road, Radiokop Ext 3, Honeydew, Johannesburg.

- a) Bidders that opt to deposit their bid documents in the tender box must do so on or before the closing date and time, during working hours only (08:30-15:30). No late submissions will be accepted.
- b) Bidders who opt to submit via the Sentech eTender Portal ("the eTender Portal") are advised that the eTender Portal has a files size limit of 30MB. Bidders must upload their tender documents timeously. The eTender Portal is available 24hrs a day. No late submissions will be accepted.
- c) It is incumbent on the bidder to ensure that their bids are submitted timeously via the selected method before the closing date and time. Sentech will not take any responsibility of any incomplete submissions or late tenders, for any reason whatsoever.
- d) Telegraphic, telephonic, telex, facsimile, e-mail and late Bids will not be accepted.

2.2 This is a one-envelope system for Bid Evaluation. Bidders must submit their proposal and all supporting documentation in a sealed envelope, clearly marked as follows:

- a) For manual submissions, Envelope One must consist of "Original Technical Proposal together with a soft copy in PDF format of an electronic medium e.g. USB etc. The soft copy will consist of a single PDF document containing the complete response. The envelope must contain all information and documents relating to the Bid. (Refer to list of returnable documents).
- b) No Financial Information must be included in Envelope One.
- c) Envelope Two "Original Financial Proposal" (Contract Date and Pricing schedule/schedule of rates as applicable) together with 1 copy of "Financial Proposal" together with a soft copy in PDF format of an electronic medium e.g. Compact Disk (CD), USB etc. The soft copy will consist of a single PDF document containing the complete Financial Proposal.
- d) Bidders are required to place the sealed Envelope One together with the sealed Envelope Two into one sealed envelope or container. The sealed envelope or container must be marked with the following information:

For Attention:

- HEAD OF SUPPLY CHAIN MANAGEMENT
 - BID REFERENCE NO: ##
 - TECHNICAL AND FINANCIAL PROPOSALS
 - INSERT CLOSING DATE AND TIME
 - BIDDER'S NAME AND ADDRESS
- e) Bidders that combine their Technical Proposal with the Financial Proposal (or any financial information) will be automatically disqualified and not be evaluated further.
 - f) The financial proposal will only be opened and evaluated should the technical proposal be found to be responsive, being that the technical proposal has met the minimum technical evaluation criteria that are set out in the Bid Documents.
 - g) The Bidders shall insert a table of contents and bind (ring bind or similar method) the proposal documents and verify the page numbers, as Sentech will not accept any liability with regard to any disputes arising from pages that are missing or duplicated in the aforementioned documents.
 - h) Bidders are required to complete and sign all the returnable documentation (refer to list of returnable documents) and initial all pages, drawings and brochures which are included in the reply as Sentech will not accept any liability with regard to any disputes arising from pages that are missing or duplicated in the aforementioned documents.
 - i) Late submissions will not be considered.
 - j) For online submissions via the e-Tender portal, submission requirements are directed by the system. Bidders must follow instructions in the Bidder's manual.

3. SIGN AND INITIAL

Bidders are required to complete and sign the Bid Forms where required and initial the bottom of all pages, drawings and brochures which are included in the submission as Sentech will not accept any liability with regard to any disputes arising from pages that are missing or duplicated in the aforementioned documents.

Both original signatures and electronic signatures will be accepted.

4. COMPLETION OF BID DOCUMENTS

Bidders must ensure that they complete all sections of the Bid Documents as per the requirements in the Bid.

Bidders must use only the Bid documents provided by Sentech. Photocopying of the Bid document is permitted however Bidders must not retype or redraft the Bid documents.

5. BID VALIDITY

This Bid shall remain valid for a period of 90 days only. An extension of the Bid validity, if justified in exceptional circumstances, shall be requested in writing from all Bidders before the expiration of the 90-day period.

6. COSTS OF PREPARING THE BID SUBMISSION

Bidders shall bare all costs associated with the preparation and submission of the proposals. Sentech shall under no circumstances be held responsible or liable for any costs incurred during the bidding process.

7. ADMINISTRATIVE RESPONSIVENESS CRITERIA

Bidders are required to ensure that they meet all the Administrative Responsiveness Criteria.

8. BBBEE CODES AT SENTECH

Sentech complies with the codes of good practice as prescribed by the DTI, to advance Broad Based Black Economic Empowerment.

9. SUBCONTRACTING AS A CONDITION OF BID

The successful Bidder must subcontract a minimum of _____% of the value of the contract to _____ (specify the designated group targeted).

10. TRANSFORMATION PLAN

A transformation plan is a record of activities an entity intends to undertake to improve its BBBEE Level through Ownership, Management and Control; Skills Development; Enterprise and Supplier Development and Socio-Economic Development.

Sentech reserves the right to request a BBBEE transformation plan with clearly defined timelines and milestones if the recommended Bidder does not meet Sentech's transformation goals. These milestones must be achieved over the term of the contract. This transformation plan must be submitted within 10 working days from the written request, failing which Sentech reserves the right to withdraw its appointment of the preferred recommended Bidder.

11. LOCAL PRODUCTION AND CONTENT

In the case of designated sectors, where in the award of Bids, local production and content is of critical importance, such Bids will contain a specific bidding condition that only locally produced goods, services or works or locally manufactured goods, with a stipulated minimum threshold for local production and content will be considered.

Does this requirement fall under any designated sector as prescribed by the DTI?	Yes	No
If yes, specify the sector		
Specify the minimum threshold applicable		
Part A: DTT STB		
Part B: DTH STB		
Part C: iDTV		
Part D: DTH Dish Kit and Accessories		
Part E: DTT Antenna Kit and Accessories		

*Bidders must fill in the SBD6.2 for Local Content and Production

12. EVALUATION CRITERIA

The evaluation criteria are stipulated in 18 below. It is the Bidder's responsibility to ensure that it has responded to the evaluation criteria. Failure to meet the evaluation criteria will result in the Bidder not being evaluated further. Bidders must ensure that they have included all supporting documentation required to support their response to the Bid.

13. OBJECTIVE CRITERIA

- 13.1 Sentech reserves the right not to award this tender to any Bidder or any of its directors or subcontractors who during the preceding five (5) years –
 - 13.1.1 failed to perform satisfactorily on a previous project with Sentech or any other organ of state; or
 - 13.1.2 wilfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract.
- 13.2 Sentech further reserves the right not to award this Tender to any Bidder or any of its directors or subcontractors who have been blacklisted by any organ of state or committed and/or charged in any court of law or similar tribunal or forum with any act of tax non-compliance, fraud, corruption and/or dishonesty of whatsoever nature.

14. AWARD OF BID/S

Sentech may appoint one or more suppliers, in whole or in part, or not appoint any supplier/s at all, and/or cancel the Bid in its entirety, at Sentech's sole and exclusive discretion, in order to satisfy various needs which may be identified, and to manage certain risks associated with the supply of goods or services specified in respect of the Bid.

15. ALTERNATIVE/SUBSTITUTE PRODUCTS

In the case of contracts and/or panels, Sentech shall be entitled to consider and accommodate product upgrades during the tenure of the contract and/or panel. Bidders are required to bring all such developments to the attention of Sentech for approval.

16. BRIEFING SESSION

Should there be a compulsory briefing session for this Bid, Bidders must ensure that they attend the briefing session and sign the attendance register, as non-attendance or failure to sign the attendance register will automatically disqualify a Bidder from submitting a proposal for this Bid.

All questions raised by Bidders post the briefing session will be consolidated and shared with all Bidders at least seven (7) calendar days prior to closing.

17. CLARIFICATION

Enquiries related to Bid documents may be addressed to the Bid Administrator and Supply Chain Official as stated in SBD 1 Notice and Invitation to Bid.

18. BID EVALUATION METHOD

This Bid will be evaluated as described in the table below.

# system will be followed for Technical and Price offer	1. Stage 1 – Administrative Responsiveness Evaluation All the Technical Proposals will be evaluated against the Administrative responsiveness requirements as set out in the list of returnable documents. 2. Stage 2 –Technical Evaluation # <u>Mandatory Eligibility Criteria</u> All the proposals that are fully compliant with the administrative responsiveness compliance criteria will then be evaluated against mandatory eligibility criteria as set out in Section 18 below. Bidder must be fully compliant (and supply referenced proof of compliance) to be evaluated further. 3. Stage 3- Risk Assessment All the proposals that are fully compliant with the Mandatory Evaluation Criteria may undergo a Risk Assessment. In the risk assessment, bidders are required to provide a sample unit that would be tested on Sentech's network. The tests will verify and confirm conformance to the Mandatory Evaluation Criteria.
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19. ADMINISTRATIVE RESPONSIVENESS REQUIREMENTS

To be administratively responsive, Bidders must ensure that they meet all the below mentioned criteria. Bidders that do not meet all the below mentioned criteria may not qualify to be awarded the Bid. Sentech reserves its rights in respect of the below criteria.

- Complete and return all documentation stipulated in the LIST OF RETURNABLE DOCUMENTS.
- All correspondence must be in English.
- Bidders must fill in all sections of this document (where applicable).
- **BLACK INK** must be used when completing the Bid documents.
- Bidders must use only the Bid documents provided by Sentech. Photocopying of the Bid document is permitted however Bidders must not retype or redraft the Bid documents.
- All corrections must be initialled. The use of corrective fluid is strictly prohibited.
- Bidders are required to fill in and sign the Bid Forms and initial all pages, drawings and brochures which are included in the reply as Sentech will not accept any liability with regard to any disputes arising from pages that are missing or duplicated in the aforementioned documents.

- Bidders must complete an attendance register at each compulsory site meeting attended.
- Appointment of a Bidder will be subject to signing, declaration and submission of SBD 1, 3.1, 3.2, 3.3, 4, 5, 6, 1, 6.2 8, and 9 depending on applicability.
- Complete and sign the Contract Data.
- Should this be a 2 envelope or 2 stage system, Bidders MUST separate the technical proposal from their financial proposal. The technical and financial proposals must be placed in two separate sealed envelopes.

20. AUTOMATIC DISQUALIFICATION

Sentech reserves the right to automatically disqualify Bidders from being awarded this Bid. The following will lead to automatic disqualification:

- Failure to submit a financial proposal, if required.
- The Bidder is or has been involved in any act of corruption or fraud or bribery or collusion or attempt to influence any employee of Sentech to award this Bid or any other Bid to it.

21. TECHNICAL RESPONSIVENESS COMPLIANCE

The Technical Evaluation will encompass evaluation of:

- Mandatory Criteria

22. TECHNICAL EVALUATION CRITERIA

22.1 Mandatory Eligibility Criteria

The following criteria are mandatory to ALL BIDDERS:

Bidder must clearly indicate which section they will be bidding for between Part A: DTT STB, Part B: DTH STB, C: iDTV, D: DTH Dish kit accessories and E: DTT Antenna kit accessories

22.1.1 SECTIONS THAT BIDDER IS TENDERING:

SECTION OF TENDER	YES/NO
Part A: DTT STB	
Part B: DTH STB	
Part C: iDTV	
Part D: DTH Dish kit and accessories	
E: DTT Antenna kit and accessories	

#Please indicate Yes or No in the table above

22.1.2 Evaluation Criteria – Part A: DTT STB

Mandatory Criteria

Service Providers MUST comply with ALL the criteria below to be evaluated further:

Mandatory Eligibility Criteria PART A – DTT STB	Comply Y/N?	Attach evidence (manuals, user guides, datasheet, etc.) and provide the reference page number in your proposal as Proof of Evidence
Bidders must meet the local content minimum threshold required for the supply of Set Top Boxes = 30% Complete and submit SBD 6.2 with relevant annexures (C, D & E)		

Mandatory Eligibility Criteria PART A – DTT STB	Comply Y/N?	Attach evidence (manuals, user guides, datasheet, etc.) and provide the reference page number in your proposal as Proof of Evidence
Front-End • DVB-T2 (in accordance with EN 302 755) • Code Rate: $\frac{1}{2}$, $\frac{2}{3}$, $\frac{3}{4}$, $\frac{5}{6}$, $\frac{4}{5}$, $\frac{3}{5}$ • Constellation: QPSK, 16 QAM, 64 QAM, 256 QAM; both rotated and non-rotated • Guard Interval: $\frac{1}{128}$, $\frac{1}{32}$, $\frac{1}{16}$, $\frac{19}{256}$, $\frac{1}{8}$, $\frac{19}{128}$, $\frac{1}{4}$ • Transmission mode: 1k, 2k, 4k, 8k normal and extended, 16k normal and extended, 32k normal and extended. • Pilot Pattern: PP1, PP2, PP3, PP4, PP5, PP6, PP7, PP8 • Input mode: Mode A (single PLP) and Mode B (multiple PLPs – common PLP, Type 1 and 2) • Normal and High-Efficiency Modes.		
Tuning • The decoder shall be capable of performing automatic tuning over the frequency ranges: ○ VHF: 174MHz – 254 MHz ○ UHF: 470MHz – 862 MHz • The decoder shall have a manual tuning mode where the user enters a frequency or channel number • The decoder shall ignore non-DTT and Pay-TV services when tuning [e.g. DVB-H]		
System MPEG-2 Transport Stream (in accordance with ISO/IEC 13818-1)		

Mandatory Eligibility Criteria PART A – DTT STB	Comply Y/N?	Attach evidence (manuals, user guides, datasheet, etc.) and provide the reference page number in your proposal as Proof of Evidence
Video Decoding - Standards: - H.264/MPEG-4 - H.265/HEVC - HD and SD video profiles - Resolutions 1080, 720p, 576p, 576i - Aspect Ratios 4:3, 16:9 - CVBS output - Video scaling (upscaling and downscaling) - Pillar and Letterbox and support for 16:9 with pan and scan - DVB (SDTV) subtitling - DVB (HDTV) subtitling		
Audio Decoding - Standards: - HE-AAC V2 (Mono or stereo audio pairs) - Stereo output, stereo left replaceable with a mono feed under user control - EPG support for radio services		
Memory RAM and Flash sizes to be determined by STB functionality requirements		
Middleware Middleware shall provide full functionality for STB setup, configuration, and TV operation		

Mandatory Eligibility Criteria PART A – DTT STB	Comply Y/N?	Attach evidence (manuals, user guides, datasheet, etc.) and provide the reference page number in your proposal as Proof of Evidence
Main Software Features • DVB PSI/SI support: ○ PAT, PMT, BAT, NIT, SDT, TDT, TOT, EIT p/f, EIT Schedule. • LCN ○ Shall be able to start on Channel 0 • DVB SSU support ○ Minimum Simple Profile ○ Secure software download mechanism to be established • Running Mode basic functions: ○ Channel change ○ Volume +/- ○ Audio mute ○ Switch between TV/Radio ○ Info (banner) ▪ Level 1: P/F information ▪ Level 2: Present program, Extended information ○ Menu ○ EPG ▪ 7 Days		

Mandatory Eligibility Criteria PART A – DTT STB	Comply Y/N?	Attach evidence (manuals, user guides, datasheet, etc.) and provide the reference page number in your proposal as Proof of Evidence
Connectors • RF female input connector [Compliant to IEC 61169-2 or adapters supplied] • 3x RCA or mini jack with breakout cable supplied for: ○ Analogue SD video output (Composite) ○ Analogue audio left output ○ Analogue audio right output • HDMI output ○ Minimum v1.4 ○ With HDCP • USB 2.0 Type A • Power input (external PSU)		
Remote Control Unit (RCU) • RCU shall provide full functionality for STB setup, configuration, and operation • Batteries shall be supplied.		
Front Panel Unit (FPU) • LED(s) to indicate the following states as a minimum: ○ Off/Standby ○ On/Running Mode ○ Error ○ RCU Keypress Ack • Buttons ○ Power ○ Channel +/-		

Mandatory Eligibility Criteria PART A – DTT STB	Comply Y/N?	Attach evidence (manuals, user guides, datasheet, etc.) and provide the reference page number in your proposal as Proof of Evidence
Accessories The decoder shall be supplied with the following accessories: • PSU (if external). ○ PSU cord to be of a length of at least 1.5m. • Composite (CVBS) video/stereo audio cable, of length at least 1.5 m, terminated with RCA connectors. • HDMI cable at least 1.5m • A remote-control unit (RCU) and batteries. • The user manual clearly describes the decoder menu functions. • Quick guide (in English and at least one other official language) that contains a basic wiring diagram, which shows alternative connections for installations.		
Warranty: A minimum warranty of 2(Two) years		
Training: The bidder must provide On-site or Off-site training on DTT STB functionality for Sentech technical staff.		
SLA Support: Support and Maintenance agreement for a minimum of 5 years		

Mandatory Eligibility Criteria PART A – DTT STB	Comply Y/N?	Attach evidence (manuals, user guides, datasheet, etc.) and provide the reference page number in your proposal as Proof of Evidence
Repair Centre: - Indicate the location (s) of the repair centre - State the logistic process from collection to return of the units - Sentech may be required to visit the repair centre		

Optional Features/Devices (not to be scored)

Service Providers to indicate if they have these Features and/or devices in their current product roadmap

Features And/Or Devices	YES/NO	Comment
USB PVR PVR functionality using a USB flash storage device. Use cases can include recording to storage (protected), playing media from storage, and software updates from storage.		
Digital Audio Output To support future digital audio output to outboard devices. Use cases can include Optical-Optical and Jack-Jack audio connections.		
Hybrid DVB-T2 & DVB-S2 STB A hybrid STB with DVB-T2 & DVB-S2 tuners. DVB-S2 tuner to comply with specifications outlined in Part B.		

22.1.3 Evaluation Criteria – Part B: DTH STB

Mandatory Criteria (If applicable)

Service Providers MUST comply with ALL the criteria below to be evaluated further:

Mandatory Eligibility Criteria Part B: DTH STB	Comply Y/N?	Attach evidence (manuals, user guides, datasheet, etc.) and provide the reference page number in your proposal as Proof of Evidence
Bidders must meet the local content minimum threshold required for the supply of Set Top Boxes = 30% Complete and submit SBD 6.2 with relevant annexures (C, D & E)		
Front-End • Receive DVB-S2 in accordance with ETSI EN 302 307 • Receive DVB-S in accordance with ETSI EN 300 421 • Receive QPSK and 8PSK waveforms • RF Input connector is 75 Ω F-Type Female, in accordance with IEC 61169-2 and IEC 61169-29 • Minimum return loss of 8 dB. • Input frequency range 950 MHz to 2 150 MHz • Maximum digital signal input level -25 dBm • Out-of-band local oscillator leakage: Less than 40 dBμV (QPSK 5 MBaud to 30 MBaud, 8PSK 5 MBaud to 45 MBaud) • In-Band local oscillator leakage: less than -70 dBm(QPSK 5 MBaud to 30 MBaud, 8PSK 5 MBaud to 45 MBaud)		

Mandatory Eligibility Criteria Part B: DTH STB	Comply Y/N?	Attach evidence (manuals, user guides, datasheet, etc.) and provide the reference page number in your proposal as Proof of Evidence
Tuning • LNB Power & Polarisation: Vertical +13V, Horizontal +18V • LNB Current: 500 mA maximum overload protection • LNB Switching: 22 kHz, the presence of a tone will cause the LNB to switch to the upper local oscillator • LNB low local oscillator frequency: 9,75 GHz • LNB high local oscillator frequency: Selectable 10,6 GHz or 10.7 GHz or user-enterable local oscillator frequency • Automatic tuning: acquire the home transponder and, according to the NIT, tune to all transponders in the network, listing only gap-filler services allocated a channel number. • Manual tuning: Prompt the user for frequency in megahertz and other transponder information.		
System MPEG-2 Transport Stream (in accordance with ISO/IEC 13818-1)		
Conditional Access Support for NagraVision Cardless Technology ○ The DTH STB must have a NOC 3.0 Nagra chipset at a minimum.		

Mandatory Eligibility Criteria Part B: DTH STB	Comply Y/N?	Attach evidence (manuals, user guides, datasheet, etc.) and provide the reference page number in your proposal as Proof of Evidence
Video Decoding - Standards: - H.264/MPEG-4 - H.265/HEVC - HD and SD video profiles - Resolutions 1080, 720p, 576p, 576i - Aspect Ratios 4:3, 16:9 - CVBS output - Video scaling (upscaling and downscaling) - Pillar and Letterbox and support for 16:9 with pan and scan - DVB (SDTV) subtitling - DVB (HDTV) subtitling		
Audio Decoding - Standards: - HE-AAC V2 (Mono or stereo audio pairs) - Stereo output, stereo left replaceable with a mono feed under user control - EPG support for radio services		
Memory RAM and Flash sizes to be determined by STB functionality requirements		
Middleware Middleware shall provide full functionality for STB setup, configuration, and TV operation		

Mandatory Eligibility Criteria Part B: DTH STB	Comply Y/N?	Attach evidence (manuals, user guides, datasheet, etc.) and provide the reference page number in your proposal as Proof of Evidence
Main Software Features • DVB PSI/SI support: ○ PAT, PMT, BAT, NIT, SDT, TDT, TOT, EIT p/f, EIT Schedule. • LCN ○ Shall be able to start on Channel 0 • DVB SSU support ○ Minimum Simple Profile ○ Secure software download mechanism to be established with Nagravision as the co-signatory. • Running Mode basic functions: ○ Channel change ○ Volume +/- ○ Audio mute ○ Switch between TV/Radio ○ Info (banner) ▪ Level 1: P/F information ▪ Level 2: Present program, Extended information ○ Menu ○ EPG ▪ 7 Days		

Mandatory Eligibility Criteria Part B: DTH STB	Comply Y/N?	Attach evidence (manuals, user guides, datasheet, etc.) and provide the reference page number in your proposal as Proof of Evidence
Connectors • F-Type female input connector • 3x RCA or mini jack with breakout cable supplied for: ○ Analogue SD video output (Composite) ○ Analogue audio left output ○ Analogue audio right output • HDMI output ○ Minimum v1.4 ○ With HDCP • Power input (external PSU)		
Remote Control Unit (RCU) • RCU shall provide full functionality for STB setup, configuration, and operation • Batteries shall be supplied.		
Front Panel Unit (FPU) • LED(s) to indicate the following states as a minimum: ○ Off/Standby ○ On/Running Mode ○ Error ○ RCU Keypress Ack • Buttons ○ Power ○ Channel +/-		

Mandatory Eligibility Criteria Part B: DTH STB	Comply Y/N?	Attach evidence (manuals, user guides, datasheet, etc.) and provide the reference page number in your proposal as Proof of Evidence
Accessories The decoder shall be supplied with the following accessories: • PSU (if external). ○ PSU cord to be of a length of at least 1.5m. • Composite (CVBS) video/stereo audio cable, of length at least 1.5 m, terminated with RCA connectors. • HDMI cable at least 1.5m • A remote-control unit (RCU) and batteries. • The user manual clearly describes the decoder menu functions. • Quick guide (in English and at least one other official language), that contains a basic wiring diagram, which shows alternative connections for installations.		
Warranty: A minimum warranty of 2 (Two) years		
Training: The bidder must provide On-site or Off-site training on DTH STB functionality for Sentech technical staff.		
SLA Support: Support and Maintenance agreement for a minimum of 5 years		

Mandatory Eligibility Criteria Part B: DTH STB	Comply Y/N?	Attach evidence (manuals, user guides, datasheet, etc.) and provide the reference page number in your proposal as Proof of Evidence
Repair Centre: - Indicate the location (s) of the repair centre - State the logistic process from collection to return of the units - Sentech may be required to visit the repair centre		

Optional Features/Devices (not to be scored)

Tenderers to indicate if they have these Features and/or devices in their current product roadmap.

Features And/Or Devices	YES/NO	Comment
USB PVR PVR functionality using USB flash storage. Use cases can include recording to storage (protected), playing media from storage, and software updates from storage.		
Hard Drive PVR Using DUAL DVB-S2 TUNER PVR functionality using internal hard drive storage (minimum 500GB capacity) Use cases can include time-shifting, record to storage (protected), and play media from storage.		
SI Tables STB to support Service Region Restriction and service packing using customised DVB-SI and CAS		

22.1.4 Evaluation Criteria – Part C: iDTV (Integrated Digital Television)

Mandatory Criteria

Service Providers MUST comply with ALL the criteria below to be evaluated further:

Mandatory Eligibility Criteria Part C: iDTV	Comply Y/N?	Attach evidence (manuals, user guides, datasheet, etc.) and provide the reference page number in your proposal as Proof of Evidence
Bidders must meet the local content minimum threshold required for the supply of iDTV Complete and submit SBD 6.2 with relevant annexures (C, D & E)		
Front-End • DVB-T2 (in accordance with EN 302 755) • Code Rate: 1/2, 2/3, 3/4, 5/6, 4/5, 3/5 • Constellation: QPSK, 16 QAM, 64 QAM, 256 QAM; both rotated and non-rotated • Guard Interval: 1/128, 1/32, 1/16, 19/256, 1/8, 19/128, 1/4 • Transmission mode: 1k, 2k, 4k, 8k normal and extended, 16k normal and extended, 32k normal and extended. • Pilot Pattern: PP1, PP2, PP3, PP4, PP5, PP6, PP7, PP8 • Input mode: Mode A (single PLP) and Mode B (multiple PLPs – common PLP, Type 1 and 2) • Normal and High-Efficiency Modes.		
Tuning • The TV shall be capable of performing automatic tuning over the frequency ranges: ○ VHF: 174MHz – 254 MHz ○ UHF: 470MHz – 862 MHz • The TV shall have a manual tuning mode where the user enters a frequency or channel number • The TV shall ignore non-DTT and Pay-TV services when tuning [e.g. DVB-H] •		

Mandatory Eligibility Criteria Part C: iDTV	Comply Y/N?	Attach evidence (manuals, user guides, datasheet, etc.) and provide the reference page number in your proposal as Proof of Evidence
System MPEG-2 Transport Stream (in accordance with ISO/IEC 13818-1)		
Video Decoding - Standards: - H.264/MPEG-4 - H.265/HEVC - HD and SD video profiles - Resolutions 1080, 720p, 576p, 576i - Aspect Ratios 4:3, 16:9 - CVBS output - Pillar and Letterbox and support for 16:9 with pan and scan - DVB (SDTV) subtitling - DVB (HDTV) subtitling		
Audio Decoding - Standards: - HE-AAC V2 (Mono or stereo audio pairs) - Stereo output, stereo left replaceable with a mono feed under user control - EPG support for radio services		
Memory RAM and Flash sizes to be determined by TV functionality requirements		
OS The OS shall provide full functionality for TV setup, configuration, and TV operation		

Mandatory Eligibility Criteria Part C: iDTV	Comply Y/N?	Attach evidence (manuals, user guides, datasheet, etc.) and provide the reference page number in your proposal as Proof of Evidence
Main Software Features • DVB PSI/SI support: ○ PAT, PMT, BAT, NIT, SDT, TDT, TOT, EIT p/f, EIT Schedule. • LCN ○ Shall be able to start on Channel 0 • DVB SSU support ○ Minimum Simple Profile ○ Secure software download mechanism to be established • Running Mode basic functions: ○ Channel change ○ Volume +/- ○ Audio mute ○ Info (banner) ▪ Level 1: P/F information ▪ Level 2: Present program, Extended information ○ Menu ○ EPG ▪ 7 Days		
Connectors • RF female input connector [Compliant to IEC 61169-2 or adapters supplied] • Power input		
Remote Control Unit (RCU) • RCU shall provide full functionality for TV setup, configuration, and operation • Batteries shall be supplied.		

Mandatory Eligibility Criteria Part C: iDTV	Comply Y/N?	Attach evidence (manuals, user guides, datasheet, etc.) and provide the reference page number in your proposal as Proof of Evidence
Accessories The TV shall be supplied with the following accessories: • A remote-control unit (RCU) and batteries. • Power cord with a plug that complies with SANS 164-1 • The user manual clearly describes the TV menu functions.		
Warranty: A minimum warranty of 2(Two) years		
Training: The bidder must provide On-site or Off-site training on iDTV functionality for Sentech technical staff.		
SLA Support Support and Maintenance agreement for a minimum of 5 years		
Repair Centre • Indicate the location (s) of the repair centre • State the logistic process from collection to return of the units • Sentech may be required to visit the repair centre		

Optional Features/Devices (not to be scored)

Service Providers to indicate if they have these Features and/or devices in their current product roadmap.

Features And/Or Devices	YES/NO	Comment
Dual Tuner (DVB-T2/DVB-S2) iDTV An iDTV with dual DVB-T2 & DVB-S2 tuners. DVB-S2 tuner to comply with specifications outlined in Part B.		
CI+ Support Common Interface Plus support in accordance with ETSI TS 103 205 and EN 50221. CI+ to be considered mandatory on TVs with the DVB-S2 tuner		
HbbTV support HbbTV support in accordance with ETSI TS 102 796. Service providers should indicate how to activate or load HbbTV on a TV that is already in the field.		
Connector 2 x USB Connectors. At least version 2.0		
Broadband Connectivity Ability to support a USB WIFI adapter for internet connectivity		

22.1.5 Evaluation Criteria – Part D: DTH Dish kit and accessories

Mandatory Criteria

Service Providers MUST comply with ALL the criteria below to be evaluated further:

Mandatory Eligibility Criteria Part D: DTH Dish kit and accessories	Comply Y/N?	Attach evidence (manuals, user guides, datasheet, etc.) and provide the reference page number in your proposal as Proof of Evidence
Bidders must meet the local content minimum threshold required for the supply of DTH Dish Kit and Accessories Complete and submit SBD 6.2 with relevant annexures (C, D & E)		

Mandatory Eligibility Criteria Part D: DTH Dish kit and accessories	Comply Y/N?	Attach evidence (manuals, user guides, datasheet, etc.) and provide the reference page number in your proposal as Proof of Evidence
80 cm Ku-Band DTH Antenna with a gain of 38.5 dBi at 12,750 GHz		
RG6 coaxial cable		
Universal Single LNB: 10.7 to 11.7 (Low Band) and 11.7 to 12.75 (High Band)		
Wall-mounting bracket (DBS6A): Acceptable diameter of 38 mm		
Warranty: 12 Months Warranty for the universal LNB		
Training: The bidder must provide On-site or Off-site training on DTH Dish Kit accessories and installation for Sentech technical staff.		
SLA Support Support and Maintenance agreement for a minimum of 5 years		
Repair Centre - Indicate the location (s) of the repair centre - State the logistic process from collection to return of the units - Sentech may be required to visit the repair centre		

22.1.6 Evaluation Criteria – Part E: DTT Antenna kit and accessories

Mandatory Criteria

Service Providers MUST comply with ALL the criteria below to be evaluated further:

Mandatory Eligibility Criteria Part E: DTT Antenna kit and accessories	Comply Y/N?	Attach evidence (manuals, user guides, datasheet, etc.) and provide the reference page number in your proposal as Proof of Evidence
Bidders must meet the local content minimum threshold required for the supply of the DTT Antenna kit and accessories Complete and submit SBD 6.2 with relevant annexures (C, D & E)		
Wide-band Grid UHF Antenna		
Frequency Range: 470MHz to 862MHz		
Antenna Gain: 10dB at 500MHz to 12dB at 800MHz		
Beam Width: H/V 50 degrees		
Front/Back Ratio: 16-27dB		
Impedance: 75 Ohms		
Directivity (dB) >15 As per ITU-R BT.419-3		
Aluminium mounting pole: Minimum of 2 metres long; minimum 38mm diameter		

Mandatory Eligibility Criteria Part E: DTT Antenna kit and accessories	Comply Y/N?	Attach evidence (manuals, user guides, datasheet, etc.) and provide the reference page number in your proposal as Proof of Evidence
Mounting Brackets: To fit the mounting pole to the wall and the antenna to the pole		
15m COAX cable: RG62 type minimum specification		
Cable connectors: Belling Lee or IEC169-2 connector		
Warranty: A minimum warranty of 1 (One) year		
Training: The bidder must provide On-site or Off-site training on DTT Antenna Kit accessories and installation for Sentech technical staff.		
SLA Support: Support and Maintenance agreement for a minimum of 5 years		
Repair Centre: • Indicate the location (s) of the repair centre • State the logistic process from collection to return of the units • Sentech may be required to visit the repair centre		

NOTE: Bidders that do not comply with all the above criteria will not be evaluated further.

22.2 Functional Criteria

Functionality criteria	Proof Required	Points
N/A		
N/A		
N/A		
N/A		
N/A		
Total Points:		

Table 1: Functional Criteria

Total minimum qualifying functional score is ##### points.

23. Risk assessment

All bids that pass the technical evaluation in 22.1 will undergo a risk assessment based on the following framework:

Criteria	Comments
Dishonesty in information presented	
Any additional information received from past references	
Financially and operational sustainability of the Bidder	
Technical conformance of the STBs to the parameters of the Sentech DTT and DTH networks. Bidders will be required to provide samples of the STBs at this stage.	

NB: Sentech may disqualify Bidders based on the outcome of the risk assessment.

24. Evaluation of Price and Preference

This Bid will be evaluated on a points system based on weighted average score for Price and Preference as per Preferential Procurement Framework Act of 2000 (Act 5 of 2000). Accordingly, either the 80/20 or 90/10 preference point system will apply and the highest acceptable Bid will be used to determine the applicable preference point system.

25. Preference Point allocation – 80/20 or 90/10

Price / Preference	Weighting (80/20)	Weighting (90/10)
Preference:	20	10
Price:	80	90
Total must equal:	100	100

Sentech will award preference points according to the following table:

Goal	Points (80/20)	Points (90/10)	Evidence required
Historically disadvantaged by unfair discrimination on the basis of Race	10	5	A valid BBBEE Certificate showing at least 51% black ownership
	5	3	A valid BBBEE Certificate showing at least 25.1 – 50% black ownership
	3	2	Black owned company showing at least 5 – 25% black ownership
	0	0	Below 5%
Historically disadvantaged by unfair discrimination on the basis of Gender (women)	8	4	A valid BBBEE Certificate showing at least 51% women ownership
	4	2	A valid BBBEE Certificate showing at least 25.1 – 50% women ownership
	2	1	A valid BBBEE Certificate showing at least 5-25% women ownership
	0	0	A valid BBBEE Certificate showing at less than 5% women ownership
Historically disadvantaged by unfair discrimination on the basis of disability	2	1	A doctor's note confirming disability or confirmation of disability from the Department of labour (EEA1 form) or equivalent
Total Points	20	10	

26. Price Calculation 80/20

The following formula will be used to calculate the points for price.

$$P_s = 80 \left[\frac{1 - (P_t - P_{min})}{P_{min}} \right]$$

Where:

P_s	=	Points scored for price of bid under consideration
P_t	=	Rand value of bid under consideration
P_{min}	=	Rand value of lowest acceptable bid

27. Price Calculation 90/10

The following formula will be used to calculate the points for price.

$$P_s = 90 \left[\frac{1 - (P_t - P_{min})}{P_{min}} \right]$$

Where:

P_s	=	Points scored for price of bid under consideration
P_t	=	Rand value of bid under consideration
P_{min}	=	Rand value of lowest acceptable bid

28. Declaration of Authority

The undersigned, who warrants that he / she is duly authorised to do so on behalf of the enterprise, confirms that the contents of this Bid Data is understood and all requirements will be adhered to.

Name of Bidder	Signature	Date	Designation

TABLE 1: REFERENCES

Please complete the customer reference table and relevant Contact telephone number and attach reference letters.

Customer		Service Provided	Contact Person	Contact no.	tel.	Contractual commencement date	Contractual completion date
1							
2							
3							
4							

5						
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Name of Tenderer	Signature	Date