



INVITATION TO BID

BID DESCRIPTION

APPOINTMENT OF A SERVICE PROVIDER FOR OPTIMISATION, INSTALLATION AND SUPPORT FOR VIDEO CONFERENCING EQUIPMENT IN MEETING VENUES OVER A PERIOD OF 36 MONTHS FOR THE NATIONAL RESEARCH FOUNDATION (NRF) IN BRUMMERIA, PRETORIA

ATTENTION – FRAUD ALERT!!!!!!!

It is common for scammers to call potential bidders pretending to be NRF's employees and offering to swing tenders your way for a fee. **DO NOT FALL FOR IT, IT IS A SCAM!**

The NRF and its employees would never offer payment or any other consideration in return for the favourable consideration of a bid. Please report any suspected acts of fraud or corruption to the following toll-free number - 0800 701 701 or SMS 39772.

Bidder Name:		
Number:	NRF/CORP ICT/67/2024-25	
Closing Date	11 April 2025	
Closing Time:	11h00am	
Compulsory Briefing Date & Time Session:	Date: 25 March 2025 Time: 10h00 to 12h00	
Venue:	Tiyo Soga	
Address:	National Research Foundation (Brummeria, Pretoria) Darryl Lloyd	
Contact Person	Darry Lloyd (d.lloyd@nrf.ac.za)	
Electronic Bid Submission	Size of the email (document): 20MB	
Email Address	bids@nrf.ac.za	
Bids Naming	Split documents into: 1. Technical Proposal 2. Pricing Schedule	
Bidding procedure and Technical information enquiries may be directed in writing to:		
Section	Supply Chain Management	Technical information enquiries
Contact person	SCM Coordinator	Project Manager
Email address	bids@nrf.ac.za	d.lloyd@nrf.ac.za

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INTRODUCTION AND BID PROCEDURE

1. INTRODUCTION TO THE NRF

The National Research Foundation Act, 19 of 2018 as amended, establishes the National Research Foundation ("NRF") as the juristic legal entity that will contract with the awarded bidder. Please visit the NRF website (<https://www.nrf.ac.za>) for more information.

2. BACKGROUND TO RIISA

The Research, Innovation, Impact, Support, and Advancement (RIISA) is a business unit of the NRF. RIISA is a multi-disciplinary organisation promoting and supporting research through funding, human resources development and provision of necessary facilities to facilitate the creation of knowledge, innovation, and development in all fields of research, including indigenous knowledge, and thereby to contribute to the improvement of the quality of life of all the people of the republic and Southern Africa. Further information about RIISA can be found on www.nrf.ac.za

3. THE NEED FOR THIS PROCUREMENT WITHIN RIISA NRF HEAD OFFICE

The NRF seeks to appoint a service provider for the optimisation, installation and support of video conferencing equipment in two auditoriums, two executive boardrooms and eight meeting venues (12 venues in total) to utilise the NRF's Microsoft Office 365 subscription to enable cross-platform Video Conferencing from Teams to Zoom including other platforms i.e. Google, WEBEX, etc. over a period of 36-months.

Out of all the 12 venues, 10 venues have already been fitted with Video Equipment that requires Re-installations and two venues being 1x 60-Seater auditorium and 1x 30-Seater boardroom requires new installations. It is anticipated the existing video conferencing infrastructure will be removed from the venues, it therefore requires that the service provider provides a guarantee on the safe removal and the handling of the existing video equipment with the appointed NRF representatives.

The solution must include extended warranties and maintenance agreements as specified under the detailed specification section in this document.

4. THE BID PREPARATION

Validity period from date of closure:

The validity period for price offers is set at 90 days. The award will be made within this time period.

Original bid documents for contract signing

The original digital document package received from bidders is filed in a secure location. In the case of a discrepancy between the evaluation copies and the master record or a discrepancy between the original package with the NRF and the bidder's copy, the original package in the secure location prevails. A digital copy is taken of the document package for use in the evaluation and decision making process.

Clarification

If the respondent wishes to clarify aspects of this request or the acquisition process, they must write to the RIISA representative(s) listed on the cover page of this bid document under the enquiries section.

NRF-RIISA provides a response (including an explanation of the query, but without identifying the source of the query) to all prospective, identifiable bidders (per the briefing session attendance register) within two working days of receipt of the query. NRF reserves the right not to appoint any bidder.

Response preparation costs

Bidders are responsible for all costs associated with the preparation and submission of their bids. The NRF is not liable for any costs incurred by a bidder in the process of responding to this invitation, including on-site presentations.

Counter proposals

No counter proposals or variations are accepted.

Central Supplier Database registration

The NRF is allowed legally to contract with suppliers/service providers registered on the National Treasury's Central Supplier Database (CSD) and who have passed the due diligence tests e.g. clear tax clearance. Respondents to this bid must complete the SBD 1 on pages **Error! Bookmark not defined.** to 85 with their Master Registration Number (Supplier Number) for registration and tax compliance verification.

Collusion, fraud, and corruption

Any effort by the bidder to influence evaluation, comparisons, or award decisions in any manner will result in the rejection and disqualification of the bidder concerned.

Fronting (Hiding Beneficial Ownership)

NRF condemns any form of fronting/hidden beneficial ownership especially where defeating real empowerment through not conducting themselves in accordance with the Constitution and in an honest, fair, equitable, transparent, and legally compliant manner. NRF's evaluation committees will conduct or initiate enquiries to determine the accuracy of bidders' representations. Should NRF suspect any form of fronting, the bidder will be given 7 days from date of notification to provide evidence that such fronting does not exist. NRF, upon confirmation of fronting, will invalidate the bid or any contracts entered with the bidder, apply for the bidder to be restricted from conducting business with the public sector for a period not exceeding 10 years, and exercise any other remedies NRF may have against such a bidder.

Disclaimers

The NRF has produced this document in good faith. The NRF, its agents, employees and associates do not warrant its accuracy or completeness; make no representation, warranty, assurance, guarantee, or endorsements to any third parties concerning the document. The NRF has no liability towards the bidders in connection therewith.

Bidders are responsible for their own preparation due diligence.

General definitions

"Bid" means a written offer in a prescribed or stipulated form in response to an invitation by the National Research Foundation for the provision of goods or services, through price quotations, advertised competitive bidding processes or proposals.

"Specific Goals" means the specific social-economic goals set for this bid in terms of PPPFA section 2(1d and 1e) for which preference points are claimed on the SBD 6.1 Preference Claim form.

“Broad-Based Black Economic Empowerment Act” means the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003).

“Contract” means the entire bid document inclusive of scope of work, specification, price conditions, price quote table, service delivery conditions, performance conditions with their key performance indicators, and general conditions when attached to the Standard Bidding Document 7 (SBD 7) which has been signed by the awarded bidder and the NRF;

“Equipment” means the operational unit including spares, replacement components, consumables, sub-systems, firmware, and software that delivers the specified output.

“NRF” means the National Research Foundation and it is used interchangeably with its business units managing the contract being Research, Innovation, Impact, Support, and Advancement.

5. THE BIDDER SELECTION PROCESS

Stage 1 – Verification of the ability of a bidder to provide the contract output in accordance with specifications and conditions as set out in the bid documents to enter the price competition.

Responsive to submission requirements

Bids that do not meet all the submission requirements in the bid document are a non-responsive bid that is disqualified.

Meeting technical specifications

Bids that do not meet the minimum technical specifications and thresholds in the bid document are disqualified.

Due Diligence

Bids that fail due diligence are disqualified i.e. contacting the references to verify truthfulness of the given references and may conduct interviews with bidders to clarify their bid submission.

Stage 2 – Pricing Evaluation

NRF-RIISA evaluation committee evaluates only qualifying bidders’ price offers. NRF-RIISA evaluation committee compares each bidder’s price offer on an equal and fair comparison basis equitable to all bidders, considering all aspects of the bid’s pricing requirements. NRF-RIISA’s evaluation committee ranks the qualifying bids on price points scored in accordance with the PPPFA formula - with the lowest priced bid receiving the highest price score.

NRF-RIISA has selected the Price: Preference framework of 80 points:20 points.

NRF-RIISA’s evaluation committee verifies validity of the preference points claimed for societal goals in terms of PPPFA section 2(1e) set out in the SBD6.1 (pages 85 to 90) and, where verified, add these points to the price ranking points of the bid.

Stage 3 – Award and Contract Signing

NRF-RIISA’s evaluation committee recommends to the NRF’s Bid Adjudication Committee the bidder for subsequent approval by the Delegated Authority for signing the contract subject to the final verification of the bidder’s tax status as set out in the SBD 1 through the CSD.

Cancellation of the bid prior to award

NRF-RIISA reserves the right to cancel this bid invitation prior to making an award were.

- 1) Due to changed circumstances there is no longer a need for this procurement, or

- 2) No bids meet the required specifications, or
- 3) The bidding procedure listed in this bid document contravenes the Promotion of Administrative Justice Act, 3 of 2000; or
- 4) Where the price is too low/high in comparison to the market price range determined by NRF-RIISA or the budget allocated by NRF-RIISA to this procurement.

6. OBJECTIVE OF THE CONTRACT

The NRF seeks to appoint a service provider to standardise and install video conferencing equipment in two auditoriums, two executive boardrooms and eight meeting venue to utilise the NRF's Microsoft Office 365 subscription to enable cross platform Video Conferencing from Teams to Zoom including other platforms i.e. Google, WEBEX, etc.

The NRF main campus currently has 10 production video conferencing meeting venues with the following operational infrastructure currently installed that requires Re-Installations. The NRF also requires new VC Installations for 2 meeting venue within operational infrastructure as listed below:

Operational VC Venues

- Albert Luthuli Auditorium – 220 seater
 - 2 x 9 x 55" Video Wall
 - 2 x 55" Samsung monitors facing stage for presenter view
 - 2 x 65" Samsung Monitors for presenting auditorium presentations in the over flow area
 - 2 x Ceiling mounted speakers for over flow area
 - 1 x Extron TLP Pro 720 T
 - 1 x Extron TLP Pro 725 T
 - 1 x Barco Clickshare
 - 1 x Lenovo VC PC
 - 1 x Lenovo Thinksmart Controller
 - 112 x Televic Goose Neck Microphones (1 x Delegation Control)
 - 15 x Ceiling Mounted speakers
 - 1 x Aver Stage Facing HD Camera
 - 1 x Aver Auditorium Facing HD Camera
 - 4 x Beyerdynamic WA-A54 Antenna Splitter
 - 6 x Beyerdynamic TG 500
 - 3 x Beyerdynamic Opus NE 600 S UHF True Diversity Receiver
 - 1 x Extron USB Extender
 - 1 x Mecer SMF PC
 - 1 x 15" Monitor
 - 3 x Extron DTP HDMI 230 Rx
 - 1 x Extron DTP HDMI 230 Tx
 - 1 x Extron DA2 HD 4K
 - 1 x TX TPHD-70-Tx
 - 1 x Extron DTP CrossPoint 4K Series
 - 1 x DLink DGS-1016D Switch
 - 1 x Extron DA4 HD 4K

- 1 Extron IPL Pro CR88
- 2 x Televic Volume Controllers
- 2 x Extron Xtra XPA 2001
- 2 x Extron DMP 128 Digital Matrix Processor
- 1 x RT System Delta 1 Kva UPS
- Nelson Mandela Executive Boardroom – 36 seater
 - 1 x Epson Laser Projector with remote control
 - 1 x Electric Projector Screen
 - 1 x 65" Clevertouch Monitor with remote control
 - 1 x Aver HD Camera
 - 2 x Ceiling mounted microphones
 - 2 Ceiling mounted speakers
 - 2 x Extron wall mounted speakers
 - 1 x Extron TLP Pro 720 T
 - 1 x Barco Clickshare
 - 1 x Lenovo VC PC
 - 1 x Lenovo Thinksmart Controller
 - 1 x HDB T
 - 1 x Extron USB Extender Plus T
 - 1 x Extron DTP HDMI 330 Rx
 - 1 x Extron DA2 HD 4K
 - 1 x Alfatron ALF-WUK4A HDMI2.0 4x1 Switcher
 - 1 x Extron Xtra XPA 2003C
 - 1 x Extron DTP HDMI 330Tx
 - 1 x Extron DTP HDMI 230 Tx
 - 1 x Extron HDMI 330 Rx
 - 1 x USB Extender Plus R
 - 1 x Extron HAE 100 HDMI Audio Extractor
 - 1 x Extron IPCP Pro 250
 - 1 x Extron Xtra XPA 2001
 - 1 x Extron SW2 HD 4K
 - 1 x Extron XPA 2003C
 - 1 x Extron DMP 128 Plus

- 1 x Dell Keyboard and mouse
- 3 x RT Systems Delta 1KvA UPS
- Patricia Berjak Meeting room – 20 seater
 - 1 x 55" Clevertouch Monitor with remote control
 - 1 x Yaelink MTouch Plus
 - 1 x Yealink Camera with remote control
 - 1 x Barco Clickshare
 - 4 x Yealink Ceiling Mounted Speakers
 - Dell Bluetooth Keyboard and Mouse
 - 1 x RT Systems Delta 1 KvA UPS
- Eskia Mphahlele Executive Boardroom – 16 seater
 - 1 x 55" Clevertouch Monitor with remote control
 - 1 x Yaelink MTouch Plus
 - 1 x Yealink Camera with remote control
 - 1 x Barco Clickshare
 - 9 x Beyerdynamics Button Microphones
 - 1 x Extron DMP-128
 - 4 x Speakers
 - Dell Bluetooth Keyboard and Mouse
 - 1 x RT Systems Delta 1 KvA UPS
- Philip Tobias Meeting room – 16 seater
 - 1 x 55" Clevertouch Monitor with remote control
 - 1 x Yaelink MTouch Plus
 - 1 x Yealink Camera with remote control
 - 1 x Barco Clickshare
 - 8 x Beyerdynamics Button Microphones
 - 1 x Extron DMP-128
 - 2 x Speakers
 - Dell Bluetooth Keyboard and Mouse
 - 1 x RT Systems Delta 1 KvA UPS
- FW De Klerk Meeting room – 12 seater
 - 1 x 65" CTouch Screen with remote control
 - 1 x Barco Clickshare

- 1 x Huddly HD Camera
- 2 x Tamoy Ceiling Mounted speakers – Not connected
- 1 x Dell Keyboard and Mouse
- 2 x RT Systems Delta 1 Kva UPS
- JM Coetzee Meeting Room – 12 seater
 - 1 x 65" CTouch Monitor with remote control
 - 1 x Logitech HD Camera
 - 1 x Barco Clickshare
 - 2 x Tamoy Ceiling Mounted speakers
 - 1 x Dell Keyboard and Mouse
 - 2 x RT Systems Delta 1 Kva UPS
- Sydney Brenner Meeting Room – 12 seater
 - 1 x 65" Clevertouch Monitor with remote control
 - 1 x Logitech HD Camera
 - 1 x Barco Clickshare
 - 2 x Tamoy Ceiling Mounted speakers
 - 1 x Cloud MS 60 Amp
 - 1 x Dell Keyboard and Mouse
 - 2 x RT Systems Delta 1 Kva UPS
- Nadine Gordimer Meeting room – 12 seater
 - 1 x 65" Clevertouch Monitor with remote control
 - 1 x Logitech HD Camera
 - 1 x Barco Clickshare
 - 2 x Tamoy Ceiling Mounted speakers
 - 1 x Cloud MS 60 Amp
 - 1 x Dell Keyboard and Mouse
 - 2 x RT Systems Delta 1 Kva UPS
- Atrium Meeting room – 24 seater
 - 1 x 65" Clevertouch Screen with remote control
 - 1 x Jabra Speak 710
 - 1 x Barco Clickshare
 - 1 x Huddly HD Camera
 - 1 x Dell Keyboard and Mouse

Non Operational VC Venues

- New installation: Tiyo Soga Auditorium – 60 seater

no equipment installed.

- New installation: Reinhardt Arnd Boardroom – 30 seater
 - 1 x 65" Clevertouch Monitor with remote control
 - 1 x Logitech HD Camera
 - 12 x Crown Button Microphones – Not connected
 - 5 x JBL Ceiling mounted speakers – Not connected
 - 1 x NEC Projector - Not connected

The current production meeting venues are making use of various video conferencing infrastructure ranging from video walls, projectors, NovoTouch, CTouch and Clevertouch touch screens, Lenovo and Yaelink Touchpanels, ceiling mounted microphones, various makes of table-mounted microphones, Bluetooth microphones, Extron controllers, BARCO and Logitech remote sharing, Huddly, Logitech, Sony and Yealink cameras, etc.

The combination of all these different infrastructures for the meeting venues has proven to be problematic for end-user ease of use, IT support and obtaining support and maintenance from the various vendors who have installed these different video conferencing solutions during the past few years.

In too frequent instances individual VC infrastructure components in these meeting venues fail which makes the specific meeting venue not usable. Rectifying the individual issues can take from a few hours to weeks to resolve.

Taking the operational risk of the current VC collaboration as described above, the NRF requires to standardise its VC infrastructure to ensure reliable production VC collaboration, end-user ease of use and minimal requirement for internal IT support and vendor maintenance.

REDISTRIBUTION OF REDUNDANT VIDEO CONFERENCING EQUIPMENT

Since the 5 x meeting room venues in the Atrium area equipment have reached end of life it is planned to move the operational equipment to these venues in case when the existing equipment installed fails as follows:

- Philip Tobias to be moved to Sydney Brenner
- Patricia Berjak to be moved to Nadine Gordimer
- Eskia Mphahlele to be moved to JM Coetzee
- Nelson Mandela to be moved to FW de Klerk

7. CONTRACT PERIOD

- 7.1.1 The contract period for this bid contract is for the duration of thirty-six months (36 months) in a phased implementation approach.

8. BIDDER'S QUALIFYING REQUIREMENTS

Only those bidders that meet the following minimum qualifications to execute the contract proceed to the price competition and awarding stages.

- 8.1. The bidder must be an authorized reseller of the proposed Video Conferencing equipment, a letter from the OEM stating they are an authorised dealer must be submitted.
- 8.2. The bidder must have qualified technicians. A CV and certificate from a training organisation showing training must be submitted for proof.
- 8.3. Bidders provide three (3) written references with contact details for those customers for whom the bidder has completed work within the last five years that meets the minimum threshold of "Meets requirements"
- 8.4. The service provider will need to perform and submit a detailed systems and needs analysis per venue to ensure that the proposed solution will ensure uniform standardisation of all the meeting venues which will include end user ease of use. Microsoft 365 integration, video conferencing capabilities including Zoom, MS Teams, WEBEX, Google. etc
- 8.5. Background to the bidder bidding for the contract:
 - 8.5.1. The bidder provides its legal detail on the SBD1 form in this document with the attached CSD report. (Pages 81 to 82).
- 8.6. Ethical Requirements
 - 8.6.1. The bidder must confirm that there are no interests with the NRF, has clean business practices, and has determined its bid independently from others as reflected on its submitted SBD 4 (Pages 83 to 875).
- 8.7. Price Submission Administration
 - 8.7.1. The bidder has submitted the completed SBD3.1 (pages 73 to **Error! Bookmark not defined.**) in this document in a separate electronic folder.
 - 8.7.2. The bidder must detail schedules to allow the Evaluation Committee to assess the completeness of their pricing offer.
 - 8.7.3. The bidder must submit the completed Schedule of Equipment offered in response to the specification (See SBD 3.1 pages (pages 73 to **Error! Bookmark not defined.**))
 - 8.7.4. The bidder has provided details for any claim for preference points (See page 85 to 90).

9. DETAILED SPECIFICATION OF THE BID REQUIREMENTS (SCOPE OF WORK)

The bidder is required for the optimisation, installation and support of video conferencing equipment in two auditoriums, two executive boardrooms and eight meeting venue to utilize the NRF's Microsoft Office 365 subscription to enable cross platform Video Conferencing from Teams to Zoom including other platforms i.e. Google, WEBEX, etc. This solution should be handled as a phased approach over a period of 36 months as detailed under the specifications in this document.

The NRF is looking to implement cutting-edge video conference collaboration technology over a period of 36 months, that will assist in standardising the operation of all the venues and the main requirements are as follows:

All-in-one integrated video conferencing collaboration stand-alone units that offer at least the following functionalities:

- End user ease of use
- Microsoft Teams functionality
- Zoom functionality
- Other 3rd Party Video Conferencing platform integration, i.e. WEBEX, GOOGLE, etc.
- MS Office 365 integration including Outlook functionality and calendar integration
- Windows Operating System
- Bring Your Own Device (BYOD) including remote presentation functionality
- Camera follows voice functionalities
- Touchscreen with white boarding functionalities including remote control

Please note: In most of the current meeting venues microphones, speakers and cameras have been installed. Although the proposed technologies and solution need to cater for microphone reception, speakers and cameras for the different sizes of the meeting venues ranging from 12 seaters to 220 seater venues without the integration into the existing infrastructure, the NRF can consider integration of the proposed solution in some of the meeting venues.

PHASE 1:

NELSON MANDELA Executive Boardroom

General Requirements

The All-in-one terminals should include:

- Interactive Panel;
- Video conference codec;
- Built-in Speaker;
- Built-in microphone;
- Built-in triple-lens camera;
- OPS module;
- Remote control unit.

Step 1

- Remove redundant infrastructure
- Sign off of redundant equipment to NRF IT Representative

Step 1

- Remove redundant infrastructure
- Handover of redundant equipment to NRF IT Representative

Step 2a – Supply and Installation of the following specification main display equipment:

Installation of main display unit

- 1 x 138-inch R/B: $\geq 1920 \times 1080$; G: $\geq 1920 \times 2160$; aspect ratio: $\geq 16:9$
- Pixel structure: flip-chip COB

Optical Specifications

- Display contrast: $\geq 20000:1$
- Horizontal/Vertical viewing angle: $\geq 160^\circ$ (If the display brightness is halved, the angle is greater than or equal to 160° . If the brightness is reduced to $1/3$, the angle is greater than or equal to 170° .)
- Viewing angle (30° color cast): $\Delta u'v' < \pm 0.01$
- Chrominance uniformity $\Delta u'v'$: $C_{xy} \leq \pm 0.003$
- Color temperature: 5000K to 9500K (adjustable; default value: 8000K)
- Brightness: 300 nits to 1000 nits (adjustable; default value: 600 nits; support for white field with 1000 nits)
- Screen gray level: ≥ 16 bits
- Color gamut: $\geq 85\%$ BT2020, $\geq 99\%$ sRGB
- Brightness uniformity: $\geq 97\%$
- Refresh rate: ≥ 3840 Hz; frame changing frequency: ≥ 60 Hz
- Screen surface temperature rise: $\leq 20^\circ\text{C}@600$ nits
- Surface reflectivity (SCI): $\leq 7\%$
- Black uniformity: $\Delta E^*_{ab} < 0.5$

Speakers

- Built-in speaker: $\geq 2 \times 3$; support for stereo surround and bass
- Rated power of two groups of speakers + long-term rated power of a single speaker group: $\geq 2 \times 20$ W + 20 W (super bass)
- Speaker sensitivity: $\geq 84 \pm 3$ dBsp (1 m free field test)
- Speaker volume: ≥ 95 dB SPL@1 m (proper sound playback)
- Capability to connect to existing speaker system in the venue if required.

System Interconnection

- The display must interact with conference endpoints using HDMI CEC commands.

Audio/Video Input

- Audio and video input ports: $\geq 1 \times$ HDMI 2.0 (on the front panel); must support for automatic sleep when there is no HDMI signal detected, and wakeup when a signal is detected.

External Camera

An external camera needs to be fitted to face the members in the meeting room with camera follows voice functionality:

- 4K30 camera.
- Horizontal viewing angle: 80° , vertical viewing angle: 50°
- 3x Optical Zoom, 0.5° Ultra-high precision, noiseless rotation
- A privacy cover to physically close the camera.
- Auto-framing, automatically adjusts the camera based on the location of the participants. The camera displays all participants in a panoramic view and ensures that the participants are displayed in the centre.
- Speaker tracking, automatically switch to the close-up picture of speaker without manual intervention.

Microphone Requirements

- Capability to connect external microphones for wider pickup angles.

Backup power

- RJ45 Network Monitored UPS backup power unit with 20min standby time at 100% load of all the Video Conferencing equipment in operation

Certification

- Certifications and standards: CE, CB

Step 2b – Supply and Installation of the control unit:

Installation of control unit (This unit must also be capable of screen extension and duplicating to the 138" main display.

Touch Screen Requirements

- 1x 65-inch D-LED touch screen, 4K60 resolution on trolley
- System configuration: 8 core CPU, 12 GB RAM, 64GB Flash
- Zero-gap bonding
- Must support anti-glare (AG)
- Automatically adjusts screen brightness based on light sensing
- Optical anti-blue light
- Screen response time: Not more than 8ms
- Touch accuracy: $\pm 1\text{mm}$
- 20 touch points
- Remote control unit

Camera Requirements

- 4K30 built-in camera.
- Horizontal viewing angle: 80°, vertical viewing angle: 50°
- 3x Optical Zoom, 0.5deg Ultra-high precision, noiseless rotation
- A privacy cover to physically close the camera.
- Auto-framing, automatically adjusts the camera based on the location of the participants. The camera displays all participants in a panoramic view and ensures that the participants are displayed in the centre.
- Speaker tracking, automatically switch to the close-up picture of speaker without manual intervention.

Microphone Requirements

- At least 6 built-in microphone arrays
- The sound pickup radius at least 12 meters, and the sound pickup angle: 180°.
- Capability to connect external microphones for wider pickup angles.
- 20 kHz full-frequency audio pickup, sampling frequency: 48 kHz
- Acoustic echo cancellation (AEC), automatic gain control (AGC), automatic noise reduction (ANR)

External Microphone Requirements

- Omnidirectional microphone with a sound pickup distance of at least 6 meters.
- Two microphones must be able to be cascaded.
- 20 kHz full-frequency audio pickup, sampling frequency: 48 kHz.
- Acoustic echo cancellation (AEC), automatic gain control (AGC), automatic noise reduction (ANR)

Speaker Requirements

- Include two built-in speakers, frequency response range: 100Hz-20KHz, total power not less than 40 W

Interface Requirements

- Video In: 2 x HDMI 2.0 (4K60)
- Video Out: 1 x HDMI 2.0 (4K60)
- Audio In: 1 x 3.5mm
- Audio Out: 1 x 3.5mm
- 1 x Omni-directional microphone port, support the cascading of two microphones.
- 3 x USB Type-A 3.0, support USB flash drive, mouse, keyboard, microphone, speaker, remote control and wireless dongle for projection. [At least 2 interfaces should be on the front]
- 1 x USB Type-C, support USB flash device, wireless dongle for projection. The interface should be on the front
- 1 x 10/100/1000M RJ45 port
- 1 x COM port (RJ45)
- 1 x OPS slot for PC module.

- Wi-Fi 5 and Wi-Fi 6, IEEE802.11a/b/g/n/ac/ax network protocol
- Wi-Fi 2.4 GHz and 5 GHz dual-band. Wi-Fi hotspot and Wi-Fi client can be enabled at the same time.

OPS Model Requirements

- The performance should be no less than I5-10500, 8G DDR4, and 128G SSD.
- Video out: 1 x HDMI 1.4, 1 x DP 1.2.
- Audio in: 1 x 3.5mm.
- Audio out: 1 x 3.5mm.
- USB: 3 x USB Type-A 3.0, 3 x USB Type-A 2.0.
- Windows 11 enterprise operate system
- Capability of Microsoft 365 integration. The NRF do own the licenses and will install the software.

Whiteboard Requirements

- Writing latency no more than 16ms
- The built-in whiteboard must support handwriting, drawing, erasing, marking, saving, zooming, and locking the whiteboard. The background colour can be changed.
- The whiteboard must support page turning. A maximum of 100 pages are supported
- Selectable pen type: pencil, pen, and highlighter. Pen colour: colour palette.
- Full-screen annotation: You can take a screenshot of any screen to enter the whiteboard annotation
- The contents of the whiteboard can be saved locally and edited when you open it for the second time, saved in an external USB flash memory, sent to an email.
- When writing on the electronic whiteboard, the hand-drawn graphics can be recognized as standard geometric figures, and the hand-written text can be recognized as standard printed text.

Projection Requirements

- Wired projection through HDMI cable. Projection resolution support up to 1080p60fps and 4K30fps.
- Wired projection through USB Type-C cable. Projection resolution support up to 1080p60fps and 4K30fps. When PC is projected to the device, the device can control the PC reversely without extra cables.
- Wireless projection by entering the projection code on the mobile phone and PC. Projection resolution support up to 1080p60fps and 4K15fps. When PC is projected to the device, the device can control the PC reversely.
- Wi-Fi Direct projection. Users do not need to configure a Wi-Fi router or change the network of their mobile phones or PCs during screen projection. Projection resolution: up to 1080P60fps and 4K15fps. When PC is projected to the device, the device can control the PC reversely.
- Support wireless dongle for one-click projection for PC. Projection resolution: up to 1080p60fps or 4K15fps. The device can control the PC reversely.
- Must allow users to project through menus on the mobile phone without projection APP.

Video Conferencing Requirements

- Supports video conference function without installation conference APP.
- Video codec: H.264BP, H.264HP and H.265.
- Voice codec: G.711A, G.711U, G.729A, G.722, G.722.1C, Opus and AAC-LD.
- Mainstream video resolution: 1080p 30fps, 720p 60fps, 720p 30fps, 4CIF and CIF
- Presentation resolution up to 1080p 30fps.
- Must support the ITU-T H.323 and IETF SIP communication protocols to ensure good interoperability.

Third-Party Video Conferencing Requirements

- Must support third-party video conference APP
- The camera, microphone and speaker can be used for third-party video conference APP.
- The camera auto-framing and voice tracking features can be used for third-party video conference APP

Openness Requirements

- Android apps can be installed.
- Support APP store dedicated to large screens device.
- Supports APIs, third-party applications can perform registration, conference call, conference control, configuration query, and address book query based on the APIs.

Special Features Requirements

- Multi-window: The desktop can be divided into two windows that display two applications. User can change the size of the two windows by dragging the windows.
- Must support BYOM, device hardware capabilities such as microphones, cameras, speakers, and touchscreens can be easily used as peripherals for 3rd party conferences on PC, by using Type-C cables, projection app, or wireless dongle
- Must support dynamic wallpapers and static wallpapers. Wallpapers can be changed and customized to corporate colours
- Clone screen content to another screen via HDMI cable
- 802.11a/b/g/n/ac/ax protocols and WPA2 authentication.
- Supported protocols must include: TCP/IP, RTP, RTCP, DHCP, DNS, SMTP, SNTP, SSH, HTTP, HTTPS, and TR-069

Certificate Requirements

- CE Certificate

Backup power

- RJ45 Network Monitored UPS backup power unit with 20min standby time at 100% load of all the Video Conferencing equipment in operation

Step 3

- **Testing of installation including:**
 - Network Connectivity
 - Screen operation
 - Windows Operating System
 - MS Teams functionality
 - Zoom functionality
 - Google Video functionality
 - White boarding
 - Remote presentation functionality
 - Speaker output
 - Microphone input
 - Camera follows voice functionality
 - UPS functionality under full load

Step 4 – Sign off

- Technical diagram of the installation describing the purpose and location of all the components
- Technical manual for IT support including a description, location and operation of all installed components
- User manual with detailed procedures on:
 - Turning the system on and off
 - Setting the volume
 - Selecting the correct source for Video conferencing or remote presentation
 - Starting a Video conferencing session on MS Teams, Zoom and Google
 - Using the Whiteboard functionality
 - Starting a remote sharing session

PATRICIA BERJAK Meeting Room

General Requirements

The All-in-one terminal should include:

- Interactive Panel;
- Video conference codec;
- Built-in Speaker;
- Built-in microphone;
- Built-in triple-lens camera;
- OPS module;
- Remote control unit.

Step 1

- Remove redundant infrastructure
- Handover of redundant equipment to NRF IT Representative

Step 2 – Supply and Installation of the following specification equipment:

Touch Screen Requirements

- 1x 65-inch D-LED touch screen, 4K60 resolution wall mounted
- System configuration: 8 core CPU, 12 GB RAM, 64GB Flash
- Zero-gap bonding
- Must support anti-glare (AG)
- Automatically adjusts screen brightness based on light sensing
- Optical anti-blue light
- Screen response time: Not more than 8ms
- Touch accuracy: $\pm 1\text{mm}$
- 20 touch points

Camera Requirements

- 4K30 built-in camera.
- Horizontal viewing angle: 80°, vertical viewing angle: 50°
- 3x Optical Zoom, 0.5deg Ultra-high precision, noiseless rotation
- A privacy cover to physically close the camera.
- Auto-framing, automatically adjusts the camera based on the location of the participants. The camera displays all participants in a panoramic view and ensures that the participants are displayed in the centre.
- Speaker tracking, automatically switch to the close-up picture of speaker without manual intervention.

Microphone Requirements

- At least 6 built-in microphone arrays
- The sound pickup radius at least 12 meters, and the sound pickup angle: 180°.
- Capability to connect external microphones for wider pickup angles.
- 20 kHz full-frequency audio pickup, sampling frequency: 48 kHz

- Acoustic echo cancellation (AEC), automatic gain control (AGC), automatic noise reduction (ANR)

External Microphone Requirements

- Omnidirectional microphone with a sound pickup distance of at least 6 meters.
- Two microphones must be able to be cascaded.
- 20 kHz full-frequency audio pickup, sampling frequency: 48 kHz.
- Acoustic echo cancellation (AEC), automatic gain control (AGC), automatic noise reduction (ANR)

Speaker Requirements

- Include two built-in speakers, frequency response range:100Hz-20KHz, total power not less than 40 W

Interface Requirements

- Video In: 2 x HDMI 2.0 (4K60)
- Video Out: 1 x HDMI 2.0 (4K60)
- Audio In: 1 x 3.5mm
- Audio Out: 1 x 3.5mm
- 1 x Omni-directional microphone port, support the cascading of two microphones.
- 3 x USB Type-A 3.0, support USB flash drive, mouse, keyboard, microphone, speaker, remote control and wireless dongle for projection. [At least 2 interfaces should be on the front]
- 1 x USB Type-C, support USB flash device, wireless dongle for projection. The interface should be on the front
- 1 x 10/100/1000M RJ45 port
- 1 x COM port (RJ45)
- 1 x OPS slot for PC module.
- Wi-Fi 5 and Wi-Fi 6, IEEE802.11a/b/g/n/ac/ax network protocol
- Wi-Fi 2.4 GHz and 5 GHz dual-band. Wi-Fi hotspot and Wi-Fi client can be enabled at the same time.

OPS Model Requirements

- The performance should be no less than I5-10500, 8G DDR4, and 128G SSD.
- Video out: 1 x HDMI 1.4, 1 x DP 1.2.
- Audio in: 1 x 3.5mm.
- Audio out: 1 x 3.5mm.
- USB: 3 x USB Type-A 3.0, 3 x USB Type-A 2.0.
- Windows 11 enterprise operate system
- Capability of Microsoft 365 integration. The NRF do own the licenses and will install the software.

Whiteboard Requirements

- Writing latency no more than 16ms
- The built-in whiteboard must support handwriting, drawing, erasing, marking, saving, zooming, and locking the whiteboard. The background colour can be changed.
- The whiteboard must support page turning. A maximum of 100 pages are supported
- Selectable pen type: pencil, pen, and highlighter. Pen colour: colour palette.
- Full-screen annotation: You can take a screenshot of any screen to enter the whiteboard annotation
- The contents of the whiteboard can be saved locally and edited when you open it for the second time, saved in an external USB flash memory, sent to an email.
- When writing on the electronic whiteboard, the hand-drawn graphics can be recognized as standard geometric figures, and the hand-written text can be recognized as standard printed text.

Projection Requirements

- Wired projection through HDMI cable. Projection resolution support up to 1080p60fps and 4K30fps.

- Wired projection through USB Type-C cable. Projection resolution support up to 1080p60fps and 4K30fps. When PC is projected to the device, the device can control the PC reversely without extra cables.
- Wireless projection by entering the projection code on the mobile phone and PC. Projection resolution support up to 1080p60fps and 4K15fps. When PC is projected to the device, the device can control the PC reversely.
- Wi-Fi Direct projection. Users do not need to configure a Wi-Fi router or change the network of their mobile phones or PCs during screen projection. Projection resolution: up to 1080P60fps and 4K15fps. When PC is projected to the device, the device can control the PC reversely.
- Support wireless dongle for one-click projection for PC. Projection resolution: up to 1080p60fps or 4K15fps. The device can control the PC reversely.
- Must allow users to project through menus on the mobile phone without projection APP.

Video Conferencing Requirements

- Supports video conference function without installation conference APP.
- Video codec: H.264BP, H.264HP and H.265.
- Voice codec: G.711A, G.711U, G.729A, G.722, G.722.1C, Opus and AAC-LD.
- Mainstream video resolution: 1080p 30fps, 720p 60fps, 720p 30fps, 4CIF and CIF
- Presentation resolution up to 1080p 30fps.
- Must support the ITU-T H.323 and IETF SIP communication protocols to ensure good interoperability.

Third-Party Video Conferencing Requirements

- Must support third-party video conference APP
- The camera, microphone and speaker can be used for third-party video conference APP.
- The camera auto-framing and voice tracking features can be used for third-party video conference APP

Openness Requirements

- Android apps can be installed.
- Support APP store dedicated to large screens device.
- Supports APIs, third-party applications can perform registration, conference call, conference control, configuration query, and address book query based on the APIs.

Special Features Requirements

- Multi-window: The desktop can be divided into two windows that display two applications. User can change the size of the two windows by dragging the windows.
- Must support BYOM, device hardware capabilities such as microphones, cameras, speakers, and touchscreens can be easily used as peripherals for 3rd party conferences on PC, by using Type-C cables, projection app, or wireless dongle
- Must support dynamic wallpapers and static wallpapers. Wallpapers can be changed and customized to corporate colours
- Clone screen content to another screen via HDMI cable
- 802.11a/b/g/n/ac/ax protocols and WPA2 authentication.
- Supported protocols must include: TCP/IP, RTP, RTCP, DHCP, DNS, SMTP, SNTP, SSH, HTTP, HTTPS, and TR-069

Certificate Requirements

- CE Certificate

Backup power

- RJ45 Network Monitored UPS backup power unit with 20min standby time at 100% load of all the Video Conferencing equipment in operation

Step 3

- **Testing of installation including:**
 - Network Connectivity
 - Screen operation
 - Windows Operating System
 - MS Teams functionality
 - Zoom functionality
 - Google Video functionality
 - White boarding
 - Remote presentation functionality
 - Speaker output
 - Microphone input
 - Camera follows voice functionality
 - UPS functionality under full load

Step 4 – Sign off

- Technical diagram of the installation describing the purpose and location of all the components
- Technical manual for IT support including a description, location and operation of all installed components
- User manual with detailed procedures on:
 - Turning the system on and off
 - Setting the volume
 - Selecting the correct source for Video conferencing or remote presentation
 - Starting a Video conferencing session on MS Teams, Zoom and Google
 - Using the Whiteboard functionality
 - Starting a remote sharing session

Step 5: 36-month Warranty (36 months replaces the periods set in GCC15 under General Conditions) on all equipment installed commencing after sign off per venue

ESKIA MPHAHLELE Meeting Room

General Requirements

The All-in-one terminal should include:

- Interactive Panel;
- Video conference codec;
- Built-in Speaker;
- Built-in microphone;
- Built-in triple-lens camera;
- OPS module;
- Remote control unit.

Step 1

- Remove redundant infrastructure
- Handover of redundant equipment to NRF IT Representative

Step 2 – Supply and Installation of the following specification equipment:

Touch Screen Requirements

- 1x 65-inch D-LED touch screen, 4K60 resolution wall mounted
- System configuration: 8 core CPU, 12 GB RAM, 64GB Flash
- Zero-gap bonding
- Must support anti-glare (AG)
- Automatically adjusts screen brightness based on light sensing
- Optical anti-blue light
- Screen response time: Not more than 8ms
- Touch accuracy: $\pm 1\text{mm}$
- 20 touch points

Camera Requirements

- 4K30 built-in camera.
- Horizontal viewing angle: 80° , vertical viewing angle: 50°
- 3x Optical Zoom, 0.5deg Ultra-high precision, noiseless rotation
- A privacy cover to physically close the camera.
- Auto-framing, automatically adjusts the camera based on the location of the participants. The camera displays all participants in a panoramic view and ensures that the participants are displayed in the centre.
- Speaker tracking, automatically switch to the close-up picture of speaker without manual intervention.

Microphone Requirements

- At least 6 built-in microphone arrays
- The sound pickup radius at least 12 meters, and the sound pickup angle: 180° .
- Capability to connect external microphones for wider pickup angles.
- 20 kHz full-frequency audio pickup, sampling frequency: 48 kHz
- Acoustic echo cancellation (AEC), automatic gain control (AGC), automatic noise reduction (ANR)

External Microphone Requirements

- Omnidirectional microphone with a sound pickup distance of at least 6 meters.
- Two microphones must be able to be cascaded.
- 20 kHz full-frequency audio pickup, sampling frequency: 48 kHz.
- Acoustic echo cancellation (AEC), automatic gain control (AGC), automatic noise reduction (ANR)

Speaker Requirements

- Include two built-in speakers, frequency response range: 100Hz-20KHz, total power not less than 40 W

Interface Requirements

- Video In: 2 x HDMI 2.0 (4K60)
- Video Out: 1 x HDMI 2.0 (4K60)
- Audio In: 1 x 3.5mm
- Audio Out: 1 x 3.5mm
- 1 x Omni-directional microphone port, support the cascading of two microphones.
- 3 x USB Type-A 3.0, support USB flash drive, mouse, keyboard, microphone, speaker, remote control and wireless dongle for projection. [At least 2 interfaces should be on the front]
- 1 x USB Type-C, support USB flash device, wireless dongle for projection. The interface should be on the front
- 1 x 10/100/1000M RJ45 port
- 1 x COM port (RJ45)
- 1 x OPS slot for PC module.
- Wi-Fi 5 and Wi-Fi 6, IEEE802.11a/b/g/n/ac/ax network protocol
- Wi-Fi 2.4 GHz and 5 GHz dual-band. Wi-Fi hotspot and Wi-Fi client can be enabled at the same time.

OPS Model Requirements

- The performance should be no less than I5-10500, 8G DDR4, and 128G SSD.
- Video out: 1 x HDMI 1.4, 1 x DP 1.2.
- Audio in: 1 x 3.5mm.
- Audio out: 1 x 3.5mm.
- USB: 3 x USB Type-A 3.0, 3 x USB Type-A 2.0.
- Windows 11 enterprise operate system
- Capability of Microsoft 365 integration. The NRF do own the licenses and will install the software.

Whiteboard Requirements

- Writing latency no more than 16ms
- The built-in whiteboard must support handwriting, drawing, erasing, marking, saving, zooming, and locking the whiteboard. The background colour can be changed.
- The whiteboard must support page turning. A maximum of 100 pages are supported
- Selectable pen type: pencil, pen, and highlighter. Pen colour: colour palette.
- Full-screen annotation: You can take a screenshot of any screen to enter the whiteboard annotation
- The contents of the whiteboard can be saved locally and edited when you open it for the second time, saved in an external USB flash memory, sent to an email.
- When writing on the electronic whiteboard, the hand-drawn graphics can be recognized as standard geometric figures, and the hand-written text can be recognized as standard printed text.

Projection Requirements

- Wired projection through HDMI cable. Projection resolution support up to 1080p60fps and 4K30fps.
- Wired projection through USB Type-C cable. Projection resolution support up to 1080p60fps and 4K30fps. When PC is projected to the device, the device can control the PC reversely without extra cables.
- Wireless projection by entering the projection code on the mobile phone and PC. Projection resolution support up to 1080p60fps and 4K15fps. When PC is projected to the device, the device can control the PC reversely.
- Wi-Fi Direct projection. Users do not need to configure a Wi-Fi router or change the network of their mobile phones or PCs during screen projection. Projection resolution: up to 1080P60fps and 4K15fps. When PC is projected to the device, the device can control the PC reversely.
- Support wireless dongle for one-click projection for PC. Projection resolution: up to 1080p60fps or 4K15fps. The device can control the PC reversely.
- Must allow users to project through menus on the mobile phone without projection APP.

Video Conferencing Requirements

- Supports video conference function without installation conference APP.
- Video codec: H.264BP, H.264HP and H.265.
- Voice codec: G.711A, G.711U, G.729A, G.722, G.722.1C, Opus and AAC-LD.
- Mainstream video resolution: 1080p 30fps, 720p 60fps, 720p 30fps, 4CIF and CIF
- Presentation resolution up to 1080p 30fps.
- Must support the ITU-T H.323 and IETF SIP communication protocols to ensure good interoperability.

Third-Party Video Conferencing Requirements

- Must support third-party video conference APP
- The camera, microphone and speaker can be used for third-party video conference APP.
- The camera auto-framing and voice tracking features can be used for third-party video conference APP

Openness Requirements

- Android apps can be installed.
- Support APP store dedicated to large screens device.
- Supports APIs, third-party applications can perform registration, conference call, conference control, configuration query, and address book query based on the APIs.

Special Features Requirements

- Multi-window: The desktop can be divided into two windows that display two applications. User can change the size of the two windows by dragging the windows.
- Must support BYOM, device hardware capabilities such as microphones, cameras, speakers, and touchscreens can be easily used as peripherals for 3rd party conferences on PC, by using Type-C cables, projection app, or wireless dongle
- Must support dynamic wallpapers and static wallpapers. Wallpapers can be changed and customized to corporate colours
- Clone screen content to another screen via HDMI cable
- 802.11a/b/g/n/ac/ax protocols and WPA2 authentication.
- Supported protocols must include: TCP/IP, RTP, RTCP, DHCP, DNS, SMTP, SNTP, SSH, HTTP, HTTPS, and TR-069

Certificate Requirements

- CE Certificate

Backup power

- RJ45 Network Monitored UPS backup power unit with 20min standby time at 100% load of all the Video Conferencing equipment in operation

Step 3

- **Testing of installation including:**
 - Network Connectivity
 - Screen operation
 - Windows Operating System
 - MS Teams functionality
 - Zoom functionality
 - Google Video functionality
 - White boarding
 - Remote presentation functionality
 - Speaker output
 - Microphone input
 - Camera follows voice functionality
 - UPS functionality under full load

Step 4 – Sign off

- Technical diagram of the installation describing the purpose and location of all the components
- Technical manual for IT support including a description, location and operation of all installed components

- User manual with detailed procedures on:
 - Turning the system on and off
 - Setting the volume
 - Selecting the correct source for Video conferencing or remote presentation
 - Starting a Video conferencing session on MS Teams, Zoom and Google
 - Using the Whiteboard functionality
 - Starting a remote sharing session

Step 5: 36-month Warranty (36 months replaces the periods set in GCC15 under General Conditions) on all equipment installed commencing after sign off per venue

PHILIP TOBIAS Meeting Room

General Requirements

The All-in-one terminal should include:

- Interactive Panel;
- Video conference codec;
- Built-in Speaker;
- Built-in microphone;
- Built-in triple-lens camera;
- OPS module;
- Remote control unit.

Step 1

- Remove redundant infrastructure
- Handover of redundant equipment to NRF IT Representative

Step 2 – Supply and Installation of the following specification equipment:

Touch Screen Requirements

- 1x 65-inch D-LED touch screen, 4K60 resolution wall mounted
- System configuration: 8 core CPU, 12 GB RAM, 64GB Flash
- Zero-gap bonding
- Must support anti-glare (AG)
- Automatically adjusts screen brightness based on light sensing
- Optical anti-blue light
- Screen response time: Not more than 8ms
- Touch accuracy: $\pm 1\text{mm}$
- 20 touch points

Camera Requirements

- 4K30 built-in camera.
- Horizontal viewing angle: 80°, vertical viewing angle: 50°
- 3x Optical Zoom, 0.5deg Ultra-high precision, noiseless rotation
- A privacy cover to physically close the camera.
- Auto-framing, automatically adjusts the camera based on the location of the participants. The camera displays all participants in a panoramic view and ensures that the participants are displayed in the centre.
- Speaker tracking, automatically switch to the close-up picture of speaker without manual intervention.

Microphone Requirements

- At least 6 built-in microphone arrays
- The sound pickup radius at least 12 meters, and the sound pickup angle: 180°.
- Capability to connect external microphones for wider pickup angles.
- 20 kHz full-frequency audio pickup, sampling frequency: 48 kHz
- Acoustic echo cancellation (AEC), automatic gain control (AGC), automatic noise reduction (ANR)

External Microphone Requirements

- Omnidirectional microphone with a sound pickup distance of at least 6 meters.
- Two microphones must be able to be cascaded.
- 20 kHz full-frequency audio pickup, sampling frequency: 48 kHz.
- Acoustic echo cancellation (AEC), automatic gain control (AGC), automatic noise reduction (ANR)

Speaker Requirements

- Include two built-in speakers, frequency response range:100Hz-20KHz, total power not less than 40 W

Interface Requirements

- Video In: 2 x HDMI 2.0 (4K60)
- Video Out: 1 x HDMI 2.0 (4K60)
- Audio In: 1 x 3.5mm
- Audio Out: 1 x 3.5mm
- 1 x Omni-directional microphone port, support the cascading of two microphones.
- 3 x USB Type-A 3.0, support USB flash drive, mouse, keyboard, microphone, speaker, remote control and wireless dongle for projection. [At least 2 interfaces should be on the front]
- 1 x USB Type-C, support USB flash device, wireless dongle for projection. The interface should be on the front
- 1 x 10/100/1000M RJ45 port
- 1 x COM port (RJ45)
- 1 x OPS slot for PC module.
- Wi-Fi 5 and Wi-Fi 6, IEEE802.11a/b/g/n/ac/ax network protocol
- Wi-Fi 2.4 GHz and 5 GHz dual-band. Wi-Fi hotspot and Wi-Fi client can be enabled at the same time.

OPS Model Requirements

- The performance should be no less than I5-10500, 8G DDR4, and 128G SSD.
- Video out: 1 x HDMI 1.4, 1 x DP 1.2.
- Audio in: 1 x 3.5mm.
- Audio out: 1 x 3.5mm.
- USB: 3 x USB Type-A 3.0, 3 x USB Type-A 2.0.
- Windows 11 enterprise operate system
- Capability of Microsoft 365 integration. The NRF do own the licenses and will install the software.

Whiteboard Requirements

- Writing latency no more than 16ms
- The built-in whiteboard must support handwriting, drawing, erasing, marking, saving, zooming, and locking the whiteboard. The background colour can be changed.
- The whiteboard must support page turning. A maximum of 100 pages are supported
- Selectable pen type: pencil, pen, and highlighter. Pen colour: colour palette.
- Full-screen annotation: You can take a screenshot of any screen to enter the whiteboard annotation
- The contents of the whiteboard can be saved locally and edited when you open it for the second time, saved in an external USB flash memory, sent to an email.
- When writing on the electronic whiteboard, the hand-drawn graphics can be recognized as standard geometric figures, and the hand-written text can be recognized as standard printed text.

Projection Requirements

- Wired projection through HDMI cable. Projection resolution support up to 1080p60fps and 4K30fps.

- Wired projection through USB Type-C cable. Projection resolution support up to 1080p60fps and 4K30fps. When PC is projected to the device, the device can control the PC reversely without extra cables.
- Wireless projection by entering the projection code on the mobile phone and PC. Projection resolution support up to 1080p60fps and 4K15fps. When PC is projected to the device, the device can control the PC reversely.
- Wi-Fi Direct projection. Users do not need to configure a Wi-Fi router or change the network of their mobile phones or PCs during screen projection. Projection resolution: up to 1080P60fps and 4K15fps. When PC is projected to the device, the device can control the PC reversely.
- Support wireless dongle for one-click projection for PC. Projection resolution: up to 1080p60fps or 4K15fps. The device can control the PC reversely.
- Must allow users to project through menus on the mobile phone without projection APP.

Video Conferencing Requirements

- Supports video conference function without installation conference APP.
- Video codec: H.264BP, H.264HP and H.265.
- Voice codec: G.711A, G.711U, G.729A, G.722, G.722.1C, Opus and AAC-LD.
- Mainstream video resolution: 1080p 30fps, 720p 60fps, 720p 30fps, 4CIF and CIF
- Presentation resolution up to 1080p 30fps.
- Must support the ITU-T H.323 and IETF SIP communication protocols to ensure good interoperability.

Third-Party Video Conferencing Requirements

- Must support third-party video conference APP
- The camera, microphone and speaker can be used for third-party video conference APP.
- The camera auto-framing and voice tracking features can be used for third-party video conference APP

Openness Requirements

- Android apps can be installed.
- Support APP store dedicated to large screens device.
- Supports APIs, third-party applications can perform registration, conference call, conference control, configuration query, and address book query based on the APIs.

Special Features Requirements

- Multi-window: The desktop can be divided into two windows that display two applications. User can change the size of the two windows by dragging the windows.
- Must support BYOM, device hardware capabilities such as microphones, cameras, speakers, and touchscreens can be easily used as peripherals for 3rd party conferences on PC, by using Type-C cables, projection app, or wireless dongle
- Must support dynamic wallpapers and static wallpapers. Wallpapers can be changed and customized to corporate colours
- Clone screen content to another screen via HDMI cable
- 802.11a/b/g/n/ac/ax protocols and WPA2 authentication.
- Supported protocols must include: TCP/IP, RTP, RTCP, DHCP, DNS, SMTP, SNTP, SSH, HTTP, HTTPS, and TR-069

Certificate Requirements

- CE Certificate

Backup power

- RJ45 Network Monitored UPS backup power unit with 20min standby time at 100% load of all the Video Conferencing equipment in operation

Step 3

- **Testing of installation including:**
 - Network Connectivity
 - Screen operation
 - Windows Operating System
 - MS Teams functionality
 - Zoom functionality
 - Google Video functionality
 - White boarding
 - Remote presentation functionality
 - Speaker output
 - Microphone input
 - Camera follows voice functionality
 - UPS functionality under full load

Step 4 – Sign off

- Technical diagram of the installation describing the purpose and location of all the components
- Technical manual for IT support including a description, location and operation of all installed components
- User manual with detailed procedures on:
 - Turning the system on and off
 - Setting the volume
 - Selecting the correct source for Video conferencing or remote presentation
 - Starting a Video conferencing session on MS Teams, Zoom and Google
 - Using the Whiteboard functionality
 - Starting a remote sharing session

Step 5: 36-month Warranty (36 months replaces the periods set in GCC15 under General Conditions) on all equipment installed commencing after sign off per venue

REINHARD ARNDT Executive Boardroom

General Requirements

The All-in-one terminal should include:

- Interactive Panel;
- Video conference codec;
- Built-in Speaker;
- Built-in microphone;
- Built-in triple-lens camera;
- OPS module;
- Remote control unit.

Step 1

- Remove redundant infrastructure
- Handover of redundant equipment to NRF IT Representative

Step 2 – Supply and Installation of the following specification equipment:

Touch Screen Requirements

- 1x 65-inch D-LED touch screen, 4K60 resolution wall mounted
- System configuration: 8 core CPU, 12 GB RAM, 64GB Flash
- Zero-gap bonding
- Must support anti-glare (AG)
- Automatically adjusts screen brightness based on light sensing
- Optical anti-blue light
- Screen response time: Not more than 8ms
- Touch accuracy: ± 1 mm
- 20 touch points

Camera Requirements

- 4K30 built-in, triple lens camera.
- Horizontal viewing angle: 80°, vertical viewing angle: 50°
- 3x Optical Zoom, 0.5deg Ultra-high precision, noiseless rotation
- A privacy cover to physically close the camera.
- Auto-framing, automatically adjusts the camera based on the location of the participants. The camera displays all participants in a panoramic view and ensures that the participants are displayed in the centre.
- Speaker tracking, automatically switch to the close-up picture of speaker without manual intervention.

Microphone Requirements

- At least 6 built-in microphone arrays
- The sound pickup radius at least 12 meters, and the sound pickup angle: 180°.
- Capability to connect external microphones for wider pickup angles.
- 20 kHz full-frequency audio pickup, sampling frequency: 48 kHz
- Acoustic echo cancellation (AEC), automatic gain control (AGC), automatic noise reduction (ANR)
- Must support Acoustic Baffle to eliminate noise during a video conference session

Speaker Requirements

- Include two built-in speakers, frequency response range:100Hz-20KHz, total power not less than 40 W

Interface Requirements

- Video In: 2 x HDMI 2.0 (4K60)
- Video Out: 1 x HDMI 2.0 (4K60)
- Audio In: 1 x 3.5mm
- Audio Out: 1 x 3.5mm
- 1 x Omni-directional microphone port, support the cascading of two microphones.
- 3 x USB Type-A 3.0, support USB flash drive, mouse, keyboard, microphone, speaker, remote control and wireless dongle for projection. [At least 2 interfaces should be on the front]
- 1 x USB Type-C, support USB flash device, wireless dongle for projection. The interface should be on the front
- 1 x 10/100/1000M RJ45 port
- 1 x COM port (RJ45)
- 1 x OPS slot for PC module.
- Wi-Fi 5 and Wi-Fi 6, IEEE802.11a/b/g/n/ac/ax network protocol
- Wi-Fi 2.4 GHz and 5 GHz dual-band. Wi-Fi hotspot and Wi-Fi client can be enabled at the same time.

OPS Model Requirements

- The performance should be no less than I5-10500, 8G DDR4, and 128G SSD.
- Video out: 1 x HDMI 1.4, 1 x DP 1.2.
- Audio in: 1 x 3.5mm.

- Audio out: 1 x 3.5mm.
- USB: 3 x USB Type-A 3.0, 3 x USB Type-A 2.0.
- Windows 11 enterprise operate system
- Capability of Microsoft 365 integration. The NRF do own the licenses and will install the software.

Whiteboard Requirements

- Writing latency no more than 16ms
- The built-in whiteboard must support handwriting, drawing, erasing, marking, saving, zooming, and locking the whiteboard. The background colour can be changed.
- The whiteboard must support page turning. A maximum of 100 pages are supported
- Selectable pen type: pencil, pen, and highlighter. Pen colour: colour palette.
- Full-screen annotation: You can take a screenshot of any screen to enter the whiteboard annotation
- The contents of the whiteboard can be saved locally and edited when you open it for the second time, saved in an external USB flash memory, sent to an email.
- When writing on the electronic whiteboard, the hand-drawn graphics can be recognized as standard geometric figures, and the hand-written text can be recognized as standard printed text.

Projection Requirements

- Wired projection through HDMI cable. Projection resolution support up to 1080p60fps and 4K30fps.
- Wired projection through USB Type-C cable. Projection resolution support up to 1080p60fps and 4K30fps. When PC is projected to the device, the device can control the PC reversely without extra cables.
- Wireless projection by entering the projection code on the mobile phone and PC. Projection resolution support up to 1080p60fps and 4K15fps. When PC is projected to the device, the device can control the PC reversely.
- Wi-Fi Direct projection. Users do not need to configure a Wi-Fi router or change the network of their mobile phones or PCs during screen projection. Projection resolution: up to 1080P60fps and 4K15fps. When PC is projected to the device, the device can control the PC reversely.
- Support wireless dongle for one-click projection for PC. Projection resolution: up to 1080p60fps or 4K15fps. The device can control the PC reversely.
- Must allow users to project through menus on the mobile phone without projection APP.

Video Conferencing Requirements

- Supports video conference function without installation conference APP.
- Video codec: H.264BP, H.264HP and H.265.
- Voice codec: G.711A, G.711U, G.729A, G.722, G.722.1C, Opus and AAC-LD.
- Mainstream video resolution: 1080p 30fps, 720p 60fps, 720p 30fps, 4CIF and CIF
- Presentation resolution up to 1080p 30fps.
- Must support the ITU-T H.323 and IETF SIP communication protocols to ensure good interoperability.

Openness Requirements

- Harmony/Android apps installation capability
- Must be able to support APP store dedicated to large screens device
- Must support APIs, third-party applications can perform registration, conference call, conference control, configuration query, and address book query based on the APIs.
- Multi-window: The desktop must be able to be divided into two windows that display two applications. User can change the size of the two windows by dragging the windows.

- Must be able to support BYOM, device hardware capabilities such as microphones, cameras, speakers, and touchscreens can be easily used as peripherals for 3rd party conferences on PC, by using Type-C cables, projection app, or wireless dongle
- Must be able to support dynamic wallpapers and static wallpapers. Wallpapers can be changed and customized to corporate colours
- 802.11a/b/g/n/ac/ax protocols and WPA2 authentication.

Certificate Requirements

- CE Certificate

Backup power

- RJ45 Network Monitored UPS backup power unit with 20min standby time at 100% load of all the Video Conferencing equipment in operation

Step 3

- **Testing of installation including:**
 - Network Connectivity
 - Screen operation
 - Windows Operating System
 - MS Teams functionality
 - Zoom functionality
 - Google Video functionality
 - White boarding
 - Remote presentation functionality
 - Speaker output
 - Microphone input
 - Camera follows voice functionality
 - UPS functionality under full load

Step 4 – Sign off

- Technical diagram of the installation describing the purpose and location of all the components
- Technical manual for IT support including a description, location and operation of all installed components
- User manual with detailed procedures on:
 - Turning the system on and off
 - Setting the volume
 - Selecting the correct source for Video conferencing or remote presentation
 - Starting a Video conferencing session on MS Teams, Zoom and Google
 - Using the Whiteboard functionality
 - Starting a remote sharing session

Step 5: 36-month Warranty (36 months replaces the periods set in GCC15 under General Conditions) on all equipment installed commencing after sign off per venue

TIYO SOGA Auditorium

General Requirements

The All-in-one terminal should include:

- Interactive Panel;
- Video conference codec;
- Built-in Speaker;
- Built-in microphone;
- Built-in triple-lens camera;
- OPS module;
- Remote control unit.

Step 1

- Remove redundant infrastructure
- Handover of redundant equipment to NRF IT Representative

Step 2 – Supply and Installation of the following specification equipment:

Touch Screen Requirements

- 1x 86-inch D-LED touch screen, 4K60 resolution wall on trolley
- System configuration: 8 core CPU, 12 GB RAM, 64GB Flash
- Zero-gap bonding
- Must support anti-glare (AG)
- Automatically adjusts screen brightness based on light sensing
- Optical anti-blue light
- Screen response time: Not more than 8ms
- Touch accuracy: $\pm 1\text{mm}$
- 20 touch points

Camera Requirements

- 4K30 built-in, triple lens camera.
- Horizontal viewing angle: 80°, vertical viewing angle: 50°
- 3x Optical Zoom, 0.5deg Ultra-high precision, noiseless rotation
- A privacy cover to physically close the camera.
- Auto-framing, automatically adjusts the camera based on the location of the participants. The camera displays all participants in a panoramic view and ensures that the participants are displayed in the centre.
- Speaker tracking, automatically switch to the close-up picture of speaker without manual intervention.
- Must be able to be configured to attach a second camera for automatic switching between speaker view at podium and audience view individually.

Microphone Requirements

- At least 6 built-in microphone arrays
- The sound pickup radius at least 12 meters, and the sound pickup angle: 180°.
- Capability to connect external microphones for wider pickup angles.
- 20 kHz full-frequency audio pickup, sampling frequency: 48 kHz
- Acoustic echo cancellation (AEC), automatic gain control (AGC), automatic noise reduction (ANR)
- Must support Acoustic Baffle to eliminate noise during a video conference session

Speaker Requirements

- Include two built-in speakers, frequency response range: 100Hz-20KHz, total power not less than 40 W

Interface Requirements

- Video In: 2 x HDMI 2.0 (4K60)
- Video Out: 1 x HDMI 2.0 (4K60)
- Audio In: 1 x 3.5mm
- Audio Out: 1 x 3.5mm
- 1 x Omni-directional microphone port, support the cascading of two microphones.
- 3 x USB Type-A 3.0, support USB flash drive, mouse, keyboard, microphone, speaker, remote control and wireless dongle for projection. [At least 2 interfaces should be on the front]

- 1 x USB Type-C, support USB flash device, wireless dongle for projection. The interface should be on the front
- 1 x 10/100/1000M RJ45 port
- 1 x COM port (RJ45)
- 1 x OPS slot for PC module.
- Wi-Fi 5 and Wi-Fi 6, IEEE802.11a/b/g/n/ac/ax network protocol
- Wi-Fi 2.4 GHz and 5 GHz dual-band. Wi-Fi hotspot and Wi-Fi client can be enabled at the same time.

OPS Model Requirements

- The performance should be no less than I5-10500, 8G DDR4, and 128G SSD.
- Video out: 1 x HDMI 1.4, 1 x DP 1.2.
- Audio in: 1 x 3.5mm.
- Audio out: 1 x 3.5mm.
- USB: 3 x USB Type-A 3.0, 3 x USB Type-A 2.0.
- Windows 11 enterprise operate system
- Capability of Microsoft 365 integration. The NRF do own the licenses and will install the software.

Whiteboard Requirements

- Writing latency no more than 16ms
- The built-in whiteboard must support handwriting, drawing, erasing, marking, saving, zooming, and locking the whiteboard. The background color can be changed.
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- Mainstream video resolution: 1080p 30fps, 720p 60fps, 720p 30fps, 4CIF and CIF
- Presentation resolution up to 1080p 30fps.
- Supports the ITU-T H.323 and IETF SIP communication protocols to ensure good interoperability.

Openness Requirements

- Harmony/Android apps installation capability
- Must be able to support APP store dedicated to large screens device
- Must support APIs, third-party applications can perform registration, conference call, conference control, configuration query, and address book query based on the APIs.

Special Feature Requirements

- Multi-window: The desktop must be able to be divided into two windows that display two applications. User can change the size of the two windows by dragging the windows.
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Backup power

- RJ45 Network Monitored UPS backup power unit with 20min standby time at 100% load of all the Video Conferencing equipment in operation

Certificate Requirements

- CE Certificate

Step 3

- **Testing of installation including:**
 - Network Connectivity
 - Screen operation
 - Windows Operating System
 - MS Teams functionality
 - Zoom functionality
 - Google Video functionality
 - White boarding
 - Remote presentation functionality
 - Speaker output
 - Microphone input
 - Camera follows voice functionality
 - UPS functionality under full load

Step 4 – Sign off

- Technical diagram of the installation describing the purpose and location of all the components
- Technical manual for IT support including a description, location and operation of all installed components

- User manual with detailed procedures on:
 - Turning the system on and off
 - Setting the volume
 - Selecting the correct source for Video conferencing or remote presentation
 - Starting a Video conferencing session on MS Teams, Zoom and Google
 - Using the Whiteboard functionality
 - Starting a remote sharing session

PHASE 2:

ALBERT LUTHULI Auditorium

General Requirements

The All-in-one terminals should include:

- Interactive Panel;
- Video conference codec;
- Built-in Speaker;
- Built-in microphone;
- Built-in triple-lens camera;
- OPS module;
- Remote control unit.

Step 1

- Remove redundant infrastructure
- Handover of redundant equipment to NRF IT Representative

Step 2a – Supply and configuration of the following control equipment:

- Touch tablet, all-in-one conferencing device with Microsoft Office capability, MS Outlook specifically.
- Must be able to seamlessly start and join Zoom, MS Teams, Google and WEBEX video sessions with full control of each platforms functionalities, i.e Screen Sharing, Chat, Gallery display, etc.
- Full Whiteboarding functionalities including
 - The built-in whiteboard must support handwriting, drawing, erasing, marking, saving, zooming, and locking the whiteboard. The background color can be changed.
 - The whiteboard must support page turning. A maximum of 100 pages are supported
 - Selectable pen type: pencil, pen, and highlighter. Pen color: color palette.
 - Full-screen annotation: You can take a screenshot of any screen to enter the whiteboard annotation
 - The contents of the whiteboard can be saved locally and edited when you open it for the second time, saved in an external USB flash memory, sent to an email.
 - When writing on the electronic whiteboard, the hand-drawn graphics can be recognized as standard geometric figures, and the hand-written text can be recognized as standard printed text

Step2b - Installation of main display units

- 2 x 138-inch R/B: $\geq 1920 \times 1080$; G: $\geq 1920 \times 2160$; aspect ratio: $\geq 16:9$
- Pixel structure: flip-chip COB

Optical Specifications

- Display contrast: $\geq 20000:1$
- Horizontal/Vertical viewing angle: $\geq 160^\circ$ (If the display brightness is halved, the angle is greater than or equal to 160° . If the brightness is reduced to 1/3, the angle is greater than or equal to 170° .)
- Viewing angle (30° color cast): $\Delta u'v' < \pm 0.01$
- Chrominance uniformity $\Delta u'v'$: $C_{xy} \leq \pm 0.003$
- Color temperature: 5000K to 9500K (adjustable; default value: 8000K)
- Brightness: 300 nits to 1000 nits (adjustable; default value: 600 nits; support for white field with 1000

nits)

- Screen gray level: ≥ 16 bits
- Color gamut: $\geq 85\%$ BT2020, $\geq 99\%$ sRGB
- Brightness uniformity: $\geq 97\%$
- Refresh rate: ≥ 3840 Hz; frame changing frequency: ≥ 60 Hz
- Screen surface temperature rise: $\leq 20^{\circ}\text{C}@600$ nits
- Surface reflectivity (SCI): $\leq 7\%$
- Black uniformity: $\Delta E^*_{ab} < 0.5$

Speakers

- Built-in speaker: $\geq 2 \times 3$; support for stereo surround and bass
- Rated power of two groups of speakers + long-term rated power of a single speaker group: $\geq 2 \times 20$ W + 20 W (super bass)
- Speaker sensitivity: $\geq 84 \pm 3$ dBsp (1 m free field test)
- Speaker volume: ≥ 95 dB SPL@1 m (proper sound playback)
- Capability to connect to existing speaker system in the venue.

System Interconnection

- The display must interact with conference endpoints using HDMI CEC commands.

Audio/Video Input

- Audio and video input ports: $\geq 1 \times$ HDMI 2.0 (on the front panel); must support for automatic sleep when there is no HDMI signal detected, and wakeup when a signal is detected.

External Cameras

2 x External camera needs to be fitted to face the members in the meeting room with camera follows voice functionality:

- 2 x 4K30 camera follows voice. (For speaker and auditorium view individually and automatically)
- Horizontal viewing angle: 80° , vertical viewing angle: 50°
- 3x Optical Zoom, 0.5deg Ultra-high precision, noiseless rotation
- A privacy cover to physically close the camera.
- Auto-framing, automatically adjusts the camera based on the location of the participants. The camera displays all participants in a panoramic view and ensures that the participants are displayed in the center.
- Speaker tracking, automatically switch to the close-up picture of speaker without manual intervention.

Microphone Requirements

- Capability to connect seamlessly to microphones system already installed.

Backup power

- RJ45 Network Monitored UPS backup power unit/s with 20min standby time at 100% load of all the Video Conferencing equipment in operation

Step 3

- **Testing of installation including:**
 - Network Connectivity
 - Screen operation
 - Windows Operating System
 - MS Teams functionality
 - Zoom functionality
 - Google Video functionality
 - White boarding
 - Remote presentation functionality
 - Speaker output
 - Microphone input
 - Camera follows voice functionality

- UPS functionality under full load

Step 4 – Sign off

- Technical diagram of the installation describing the purpose and location of all the components
- Technical manual for IT support including a description, location and operation of all installed components
- User manual with detailed procedures on:
 - Turning the system on and off
 - Setting the volume
 - Selecting the correct source for Video conferencing or remote presentation
 - Starting a Video conferencing session on MS Teams, Zoom and Google
 - Using the Whiteboard functionality
 - Starting a remote sharing session

PHASE 3:

FW DE KLERK Meeting Room

General Requirements

The All-in-one terminal should include:

- Interactive Panel;
- Video conference codec;
- Built-in Speaker;
- Built-in microphone;
- Built-in triple-lens camera;
- OPS module;
- Remote control unit.

Step 1

- Remove redundant infrastructure
- Handover of redundant equipment to NRF IT Representative

Step 2 – Supply and Installation of the following specification equipment:

Touch Screen Requirements

- 1x 65-inch D-LED touch screen, 4K60 resolution wall mounted
- System configuration: 8 core CPU, 12 GB RAM, 64GB Flash
- Zero-gap bonding
- Must support anti-glare (AG)
- Automatically adjusts screen brightness based on light sensing
- Optical anti-blue light
- Screen response time: Not more than 8ms
- Touch accuracy: $\pm 1\text{mm}$
- 20 touch points

Camera Requirements

- 4K30 built-in camera.
- Horizontal viewing angle: 80°, vertical viewing angle: 50°
- 3x Optical Zoom, 0.5deg Ultra-high precision, noiseless rotation
- A privacy cover to physically close the camera.
- Auto-framing, automatically adjusts the camera based on the location of the participants. The camera displays all participants in a panoramic view and ensures that the participants are displayed in the centre.
- Speaker tracking, automatically switch to the close-up picture of speaker without manual intervention.

Microphone Requirements

- At least 6 built-in microphone arrays

- The sound pickup radius at least 12 meters, and the sound pickup angle: 180°.
- Capability to connect external microphones for wider pickup angles.
- 20 kHz full-frequency audio pickup, sampling frequency: 48 kHz
- Acoustic echo cancellation (AEC), automatic gain control (AGC), automatic noise reduction (ANR)

External Microphone Requirements

- Omnidirectional microphone with a sound pickup distance of at least 6 meters.
- Two microphones must be able to be cascaded.
- 20 kHz full-frequency audio pickup, sampling frequency: 48 kHz.
- Acoustic echo cancellation (AEC), automatic gain control (AGC), automatic noise reduction (ANR)

Speaker Requirements

- Include two built-in speakers, frequency response range:100Hz-20KHz, total power not less than 40 W

Interface Requirements

- Video In: 2 x HDMI 2.0 (4K60)
- Video Out: 1 x HDMI 2.0 (4K60)
- Audio In: 1 x 3.5mm
- Audio Out: 1 x 3.5mm
- 1 x Omni-directional microphone port, support the cascading of two microphones.
- 3 x USB Type-A 3.0, support USB flash drive, mouse, keyboard, microphone, speaker, remote control and wireless dongle for projection. [At least 2 interfaces should be on the front]
- 1 x USB Type-C, support USB flash device, wireless dongle for projection. The interface should be on the front
- 1 x 10/100/1000M RJ45 port
- 1 x COM port (RJ45)
- 1 x OPS slot for PC module.
- Wi-Fi 5 and Wi-Fi 6, IEEE802.11a/b/g/n/ac/ax network protocol
- Wi-Fi 2.4 GHz and 5 GHz dual-band. Wi-Fi hotspot and Wi-Fi client can be enabled at the same time.

OPS Model Requirements

- The performance should be no less than I5-10500, 8G DDR4, and 128G SSD.
- Video out: 1 x HDMI 1.4, 1 x DP 1.2.
- Audio in: 1 x 3.5mm.
- Audio out: 1 x 3.5mm.
- USB: 3 x USB Type-A 3.0, 3 x USB Type-A 2.0.
- Windows 11 enterprise operate system
- Capability of Microsoft 365 integration. The NRF do own the licenses and will install the software.

Whiteboard Requirements

- Writing latency no more than 16ms
- The built-in whiteboard must support handwriting, drawing, erasing, marking, saving, zooming, and locking the whiteboard. The background color can be changed.
- The whiteboard must support page turning. A maximum of 100 pages are supported
- Selectable pen type: pencil, pen, and highlighter. Pen color: color palette.
- Full-screen annotation: You can take a screenshot of any screen to enter the whiteboard annotation
- The contents of the whiteboard can be saved locally and edited when you open it for the second time, saved in an external USB flash memory, sent to an email.

- When writing on the electronic whiteboard, the hand-drawn graphics can be recognized as standard geometric figures, and the hand-written text can be recognized as standard printed text.

Projection Requirements

- Wired projection through HDMI cable. Projection resolution support up to 1080p60fps and 4K30fps.
- Wired projection through USB Type-C cable. Projection resolution support up to 1080p60fps and 4K30fps. When PC is projected to the device, the device can control the PC reversely without extra cables.
- Wireless projection by entering the projection code on the mobile phone and PC. Projection resolution support up to 1080p60fps and 4K15fps. When PC is projected to the device, the device can control the PC reversely.
- Wi-Fi Direct projection. Users do not need to configure a Wi-Fi router or change the network of their mobile phones or PCs during screen projection. Projection resolution: up to 1080P60fps and 4K15fps. When PC is projected to the device, the device can control the PC reversely.
- Support wireless dongle for one-click projection for PC. Projection resolution: up to 1080p60fps or 4K15fps. The device can control the PC reversely.
- Must allow users to project through menus on the mobile phone without projection APP.

Video Conferencing Requirements

- Supports video conference function without installation conference APP.
- Video codec: H.264BP, H.264HP and H.265.
- Voice codec: G.711A, G.711U, G.729A, G.722, G.722.1C, Opus and AAC-LD.
- Mainstream video resolution: 1080p 30fps, 720p 60fps, 720p 30fps, 4CIF and CIF
- Presentation resolution up to 1080p 30fps.
- Must support the ITU-T H.323 and IETF SIP communication protocols to ensure good interoperability.

Third-Party Video Conferencing Requirements

- Must support third-party video conference APP
- The camera, microphone and speaker can be used for third-party video conference APP.
- The camera auto-framing and voice tracking features can be used for third-party video conference APP

Openness Requirements

- Android apps can be installed.
- Support APP store dedicated to large screens device.
- Supports APIs, third-party applications can perform registration, conference call, conference control, configuration query, and address book query based on the APIs.

Special Features Requirements

- Multi-window: The desktop can be divided into two windows that display two applications. User can change the size of the two windows by dragging the windows.
- Must support BYOM, device hardware capabilities such as microphones, cameras, speakers, and touchscreens can be easily used as peripherals for 3rd party conferences on PC, by using Type-C cables, projection app, or wireless dongle
- Must support dynamic wallpapers and static wallpapers. Wallpapers can be changed and customized to corporate colors
- Clone screen content to another screen via HDMI cable
- 802.11a/b/g/n/ac/ax protocols and WPA2 authentication.

- Supported protocols must include: TCP/IP, RTP, RTCP, DHCP, DNS, SMTP, SNTP, SSH, HTTP, HTTPS, and TR-069

Certificate Requirements

- CE Certificate

Backup power

- RJ45 Network Monitored UPS backup power unit with 20min standby time at 100% load of all the Video Conferencing equipment in operation

Step 3

- **Testing of installation including:**
 - Network Connectivity
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 - Windows Operating System
 - MS Teams functionality
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Step 5: 36-month Warranty (36 months replaces the periods set in GCC15 under General Conditions) on all equipment installed commencing after sign off per venue

JM COETZEE Meeting Room

General Requirements

The All-in-one terminal should include:

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- Built-in microphone;
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- Supports video conference function without installation conference APP.
- Video codec: H.264BP, H.264HP and H.265.
- Voice codec: G.711A, G.711U, G.729A, G.722, G.722.1C, Opus and AAC-LD.

- Mainstream video resolution: 1080p 30fps, 720p 60fps, 720p 30fps, 4CIF and CIF
- Presentation resolution up to 1080p 30fps.
- Must support the ITU-T H.323 and IETF SIP communication protocols to ensure good interoperability.

Third-Party Video Conferencing Requirements

- Must support third-party video conference APP
- The camera, microphone and speaker can be used for third-party video conference APP.
- The camera auto-framing and voice tracking features can be used for third-party video conference APP

Openness Requirements

- Android apps can be installed.
- Support APP store dedicated to large screens device.
- Supports APIs, third-party applications can perform registration, conference call, conference control, configuration query, and address book query based on the APIs.

Special Features Requirements

- Multi-window: The desktop can be divided into two windows that display two applications. User can change the size of the two windows by dragging the windows.
- Must support BYOM, device hardware capabilities such as microphones, cameras, speakers, and touchscreens can be easily used as peripherals for 3rd party conferences on PC, by using Type-C cables, projection app, or wireless dongle
- Must support dynamic wallpapers and static wallpapers. Wallpapers can be changed and customized to corporate colours
- Clone screen content to another screen via HDMI cable
- 802.11a/b/g/n/ac/ax protocols and WPA2 authentication.
- Supported protocols must include: TCP/IP, RTP, RTCP, DHCP, DNS, SMTP, SNTP, SSH, HTTP, HTTPS, and TR-069

Certificate Requirements

- CE Certificate

Backup power

- RJ45 Network Monitored UPS backup power unit with 20min standby time at 100% load of all the Video Conferencing equipment in operation

Step 3

- **Testing of installation including:**
 - Network Connectivity
 - Screen operation
 - Windows Operating System
 - MS Teams functionality
 - Zoom functionality
 - Google Video functionality
 - White boarding
 - Remote presentation functionality
 - Speaker output
 - Microphone input

- Camera follows voice functionality
- UPS functionality under full load

Step 4 – Sign off

- Technical diagram of the installation describing the purpose and location of all the components
- Technical manual for IT support including a description, location and operation of all installed components
- User manual with detailed procedures on:
 - Turning the system on and off
 - Setting the volume
 - Selecting the correct source for Video conferencing or remote presentation
 - Starting a Video conferencing session on MS Teams, Zoom and Google
 - Using the Whiteboard functionality
 - Starting a remote sharing session

Step 5: 36-month Warranty (36 months replaces the periods set in GCC15 under General Conditions) on all equipment installed commencing after sign off per venue

SYDNEY BRENNER Meeting Room

General Requirements

The All-in-one terminal should include:

- Interactive Panel;
- Video conference codec;
- Built-in Speaker;
- Built-in microphone;
- Built-in triple-lens camera;
- OPS module;
- Remote control unit.

Step 1

- Remove redundant infrastructure
- Handover of redundant equipment to NRF IT Representative

Step 2 – Supply and Installation of the following specification equipment:

Touch Screen Requirements

- 1x 65-inch D-LED touch screen, 4K60 resolution wall mounted
- System configuration: 8 core CPU, 12 GB RAM, 64GB Flash
- Zero-gap bonding
- Must support anti-glare (AG)
- Automatically adjusts screen brightness based on light sensing
- Optical anti-blue light
- Screen response time: Not more than 8ms
- Touch accuracy: $\pm 1\text{mm}$
- 20 touch points

Camera Requirements

- 4K30 built-in camera.
- Horizontal viewing angle: 80°, vertical viewing angle: 50°
- 3x Optical Zoom, 0.5deg Ultra-high precision, noiseless rotation
- A privacy cover to physically close the camera.
- Auto-framing, automatically adjusts the camera based on the location of the participants. The camera displays all participants in a panoramic view and ensures that the participants are displayed in the centre.

- Speaker tracking, automatically switch to the close-up picture of speaker without manual intervention.

Microphone Requirements

- At least 6 built-in microphone arrays
- The sound pickup radius at least 12 meters, and the sound pickup angle: 180°.
- Capability to connect external microphones for wider pickup angles.
- 20 kHz full-frequency audio pickup, sampling frequency: 48 kHz
- Acoustic echo cancellation (AEC), automatic gain control (AGC), automatic noise reduction (ANR)

External Microphone Requirements

- Omnidirectional microphone with a sound pickup distance of at least 6 meters.
- Two microphones must be able to be cascaded.
- 20 kHz full-frequency audio pickup, sampling frequency: 48 kHz.
- Acoustic echo cancellation (AEC), automatic gain control (AGC), automatic noise reduction (ANR)

Speaker Requirements

- Include two built-in speakers, frequency response range:100Hz-20KHz, total power not less than 40 W

Interface Requirements

- Video In: 2 x HDMI 2.0 (4K60)
- Video Out: 1 x HDMI 2.0 (4K60)
- Audio In: 1 x 3.5mm
- Audio Out: 1 x 3.5mm
- 1 x Omni-directional microphone port, support the cascading of two microphones.
- 3 x USB Type-A 3.0, support USB flash drive, mouse, keyboard, microphone, speaker, remote control and wireless dongle for projection. [At least 2 interfaces should be on the front]
- 1 x USB Type-C, support USB flash device, wireless dongle for projection. The interface should be on the front
- 1 x 10/100/1000M RJ45 port
- 1 x COM port (RJ45)
- 1 x OPS slot for PC module.
- Wi-Fi 5 and Wi-Fi 6, IEEE802.11a/b/g/n/ac/ax network protocol
- Wi-Fi 2.4 GHz and 5 GHz dual-band. Wi-Fi hotspot and Wi-Fi client can be enabled at the same time.

OPS Model Requirements

- The performance should be no less than I5-10500, 8G DDR4, and 128G SSD.
- Video out: 1 x HDMI 1.4, 1 x DP 1.2.
- Audio in: 1 x 3.5mm.
- Audio out: 1 x 3.5mm.
- USB: 3 x USB Type-A 3.0, 3 x USB Type-A 2.0.
- Windows 11 enterprise operate system
- Capability of Microsoft 365 integration. The NRF do own the licenses and will install the software.

Whiteboard Requirements

- Writing latency no more than 16ms
- The built-in whiteboard must support handwriting, drawing, erasing, marking, saving, zooming, and locking the whiteboard. The background colour can be changed.
- The whiteboard must support page turning. A maximum of 100 pages are supported
- Selectable pen type: pencil, pen, and highlighter. Pen colour: colour palette.
- Full-screen annotation: You can take a screenshot of any screen to enter the whiteboard annotation
- The contents of the whiteboard can be saved locally and edited when you open it for the second time, saved in an external USB flash memory, sent to an email.

- When writing on the electronic whiteboard, the hand-drawn graphics can be recognized as standard geometric figures, and the hand-written text can be recognized as standard printed text.

Projection Requirements

- Wired projection through HDMI cable. Projection resolution support up to 1080p60fps and 4K30fps.
- Wired projection through USB Type-C cable. Projection resolution support up to 1080p60fps and 4K30fps. When PC is projected to the device, the device can control the PC reversely without extra cables.
- Wireless projection by entering the projection code on the mobile phone and PC. Projection resolution support up to 1080p60fps and 4K15fps. When PC is projected to the device, the device can control the PC reversely.
- Wi-Fi Direct projection. Users do not need to configure a Wi-Fi router or change the network of their mobile phones or PCs during screen projection. Projection resolution: up to 1080P60fps and 4K15fps. When PC is projected to the device, the device can control the PC reversely.
- Support wireless dongle for one-click projection for PC. Projection resolution: up to 1080p60fps or 4K15fps. The device can control the PC reversely.
- Must allow users to project through menus on the mobile phone without projection APP.

Video Conferencing Requirements

- Supports video conference function without installation conference APP.
- Video codec: H.264BP, H.264HP and H.265.
- Voice codec: G.711A, G.711U, G.729A, G.722, G.722.1C, Opus and AAC-LD.
- Mainstream video resolution: 1080p 30fps, 720p 60fps, 720p 30fps, 4CIF and CIF
- Presentation resolution up to 1080p 30fps.
- Must support the ITU-T H.323 and IETF SIP communication protocols to ensure good interoperability.

Third-Party Video Conferencing Requirements

- Must support third-party video conference APP
- The camera, microphone and speaker can be used for third-party video conference APP.
- The camera auto-framing and voice tracking features can be used for third-party video conference APP

Openness Requirements

- Android apps can be installed.
- Support APP store dedicated to large screens device.
- Supports APIs, third-party applications can perform registration, conference call, conference control, configuration query, and address book query based on the APIs.

Special Features Requirements

- Multi-window: The desktop can be divided into two windows that display two applications. User can change the size of the two windows by dragging the windows.
- Must support BYOM, device hardware capabilities such as microphones, cameras, speakers, and touchscreens can be easily used as peripherals for 3rd party conferences on PC, by using Type-C cables, projection app, or wireless dongle
- Must support dynamic wallpapers and static wallpapers. Wallpapers can be changed and customized to corporate colours
- Clone screen content to another screen via HDMI cable
- 802.11a/b/g/n/ac/ax protocols and WPA2 authentication.

- Supported protocols must include: TCP/IP, RTP, RTCP, DHCP, DNS, SMTP, SNTP, SSH, HTTP, HTTPS, and TR-069

Certificate Requirements

- CE Certificate

Backup power

- RJ45 Network Monitored UPS backup power unit with 20min standby time at 100% load of all the Video Conferencing equipment in operation

Step 3

- **Testing of installation including:**
 - Network Connectivity
 - Screen operation
 - Windows Operating System
 - MS Teams functionality
 - Zoom functionality
 - Google Video functionality
 - White boarding
 - Remote presentation functionality
 - Speaker output
 - Microphone input
 - Camera follows voice functionality
 - UPS functionality under full load

Step 4 – Sign off

- Technical diagram of the installation describing the purpose and location of all the components
- Technical manual for IT support including a description, location and operation of all installed components
- User manual with detailed procedures on:
 - Turning the system on and off
 - Setting the volume
 - Selecting the correct source for Video conferencing or remote presentation
 - Starting a Video conferencing session on MS Teams, Zoom and Google
 - Using the Whiteboard functionality
 - Starting a remote sharing session

Step 5: 36-month Warranty (36 months replaces the periods set in GCC15 under General Conditions) on all equipment installed commencing after sign off per venue

NADINE GORDINER Meeting Room

General Requirements

The All-in-one terminal should include:

- Interactive Panel;
- Video conference codec;
- Built-in Speaker;

- Built-in microphone;
- Built-in triple-lens camera;
- OPS module;
- Remote control unit.

Step 1

- Remove redundant infrastructure
- Handover of redundant equipment to NRF IT Representative

Step 2 – Supply and Installation of the following specification equipment:

Touch Screen Requirements

- 1x 65-inch D-LED touch screen, 4K60 resolution wall mounted
- System configuration: 8 core CPU, 12 GB RAM, 64GB Flash
- Zero-gap bonding
- Must support anti-glare (AG)
- Automatically adjusts screen brightness based on light sensing
- Optical anti-blue light
- Screen response time: Not more than 8ms
- Touch accuracy: $\pm 1\text{mm}$
- 20 touch points

Camera Requirements

- 4K30 built-in camera.
- Horizontal viewing angle: 80° , vertical viewing angle: 50°
- 3x Optical Zoom, 0.5deg Ultra-high precision, noiseless rotation
- A privacy cover to physically close the camera.
- Auto-framing, automatically adjusts the camera based on the location of the participants. The camera displays all participants in a panoramic view and ensures that the participants are displayed in the centre.
- Speaker tracking, automatically switch to the close-up picture of speaker without manual intervention.

Microphone Requirements

- At least 6 built-in microphone arrays
- The sound pickup radius at least 12 meters, and the sound pickup angle: 180° .
- Capability to connect external microphones for wider pickup angles.
- 20 kHz full-frequency audio pickup, sampling frequency: 48 kHz
- Acoustic echo cancellation (AEC), automatic gain control (AGC), automatic noise reduction (ANR)

External Microphone Requirements

- Omnidirectional microphone with a sound pickup distance of at least 6 meters.
- Two microphones must be able to be cascaded.
- 20 kHz full-frequency audio pickup, sampling frequency: 48 kHz.
- Acoustic echo cancellation (AEC), automatic gain control (AGC), automatic noise reduction (ANR)

Speaker Requirements

- Include two built-in speakers, frequency response range: 100Hz-20KHz, total power not less than 40 W

Interface Requirements

- Video In: 2 x HDMI 2.0 (4K60)
- Video Out: 1 x HDMI 2.0 (4K60)
- Audio In: 1 x 3.5mm
- Audio Out: 1 x 3.5mm
- 1 x Omni-directional microphone port, support the cascading of two microphones.
- 3 x USB Type-A 3.0, support USB flash drive, mouse, keyboard, microphone, speaker, remote control and wireless dongle for projection. [At least 2 interfaces should be on the front]
- 1 x USB Type-C, support USB flash device, wireless dongle for projection. The interface should be on the front

- 1 x 10/100/1000M RJ45 port
- 1 x COM port (RJ45)
- 1 x OPS slot for PC module.
- Wi-Fi 5 and Wi-Fi 6, IEEE802.11a/b/g/n/ac/ax network protocol
- Wi-Fi 2.4 GHz and 5 GHz dual-band. Wi-Fi hotspot and Wi-Fi client can be enabled at the same time.

OPS Model Requirements

- The performance should be no less than I5-10500, 8G DDR4, and 128G SSD.
- Video out: 1 x HDMI 1.4, 1 x DP 1.2.
- Audio in: 1 x 3.5mm.
- Audio out: 1 x 3.5mm.
- USB: 3 x USB Type-A 3.0, 3 x USB Type-A 2.0.
- Windows 11 enterprise operate system
- Capability of Microsoft 365 integration. The NRF do own the licenses and will install the software.

Whiteboard Requirements

- Writing latency no more than 16ms
- The built-in whiteboard must support handwriting, drawing, erasing, marking, saving, zooming, and locking the whiteboard. The background colour can be changed.
- The whiteboard must support page turning. A maximum of 100 pages are supported
- Selectable pen type: pencil, pen, and highlighter. Pen colour: colour palette.
- Full-screen annotation: You can take a screenshot of any screen to enter the whiteboard annotation
- The contents of the whiteboard can be saved locally and edited when you open it for the second time, saved in an external USB flash memory, sent to an email.
- When writing on the electronic whiteboard, the hand-drawn graphics can be recognized as standard geometric figures, and the hand-written text can be recognized as standard printed text.

Projection Requirements

- Wired projection through HDMI cable. Projection resolution support up to 1080p60fps and 4K30fps.
- Wired projection through USB Type-C cable. Projection resolution support up to 1080p60fps and 4K30fps. When PC is projected to the device, the device can control the PC reversely without extra cables.
- Wireless projection by entering the projection code on the mobile phone and PC. Projection resolution support up to 1080p60fps and 4K15fps. When PC is projected to the device, the device can control the PC reversely.
- Wi-Fi Direct projection. Users do not need to configure a Wi-Fi router or change the network of their mobile phones or PCs during screen projection. Projection resolution: up to 1080P60fps and 4K15fps. When PC is projected to the device, the device can control the PC reversely.
- Support wireless dongle for one-click projection for PC. Projection resolution: up to 1080p60fps or 4K15fps. The device can control the PC reversely.
- Must allow users to project through menus on the mobile phone without projection APP.

Video Conferencing Requirements

- Supports video conference function without installation conference APP.
- Video codec: H.264BP, H.264HP and H.265.
- Voice codec: G.711A, G.711U, G.729A, G.722, G.722.1C, Opus and AAC-LD.
- Mainstream video resolution: 1080p 30fps, 720p 60fps, 720p 30fps, 4CIF and CIF
- Presentation resolution up to 1080p 30fps.

- Must support the ITU-T H.323 and IETF SIP communication protocols to ensure good interoperability.

Third-Party Video Conferencing Requirements

- Must support third-party video conference APP
- The camera, microphone and speaker can be used for third-party video conference APP.
- The camera auto-framing and voice tracking features can be used for third-party video conference APP

Openness Requirements

- Android apps can be installed.
- Support APP store dedicated to large screens device.
- Supports APIs, third-party applications can perform registration, conference call, conference control, configuration query, and address book query based on the APIs.

Special Features Requirements

- Multi-window: The desktop can be divided into two windows that display two applications. User can change the size of the two windows by dragging the windows.
- Must support BYOM, device hardware capabilities such as microphones, cameras, speakers, and touchscreens can be easily used as peripherals for 3rd party conferences on PC, by using Type-C cables, projection app, or wireless dongle
- Must support dynamic wallpapers and static wallpapers. Wallpapers can be changed and customized to corporate colours
- Clone screen content to another screen via HDMI cable
- 802.11a/b/g/n/ac/ax protocols and WPA2 authentication.
- Supported protocols must include: TCP/IP, RTP, RTCP, DHCP, DNS, SMTP, SNTP, SSH, HTTP, HTTPS, and TR-069

Certificate Requirements

- CE Certificate

Backup power

- RJ45 Network Monitored UPS backup power unit with 20min standby time at 100% load of all the Video Conferencing equipment in operation

Step 3

- **Testing of installation including:**
 - Network Connectivity
 - Screen operation
 - Windows Operating System
 - MS Teams functionality
 - Zoom functionality
 - Google Video functionality
 - White boarding
 - Remote presentation functionality
 - Speaker output
 - Microphone input
 - Camera follows voice functionality

- UPS functionality under full load

Step 4 – Sign off

- Technical diagram of the installation describing the purpose and location of all the components
- Technical manual for IT support including a description, location and operation of all installed components
- User manual with detailed procedures on:
 - Turning the system on and off
 - Setting the volume
 - Selecting the correct source for Video conferencing or remote presentation
 - Starting a Video conferencing session on MS Teams, Zoom and Google
 - Using the Whiteboard functionality
 - Starting a remote sharing session

Step 5: 36-month Warranty (36 months replaces the periods set in GCC15 under General Conditions) on all equipment installed commencing after signing off per venue

ATRIUM Meeting Room

General Requirements

The All-in-one terminal should include:

- Interactive Panel;
- Video conference codec;
- Built-in Speaker;
- Built-in microphone;
- Built-in triple-lens camera;
- OPS module;
- Remote control unit.

Step 1

- Remove redundant infrastructure
- Handover of redundant equipment to NRF IT Representative

Step 2 – Supply and Installation of the following specification equipment:

Touch Screen Requirements

- 1x 65-inch D-LED touch screen, 4K60 resolution wall mounted
- System configuration: 8 core CPU, 12 GB RAM, 64GB Flash
- Zero-gap bonding
- Must support anti-glare (AG)
- Automatically adjusts screen brightness based on light sensing
- Optical anti-blue light
- Screen response time: Not more than 8ms
- Touch accuracy: $\pm 1\text{mm}$
- 20 touch points

Camera Requirements

- 4K30 built-in camera.
- Horizontal viewing angle: 80°, vertical viewing angle: 50°
- 3x Optical Zoom, 0.5deg Ultra-high precision, noiseless rotation
- A privacy cover to physically close the camera.
- Auto-framing, automatically adjusts the camera based on the location of the participants. The camera displays all participants in a panoramic view and ensures that the participants are displayed in the centre.

- Speaker tracking, automatically switch to the close-up picture of speaker without manual intervention.

Microphone Requirements

- At least 6 built-in microphone arrays
- The sound pickup radius at least 12 meters, and the sound pickup angle: 180°.
- Capability to connect external microphones for wider pickup angles.
- 20 kHz full-frequency audio pickup, sampling frequency: 48 kHz
- Acoustic echo cancellation (AEC), automatic gain control (AGC), automatic noise reduction (ANR)

External Microphone Requirements

- Omnidirectional microphone with a sound pickup distance of at least 6 meters.
- Two microphones must be able to be cascaded.
- 20 kHz full-frequency audio pickup, sampling frequency: 48 kHz.
- Acoustic echo cancellation (AEC), automatic gain control (AGC), automatic noise reduction (ANR)

Speaker Requirements

- Include two built-in speakers, frequency response range:100Hz-20KHz, total power not less than 40 W

Interface Requirements

- Video In: 2 x HDMI 2.0 (4K60)
- Video Out: 1 x HDMI 2.0 (4K60)
- Audio In: 1 x 3.5mm
- Audio Out: 1 x 3.5mm
- 1 x Omni-directional microphone port, support the cascading of two microphones.
- 3 x USB Type-A 3.0, support USB flash drive, mouse, keyboard, microphone, speaker, remote control and wireless dongle for projection. [At least 2 interfaces should be on the front]
- 1 x USB Type-C, support USB flash device, wireless dongle for projection. The interface should be on the front
- 1 x 10/100/1000M RJ45 port
- 1 x COM port (RJ45)
- 1 x OPS slot for PC module.
- Wi-Fi 5 and Wi-Fi 6, IEEE802.11a/b/g/n/ac/ax network protocol
- Wi-Fi 2.4 GHz and 5 GHz dual-band. Wi-Fi hotspot and Wi-Fi client can be enabled at the same time.

OPS Model Requirements

- The performance should be no less than I5-10500, 8G DDR4, and 128G SSD.
- Video out: 1 x HDMI 1.4, 1 x DP 1.2.
- Audio in: 1 x 3.5mm.
- Audio out: 1 x 3.5mm.
- USB: 3 x USB Type-A 3.0, 3 x USB Type-A 2.0.
- Windows 11 enterprise operate system
- Capability of Microsoft 365 integration. The NRF do own the licenses and will install the software.

Whiteboard Requirements

- Writing latency no more than 16ms
- The built-in whiteboard must support handwriting, drawing, erasing, marking, saving, zooming, and locking the whiteboard. The background colour can be changed.
- The whiteboard must support page turning. A maximum of 100 pages are supported
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Projection Requirements

- Wired projection through HDMI cable. Projection resolution support up to 1080p60fps and 4K30fps.
- Wired projection through USB Type-C cable. Projection resolution support up to 1080p60fps and 4K30fps. When PC is projected to the device, the device can control the PC reversely without extra cables.
- Wireless projection by entering the projection code on the mobile phone and PC. Projection resolution support up to 1080p60fps and 4K15fps. When PC is projected to the device, the device can control the PC reversely.
- Wi-Fi Direct projection. Users do not need to configure a Wi-Fi router or change the network of their mobile phones or PCs during screen projection. Projection resolution: up to 1080P60fps and 4K15fps. When PC is projected to the device, the device can control the PC reversely.
- Support wireless dongle for one-click projection for PC. Projection resolution: up to 1080p60fps or 4K15fps. The device can control the PC reversely.
- Must allow users to project through menus on the mobile phone without projection APP.

Video Conferencing Requirements

- Supports video conference function without installation conference APP.
- Video codec: H.264BP, H.264HP and H.265.
- Voice codec: G.711A, G.711U, G.729A, G.722, G.722.1C, Opus and AAC-LD.
- Mainstream video resolution: 1080p 30fps, 720p 60fps, 720p 30fps, 4CIF and CIF
- Presentation resolution up to 1080p 30fps.
- Must support the ITU-T H.323 and IETF SIP communication protocols to ensure good interoperability.

Third-Party Video Conferencing Requirements

- Must support third-party video conference APP
- The camera, microphone and speaker can be used for third-party video conference APP.
- The camera auto-framing and voice tracking features can be used for third-party video conference APP

Openness Requirements

- Android apps can be installed.
- Support APP store dedicated to large screens device.
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Special Features Requirements

- Multi-window: The desktop can be divided into two windows that display two applications. User can change the size of the two windows by dragging the windows.
- Must support BYOM, device hardware capabilities such as microphones, cameras, speakers, and touchscreens can be easily used as peripherals for 3rd party conferences on PC, by using Type-C cables, projection app, or wireless dongle
- Must support dynamic wallpapers and static wallpapers. Wallpapers can be changed and customized to corporate colours
- Clone screen content to another screen via HDMI cable
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- Supported protocols must include: TCP/IP, RTP, RTCP, DHCP, DNS, SMTP, SNTP, SSH, HTTP, HTTPS, and TR-069

Certificate Requirements

- CE Certificate

Backup power

- RJ45 Network Monitored UPS backup power unit with 20min standby time at 100% load of all the Video Conferencing equipment in operation

Step 3

- **Testing of installation including:**
 - Network Connectivity
 - Screen operation
 - Windows Operating System
 - MS Teams functionality
 - Zoom functionality
 - Google Video functionality
 - White boarding
 - Remote presentation functionality
 - Speaker output
 - Microphone input
 - Camera follows voice functionality
 - UPS functionality under full load

Step 4 – Sign off

- Technical diagram of the installation describing the purpose and location of all the components
- Technical manual for IT support including a description, location and operation of all installed components
- User manual with detailed procedures on:
 - Turning the system on and off
 - Setting the volume
 - Selecting the correct source for Video conferencing or remote presentation
 - Starting a Video conferencing session on MS Teams, Zoom and Google
 - Using the Whiteboard functionality
 - Starting a remote sharing session

Step 5: 36-month Warranty (36 months replaces the periods set in GCC15 under General Conditions) on all equipment installed commencing after sign off per venue

10. PERFORMANCE LEVELS STATEMENT

Service/Goods being Measured	Measurement Methodology	Penalty/Bonus and level applicable from
Installation, configuration and testing of the solutions to meet the specified requirements within this document	NRF IT Department representative will form part of the testing of the solution and sign off when specifications and operations are met	If the specified requirements and/or operations are not met, the hand over document will not be signed off.
Service Level Agreement Monday to Friday 08:00 to 17:00 telephonic support 4 Hour Response and repair (Monday to Friday – 08:00 to 17:00) Next business day replace, install and configure	NRF IT Department representatives will expect 1st level technical telephonic support on any components of the installed solution. NRF IT Department representative will expect that calls that could not be solved by the vendor's 1st level support will be escalated to 2nd level support and that the vendor's 2nd level support will endeavour to respond and repair the equipment either remotely or physically within 4 hours. When equipment has been identified to be physically out of order by both the vendor and/or a NRF IT Department representative, the vendor will replace, install and configure that equipment up to its original operating status within the next business day.	Failure by the vendor to answer the call and assist with 1st level support will lead to a 2% penalty fee as per the amount stated in Section C – Professional Services. Failure by the vendor to respond and repair the call with 2nd level support within 4 hours will lead to a 5% penalty fee as per the amount stated in Section C – Professional Services. This penalty only applies for equipment that are not identified as physically out of order. Failure to replace, install and configure the out of order equipment within the next business day will lead to a 10% penalty fee as per the amount stated in Section C – Professional Services.

11. GENERAL AND SPECIAL CONDITIONS OF CONTRACT

In this document words in the singular also mean in the plural and vice versa, words in the masculine mean in the feminine and neuter, words “department” means organs of state inclusive of public entities and vice versa, and the words “will/should” mean “must”.

11. GENERAL AND SPECIAL CONDITIONS OF CONTRACT

The National Research Foundation cannot amend the National Treasury's General Conditions of Contract (GCC). The National Research Foundation compiles separate Special Conditions of Contract (SCC) relevant to this bid where applicable supplementing the General Conditions of Contract. Where there is conflict, the provisions of the Special Conditions of Contract shall prevail.

GCC 1 Definitions - The following terms shall be interpreted as indicated:

- 1.1 "Closing time" means the date and hour specified in the bidding documents for the receipt of bids.
- 1.2 "Contract" means the written agreement entered into between the purchaser and the supplier, as recorded in the contract form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.
- 1.3 "Contract price" means the price payable to the supplier under the contract for the full and proper performance of his contractual obligations.
- 1.4 "Corrupt practice" means the offering, giving, receiving, or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution.
- 1.5 "Countervailing duties" are imposed in cases where an enterprise abroad is subsidized by its government and encouraged to market its products internationally.
- 1.6 "Country of origin" means the place where the goods were mined, grown, or produced, or from which the services are supplied. Goods are produced when, through manufacturing, processing, or substantial and major assembly of components, a commercially recognized new product results that is substantially different in basic characteristics or in purpose or utility from its components
- 1.7 "Day" means calendar day.
- 1.8 "Delivery" means delivery in compliance of the conditions of the contract or order.
- 1.9 "Delivery ex stock" means immediate delivery directly from stock actually on hand.
- 1.10 "Delivery into consignees store or to his site" means delivered and unloaded in the specified store or depot or on the specified site in compliance with the conditions of the contract or order, the supplier bearing all risks and charges involved until the supplies are so delivered and a valid receipt is obtained.
- 1.11 Dumping occurs when a private enterprise abroad market its goods on own initiative in the RSA at lower prices than that of the country of origin and which have the potential to harm the local industries in the RSA.
- 1.12 "Force majeure" means an event beyond the control of the supplier and not involving the supplier's fault or negligence and not foreseeable. Such events may include, but is not restricted to, acts of the purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.
- 1.13 "Fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of any bidder and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the bidder of the benefits of free and open competition.
- 1.14 "GCC" mean the General Conditions of Contract.

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- 1.15 “Goods” means all of the equipment, machinery, and/or other materials that the supplier is required to supply to the purchaser under the contract.
- 1.16 “Imported content” means that portion of the bidding price represented by the cost of components, parts or materials which have been or are still to be imported (whether by the supplier or his subcontractors) and which costs are inclusive of the costs abroad, plus freight and other direct importation costs such as landing costs, dock dues, import duty, sales duty or other similar tax or duty at the South African place of entry as well as transportation and handling charges to the factory in the Republic where the supplies covered by the bid will be manufactured.
- 1.17 “Local content” means that portion of the bidding price, which is not included in the imported content provided that local manufacture does take place.
- 1.18 “Manufacture” means the production of products in a factory using labour, materials, components, and machinery and includes other related value-adding activities.
- 1.19 “Order” means an official written order issued for the supply of goods or works or the rendering of a service.
- 1.20 “Project site”, where applicable, means the place indicated in bidding documents.
- 1.21 “Purchaser” means the organization purchasing the goods.
- 1.22 “Republic” means the Republic of South Africa.
- 1.23 “SCC” means the Special Conditions of Contract.
- 1.24 “Services” means that functional services ancillary to the supply of the goods, such as transportation and any other incidental services, such as installation, commissioning, provision of technical assistance, training, catering, gardening, security, maintenance and other such obligations of the supplier covered under the contract.
- 1.25 “Written” or “in writing” means handwritten in ink or any form of electronic or mechanical writing.
- GCC2 Application
- 2.1 These general conditions are applicable to all bids, contracts and orders including bids for functional and professional services, sales, hiring, letting and the granting or acquiring of rights, but excluding immovable property, unless otherwise indicated in the bidding documents.
- 2.2 Where applicable, special conditions of contract are also laid down to cover specific supplies, services or works.
- 2.3 Where such special conditions of contract are in conflict with these general conditions, the special conditions shall apply.
- GCC 3 General
- 3.1 Unless otherwise indicated in the bidding documents, the purchaser shall not be liable for any expense incurred in the preparation and submission of a bid. Where applicable a non-refundable fee for documents may be charged.

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3.2 With certain exceptions (National Treasury's eTender website), invitations to bid are only published in the Government Tender Bulletin. The Government Tender Bulletin may be obtained directly from the Government Printer, Private Bag X85, Pretoria 0001, or accessed electronically from www.treasury.gov.za

GCC 4 Standards

4.1 The goods supplied shall conform to the standards mentioned in the bidding documents and specifications.

GCC 5 Use of contract documents and information

5.1 The supplier shall not, without the purchaser's prior written consent, disclose the contract, or any provision thereof, or any specification, plan, drawing, pattern, sample, or information furnished by or on behalf of the purchaser in connection therewith, to any person other than a person employed by the supplier in the performance of the contract. Disclosure made to any such employed person is in confidence and shall extend only as far as may be necessary for purposes of such performance.

5.2 The supplier shall not, without the purchaser's prior written consent, make use of any document or information mentioned in GCC clause 5.1 except for purposes of performing the contract.

5.3 Any document, other than the contract itself mentioned in GCC clause 5.1 shall remain the property of the purchaser and shall be returned (all copies) to the purchaser on completion of the supplier's performance under the contract if so required by the purchaser.

5.4 The supplier shall permit the purchaser to inspect the supplier's records relating to the performance of the supplier and consents to have the documents audited by auditors appointed by the purchaser, if so required by the purchaser.

SCC5A Copyright and Intellectual Property

Intellectual property refers to creation of the mind, such as inventions; literary and artistic works; designs; and symbols, names, images used in commerce; and includes copyright (a legal term describing the rights that creators have over their literary and artistic works including books, music, paintings, sculpture and films, to computer programs, databases, advertisements, maps and technical drawings); trademark (a legal term describing a sign capable of distinguishing the goods or services of one enterprise from those of other enterprises); and patents (a legal terms describing an exclusive right granted for an invention providing the patent owner with the right to decide how - or whether - the invention can be used by others).

Background intellectual property is defined as the intellectual property pertaining to this contract and created and owned by any of the contracted parties to this contract prior to the effective date of this contract.

Contract intellectual property is defined as intellectual property created by the parties to this contract for and in the execution of the contract.

All background intellectual property (existing prior to this contract) invests in and remains the sole property of the contracted parties to this contract. Both parties disclose openly such intellectual property ownership to the parties in writing at the commencement of this contract.

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The contracted party grants the NRF a fully paid up, irrevocable, and non-exclusive licence to use its background intellectual property for the exploitation of this contract to enable the NRF to obtain the full benefit of the contracted deliverables for this contract.

The parties agree that all right, title, and interest in contract intellectual property created during the execution of this contract vests with the NRF unless where agreed in writing to a different allocation of the ownership of the contract intellectual property with such allocation being an appendix to this contract.

Both parties shall keep the intellectual property created during the performance of this contract confidential and shall fulfil its confidentiality obligations as set out in this document.

The contracted party agrees to assist the NRF in obtaining statutory protection for the contract intellectual property at the expense of the NRF wherever the NRF may choose to obtain such statutory protection.

The contracted party shall procure where necessary the signatures of its personnel for the assignment of its respective contract intellectual property to the NRF or as the NRF may direct, and to support the NRF or its nominee, in the prosecution and enforcement thereof in any country in the world.

The contracted party irrevocably appoints the NRF to be its true and lawful agent in its own name, to do such acts, deeds, and things and to execute deeds, documents, and forms that the NRF, in its discretion, requires in order to give effect to the terms of this clause.

SCC5B Confidentiality

The recipient of confidential information shall be careful and diligent as not to cause any unauthorised disclosure or use of the confidential information, in particular, during its involvement with the NRF and after termination of its involvement with the NRF, the recipient shall not:

- Disclose the confidential information, directly or indirectly, to any person or entity, without the NRF's prior written consent;
- Use, exploit or in any other manner whatsoever apply the confidential information for any other purpose whatsoever, other than for the execution of the contract and the delivery of the deliverables; or
- Copy, reproduce, or otherwise publish confidentiality information except as strictly required for the execution of the contract.

The recipient shall ensure that any employees, agents, directors, contractors, service providers, and associates which may gain access to the confidential information are bound by agreement with the recipient both during the term of their associations with the recipient and after termination of their respective associations with the recipient, not to

- Disclose the confidential information to any third party, or
- Use the confidential information otherwise than as may be strictly necessary for the execution of the contract,
- The recipient shall take all such steps as may be reasonably necessary to prevent the confidential information from falling into the hands of any unauthorised third party.

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The undertakings set out in this clause shall not apply to confidential information, which the recipient is able to prove that it:

- Was independently developed by the recipient prior to its involvement with the NRF or in the possession of the recipient prior to its involvement with the NRF;
- Has become generally available to the public other than as a result of a breach of this contract by the recipient;
- Was lawfully received by the recipient from a third party acting in good faith having a right of further disclosure and who do not derive the same directly or indirectly from the NRF, or
- Required by law to be disclosed by the recipient, but only to the extent of such order and the recipient shall inform the NRF of such requirement prior to any disclosure.

The recipient shall within one (1) month of receipt of a written request from the NRF to do so, return to the NRF all material embodiments, whether in documentary or electronic form, of the confidential information including but not limited to:

- All written disclosures received from the NRF;
- All written transcripts of confidential information disclosed verbally by the NRF; and
- All material embodiments of the contract intellectual property.

Except as expressly herein provided, this contract shall not be construed as granting or confirming, either expressly or impliedly any rights, licences or relationships by furnishing of confidential information by either party pursuant to this contract.

The recipient acknowledges that the unauthorised disclosure of confidential information may cause harm to the NRF. The recipient agrees that, in the event of a breach or threatened breach of confidentiality, the NRF is entitled to seek injunctive relief or specific performance, in order to obtain immediate remedies. Any such remedy shall be in addition to and not in lieu of any other remedies available at law, including monetary damages.

SCC5C Copyright and Intellectual Property

Subject to compliance with the data protection laws applicable to it from time to time including the Protection of Personal Information Act No.4 of 2013 (POPIA), the third party hereby grants the NRF permission, in terms of POPIA to process, use, or disclose the personal information received in connection to this bid.

GCC6 Patent rights

6.1 The supplier shall indemnify the purchaser against all third-party claims of infringement of patent, trademark, or industrial design rights arising from use of the goods or any part thereof by the purchaser.

GCC7 Performance security

7.1 Within thirty days (30) of receipt of the notification of contract award, the successful bidder shall furnish to the purchaser the performance security of the amount specified in SCC.

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- 7.2 The proceeds of the performance security shall be payable to the purchaser as compensation for any loss resulting from the supplier's failure to complete his obligations under the contract.
- 7.3 The performance security shall be denominated in the currency of the contract, or in a freely convertible currency acceptable to the purchaser and shall be in one of the following forms:
- 7.3.1 bank guarantee or an irrevocable letter of credit issued by a reputable bank located in the purchaser's country or abroad, acceptable to the purchaser, in the form provided in the bidding documents or another form acceptable to the purchaser; or
- 7.3.2 cashier's or certified cheque.
- 7.4 The performance security will be discharged by the purchaser and returned to the supplier within thirty (30) days following the date of completion of the supplier's performance obligations under the contract, including any warranty obligations, unless otherwise specified in SCC.
- GCC8 Inspections, tests and analyses
- 8.1 All pre-bidding testing will be for the account of the bidder.
- 8.2 If it is a bid condition that supplies to be produced or services to be rendered should at any stage during production or execution or on completion be subject to inspection, the premises of the bidder or contractor shall be open, at all reasonable hours, for inspection by a representative of the purchaser or an organization acting on behalf of the purchaser.
- 8.3 If there are no inspection requirements indicated in the bidding documents and no mention is made in the contract, but during the contract period, it is decided that inspections shall be carried out, the purchaser shall itself make the necessary arrangements, including payment arrangements with the testing authority concerned.
- 8.4 If the inspections, tests and analyses referred to in clauses 8.2 and 8.3 show the supplies to be in accordance with the contract requirements, the cost of the inspections, tests and analyses shall be defrayed by the purchaser.
- 8.5 Where the supplies or services referred to in clauses 8.2 and 8.3 do not comply with the contract requirements, irrespective of whether such supplies or services are accepted or not, the supplier shall defray the cost in connection with these inspections, tests, or analyses.
- 8.6 Supplies and services referred to in clauses 8.2 and 8.3 and which do not comply with the contract requirements may be rejected.
- 8.7 Any contract supplies may on or after delivery be inspected, tested or analysed and may be rejected if found not to comply with the requirements of the contract. Such rejected supplies are held at the cost and risk of the supplier who shall, when called upon, remove them immediately at his own cost and forthwith substitute them with supplies, which do comply with the requirements of the contract. Failing such removal the rejected supplies shall be returned at the suppliers cost and risk. Should the supplier fail to provide the substitute supplies forthwith, the purchaser may, without giving the supplier further opportunity to substitute the rejected supplies, purchase such supplies as may be necessary at the expense of the supplier.

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- 8.8 The provisions of clauses 8.4 to 8.7 shall not prejudice the right of the purchaser to cancel the contract because of a breach of the conditions thereof, or to act in terms of Clause 23 of GCC.
- GCC9 Packing
- 9.1 The supplier shall provide such packing of the goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt, and precipitation during transit, and open storage. Packing, case size and weights shall take into consideration, where appropriate, the remoteness of the goods' final destination and the absence of heavy handling facilities at all points in transit.
- 9.2 The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the contract, including additional requirements, if any, specified in SCC, and in any subsequent instructions ordered by the purchaser.
- SCC9 No special condition applicable, unless specified elsewhere in this document.
- GCC10 Delivery and Documentation
- 10.1 Delivery of the goods shall be made by the supplier in accordance with the terms specified in the contract. The details of shipping and/or other documents to be furnished by the supplier are specified in SCC.
- 10.2 Documents submitted by the supplier specified in SCC.
- SCC No special condition applicable, unless specified elsewhere in this document.
- GCC11 Insurance
- 11.1 The goods supplied under the contract shall be fully insured in a freely convertible currency against loss or damage incidental to manufacture or acquisition, transportation, storage and delivery in the manner specified in the SCC.
- SCC11 The appointed bidder carries insurance of at least 3% of the contract value or R 2 million for public liability, product liability, and professional indemnity, whichever is greater.
- GCC12 Transportation
- 12.1 Should a price other than an all-inclusive delivered price be required, this shall be specified in the SCC.
- SCC12 No special condition applicable, unless specified elsewhere in this document.
- GCC13 Incidental services
- 13.1 The supplier may be required to provide any or all of the following services, including additional services, if any, specified in SCC:
- 13.1.1 Performance or supervision of on-site assembly and/or commissioning of the supplied goods;
 - 13.1.2 Furnishing of tools required for assembly and/or maintenance of the supplied goods;

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13.1.3 Furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied goods;

13.1.4 Performance or supervision or maintenance and/or repair of the supplied goods, for a period of time agreed by the parties, provided that this service shall not relieve the supplier of any warranty obligations under this contract; and

13.1.5 Training of the purchaser's personnel, at the supplier's plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied goods.

13.2 Prices charged by the supplier for incidental services, if not included in the contract price for the goods, shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the supplier for similar services.

SCC13 In the event that this document makes provision for such service elsewhere in this document, it is only valid if confirmed through the issuance of a written purchase order that specifies, where applicable, quality, quantity, description, unit price, and delivery date of such services.

GCC14 Spare parts

14.1 As specified in SCC, the supplier may be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the supplier:

14.1.1 Such spare parts as the purchaser may elect to purchase from the supplier, provided that this election shall not relieve the supplier of any warranty obligations under the contract; and

14.1.2 In the event of termination of production of the spare parts:

14.1.2.1 Advance notification to the purchaser of the pending termination, in sufficient time to permit the purchaser to procure needed requirements; and

14.1.2.1 Following such termination, furnishing at no cost to the purchaser, the blueprints, drawings, and specifications of the spare parts, if requested.

SCC14 In the event that this document makes provision of spare parts elsewhere, the term "may" in GCC14 shall be replaced by the term "shall", the supplier provides at commencement of the contract a list of spares, whether in stock or ordered in from the OEM, their lead times for delivery to NRF and their unit prices and at each time, the list is amended, updated, or re-priced. The supplier undertakes to hold and/or make available an adequate supply of spares parts within reasonable periods upon receipt of purchase order issued by the purchaser in terms of the pricing mechanism in GCC17.

GCC15 Warranty

15.1 The supplier warrants that the goods supplied under the contract are new, unused, of the most recent or current models and that they incorporate all recent improvements in design and materials unless provided otherwise in the contract. The supplier further warrants that all goods supplied under this contract shall have no defect, arising from design, materials, or workmanship (except when the design and/or material is required by the purchaser's specifications) or from any act or omission of the supplier, that may develop under normal use of the supplied goods in the conditions prevailing in the country of final destination.

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- 15.2 This warranty shall remain valid for twelve (12) months after the goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the contract, or for eighteen (18) months after the date of shipment from the port or place of loading in the source country, whichever period concludes earlier, unless specified otherwise in SCC.
- 15.3 The purchaser shall promptly notify the supplier in writing of any claims arising under this warranty.
- 15.4 Upon receipt of such notice, the supplier shall, within the period specified in SCC and with all reasonable speed, repair or replace the defective goods or parts thereof, without costs to the purchaser.
- 15.5 If the supplier, having been notified, fails to remedy the defect(s) within the period specified in SCC, the purchaser may proceed to take such remedial action as may be necessary, at the supplier's risk and expense and without prejudice to any other rights, which the purchaser may have against the supplier under the contract.
- SCC15 12 month is replaced with 60 months and 18 months replaced with 66 months. Failure to honour warranty claims within 5 business days up to 5% of the Contract price will be retained until the expiration of the warranty/maintenance period.
- GCC16 Payment
- 16.1 The method and conditions of payment to be made to the supplier under this contract shall be specified in SCC.
- 16.2 The supplier shall furnish the purchaser with an invoice accompanied by a copy of the delivery note and upon fulfilment of other obligations stipulated in the contract.
- 16.3 Payments shall be made promptly by the purchaser, but in no case later than thirty (30) days after submission of an invoice or claim by the supplier.
- 16.4 Payment will be made in Rand unless otherwise stipulated in SCC.
- SCC16 Payment is made 30 days after receipt of invoice or claim by the purchaser to NRF which period is automatically extended by any delay occasioned by the supplier such as failure to supply a copy of the delivery note, if applicable; and/or failure to provide proof of fulfilment of other obligations stipulated in the contract
- GCC17 Prices
- 17.1 Prices charged by the supplier for goods delivered and services performed under the contract shall not vary from the prices quoted by the supplier in his bid, with the exception of any price adjustments authorized in SCC or in the purchaser's request for bid validity extension, as the case may be.
- SCC17 No additional special conditions other than stated in the price section in this document.
- GCC18 Contract amendment
- 18.1 No variation in or modification of the terms of the contract shall be made except by written amendment signed by the parties concerned.
- GCC19 Assignment

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- 19.1 The supplier shall not assign, in whole or in part, its obligations to perform under the contract, except with the purchaser's prior written consent.
- GCC20 Subcontract
- 20.1 The supplier shall notify the purchaser in writing of all subcontracts awarded under this contract if not already specified in the bid. Such notification, in the original bid or later, shall not relieve the supplier from any liability or obligation under the contract
- GCC21 Delays in supplier's performance
- 21.1 Delivery of the goods and performance of services shall be made by the supplier in accordance with the time schedule prescribed by the purchaser in the contract.
- 21.2 If at any time during performance of the contract, the supplier or its subcontractor(s) should encounter conditions impeding timely delivery of the goods and performance of services, the supplier shall promptly notify the purchaser in writing of the fact of the delay, its likely duration, and its cause(s). As soon as practicable after receipt of the supplier's notice, the purchaser shall evaluate the situation and may at his discretion extend the supplier's time for performance, with or without the imposition of penalties, in which case the extension shall be ratified by the parties by amendment of contract.
- 21.3 No provision in a contract shall be deemed to prohibit the obtaining of supplies or services from a national department, provincial department, or a local authority.
- 21.4 The right is reserved to procure outside of the contract small quantities or to have minor essential services executed if an emergency arises, the supplier's point of supply is not situated at or near the place where the supplies are required, or the supplier's services are not readily available.
- 21.5 Except as provided under GCC Clause 25, a delay by the supplier in the performance of its delivery obligations shall render the supplier liable to the imposition of penalties, pursuant to GCC Clause 22, unless an extension of time is agreed upon pursuant to GCC Clause 21.2 without the application of penalties.
- 21.6 Upon any delay beyond the delivery period in the case of a supplies contract, the purchaser shall, without cancelling the contract, be entitled to purchase supplies of a similar quality and up to the same quantity in substitution of the goods not supplied in conformity with the contract and to return any goods delivered later at the supplier's expense and risk, or to cancel the contract and buy such goods as may be required to complete the contract and without prejudice to his other rights, be entitled to claim damages from the supplier.
- GCC22 Penalties
- 22.1 Subject to GCC Clause 25, if the supplier fails to deliver any or all of the goods or to perform the services within the period(s) specified in the contract, the purchaser shall, without prejudice to its other remedies under the contract, deduct from the contract price, as a penalty, a sum calculated on the delivered price of the delayed goods or unperformed services using the current prime interest rate calculated for each day of the delay until actual delivery or performance. The purchaser may also consider termination of the contract pursuant to GCC Clause 23.
- GCC23 Termination for default

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- 23.1 The purchaser, without prejudice to any other remedy for breach of contract, by written notice of default sent to the supplier, may terminate this contract in whole or in part:
- 23.1.1 If the supplier fails to deliver any or all of the goods within the period(s) specified in the contract, or within any extension thereof granted by the purchaser pursuant to GCC Clause 21.2;
- 23.1.2 If the supplier fails to perform any other obligation(s) under the contract; or
- 23.1.3 If the supplier, in the judgment of the purchaser, has engaged in corrupt or fraudulent practices in competing for or in executing the contract.
- 23.2 In the event the purchaser terminates the contract in whole or in part, the purchaser may procure, upon such terms and in such manner as it deems appropriate, goods, works or services similar to those undelivered, and the supplier shall be liable to the purchaser for any excess costs for such similar goods, works or services. However, the supplier shall continue performance of the contract to the extent not terminated.
- 23.3 Where the purchaser terminates the contract in whole or in part, the purchaser may decide to impose a restriction penalty on the supplier by prohibiting such supplier from doing business with the public sector for a period not exceeding 10 years.
- 23.4 If a purchaser intends imposing a restriction on a supplier or any person associated with the supplier, the supplier will be allowed a time period of not more than fourteen (14) days to provide reasons why the envisaged restriction should not be imposed. Should the supplier fail to respond within the stipulated fourteen (14) days the purchaser may regard the intended penalty as not objected against and may impose it on the supplier.
- 23.5 Any restriction imposed on any person by the Accounting Authority will, at the discretion of the Accounting Authority, also be applicable to any other enterprise or any partner, manager, director or other person who wholly or partly exercises or exercised or may exercise control over the enterprise of the first-mentioned person, and with which enterprise or person the first-mentioned person, is or was in the opinion of the Accounting Authority actively associated.
- 23.6 If a restriction is imposed, the purchaser must, within five (5) working days of such imposition, furnish the National Treasury, with the following information:
- 23.6.1 the name and address of the supplier and / or person restricted by the purchaser;
- 23.6.2 the date of commencement of the restriction
- 23.6.3 the period of restriction; and
- 23.6.4 the reasons for the restriction.
- These details will be loaded in the National Treasury's central database of suppliers or persons prohibited from doing business with the public sector.
- 23.7 If a court of law convicts a person of an offence as contemplated in sections 12 or 13 of the Prevention and Combating of Corrupt Activities Act, No. 12 of 2004, the court may also rule that such person's name be endorsed on the Register for Tender Defaulters. When a person's name has been endorsed on the Register, the person will be prohibited from doing business with the public sector for a period not less than five years and not more than ten (10) years. The National Treasury is empowered to determine the period of restriction, and

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each case will be dealt with on its own merits. According to Section 32 of the Act, the Register must be open to the public. The Register can be perused on the National Treasury website.

GCC24 Anti-dumping and countervailing duties and rights

24.1 When, after the date of bid, provisional payments are required, or anti-dumping or countervailing duties are imposed, or the amount of a provisional payment or anti-dumping or countervailing right is increased in respect of any dumped or subsidized import, the State is not liable for any amount so required or imposed, or for the amount of any such increase. When, after the said date, such a provisional payment is no longer required or any such anti-dumping or countervailing right is abolished, or where the amount of such provisional payment or any such right is reduced, any such favourable difference shall on demand be paid forthwith by the contractor to the State or the State may deduct such amounts from moneys (if any) which may otherwise be due to the contractor in regard to supplies or services which he delivered or rendered, or is to deliver or render in terms of the contract or any other contract or any other amount which may be due to him.

GCC25 Force Majeure

25.1 Notwithstanding the provisions of GCC Clauses 22 and 23, the supplier shall not be liable for forfeiture of its performance security, damages, or termination for default if and to the extent that his delay in performance or other failure to perform his obligations under the contract is the result of an event of force majeure.

25.2 If a force majeure situation arises, the supplier shall promptly notify the purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the purchaser in writing, the supplier shall continue to perform its obligations under the contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the force majeure event.

GCC26 Termination for insolvency

26.1 The purchaser may at any time terminate the contract by giving written notice to the supplier if the supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the supplier, provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the purchaser.

GCC27 Settlement of disputes

27.1 If any dispute or difference of any kind whatsoever arises between the purchaser and the supplier in connection with or arising out of the contract, the parties shall make every effort to resolve amicably such dispute or difference by mutual consultation.

27.2 If, after thirty (30) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the purchaser or the supplier may give notice to the other party of his intention to commence with mediation. No mediation in respect of this matter may be commenced unless such notice is given to the other party.

27.3 Should it not be possible to settle a dispute by means of mediation, it may be settled in a South African court of law.

27.4 Mediation proceedings shall be conducted in accordance with the rules of procedure specified in the SCC.

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- 27.5 Notwithstanding any reference to mediation and/or court proceedings herein,
27.5.1 the parties shall continue to perform their respective obligations under the contract unless they otherwise agree; and
27.5.2 the purchaser shall pay the supplier any monies due the supplier.
- GCC28 Limitation of liability
- 28.1 Except in cases of criminal negligence or wilful misconduct, and in the case of infringement pursuant to Clause 6;
28.1.1 the supplier shall not be liable to the purchaser, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the supplier to pay penalties and/or damages to the purchaser; and
28.1.2 the aggregate liability of the supplier to the purchaser, whether under the contract, in tort or otherwise, shall not exceed the total contract price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment.
- GCC29 Governing language
- 29.1 The contract shall be written in English. All correspondence and other documents pertaining to the contract that is exchanged by the parties shall also be written in English.
- GCC30 Applicable law
- 30.1 The contract shall be interpreted in accordance with South African laws, unless otherwise specified in SCC.
- GCC31 Notices
- 31.1 Every written acceptance of a bid shall be posted to the supplier concerned by registered or certified mail and any other notice to him shall be posted by ordinary mail to the address furnished in his bid or to the address notified later by him in writing and such posting shall be deemed to be proper service of such notice.
- 31.2 The time mentioned in the contract documents for performing any act after such aforesaid notice has been given, shall be reckoned from the date of posting of such notice.
- GCC32 Taxes and duties
- 32.1 A foreign supplier shall be entirely responsible for all taxes, stamp duties, license fees, and other such levies imposed outside the purchaser's country.
- 32.2 A local supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted goods to the purchaser.
- 32.3 No contract shall be concluded with any bidder whose tax matters are not in order. Prior to the award of a bid, the Department must be in possession of a tax clearance certificate, submitted by the bidder. This certificate must be an original issued by the South African Revenue Services.

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GCC33 National Industrial Participation Programme

33.1 The NIP Programme administered by the Department of Trade and Industry shall be applicable to all contracts that are subject to the NIP obligation.

GCC34 Prohibition of restrictive practices

34.1 In terms of Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, an agreement between, or concerted practice by, firms, or a decision by an association of firms, is prohibited if it is between parties in a horizontal relationship and if a bidder (s) is/are or a contractor(s) was/were involved in collusive bidding (or bid rigging).

34.2 If a bidder(s) or contractor(s), based on reasonable grounds or evidence obtained by the purchaser, has/have engaged in the restrictive practice referred to above, the purchaser may refer the matter to the Competition Commission for investigation and possible imposition of administrative penalties as contemplated in the Competition Act No. 89 of 1998.

34.3 If a bidder(s) or contractor(s), has/have been found guilty by the Competition Commission of the restrictive practice referred to above, the purchaser may, in addition and without prejudice to any other remedy provided for, invalidate the bid(s) for such item(s) offered, and/or terminate the contract in whole or part, and/or restrict the bidder(s) or contractor(s) from conducting business with the public sector for a period not exceeding ten (10) years and/or claim damages from the bidder(s) or contractor(s) concerned.

12. EVALUATION CRITERIA TO DETERMINE BID ACCEPTANCE

<u>Selection Decision</u>	Description of Evidence Required	<u>Bid Section Reference</u>	Reference to bidder's document	Decision Weight	DECISION SCHEME	NRF-RIISA VERIFICATION
The bidder has attended the compulsory Briefing Session	Bidder's signature on the attendance register			Mandatory	Yes / No	
Has the bidder completed and signed the SBD 4 form?	SBD 4 Form and CSD report	Bidder's Qualifications on pages 83 to 85		Mandatory	Yes / No	
Has the bidder made any disclosures of ethical and practises which would preclude it from responding to this bid?				Mandatory	Yes / No	
Does the CSD report show any issues?				Mandatory	Yes / No	
Has the bidder been disbarred?				Mandatory	Yes / No	
Has the bidder signed the SBD 1?		Bidder's Qualifications		Mandatory	Yes / No	

Has the bidder failed any of the mandatory disqualifications?	Completed and Signed SBD 1 with supporting detail report from the CSD	on pages 81 to 82		Mandatory	Yes / No	
Does the bidder's preference claim supported by appropriate evidence proving the claim?	Signed SBD 6.1 with proof substantiating the preference points being claimed	Bidder's Qualifications on pages 85 to 90.		Optional	Yes / No	
Did the bidder submit its pricing schedule in a separate folder?	SBD 3.1 Form	Bidder's Qualifications on pages 73 to 80		Mandatory	Yes / No	
Proof of at least 3 similar projects and contract values during the past 36 months with contactable numbers for reference purposes.		Bidder's Qualifications on page 11		Mandatory	Yes / No	
Three contactable references of similar projects done in the past 24 months.		Bidder's Qualifications on page 11		Mandatory	Yes / No	
Reseller OEM Certification for equipment provision.		Bidder's Qualifications on page 11		Mandatory	Yes / No	

Current OEM Training Certification and detailed CV's indicating experience in the design, installation and testing of the proposed solution of at least 2 technicians		Bidder's Qualifications on page 11		Mandatory	Yes / No	
<u>Method Statement</u> The service provider will need to perform and submit a detailed systems and needs analysis per venue to ensure that the proposed solution will ensure uniform standardisation of all the meeting venues which will include end user ease of use. Microsoft 365 integration, video conferencing capabilities including Zoom, MS Teams, WEBEX, Google. etc						

**BIDDER IS ABLE TO DELIVER THE SPECIFICATION AND MEET
CONTRACT CONDITIONS?**

**YES – PASS TO PRICING
COMPETITION**

**NO–
DISQUALIFIED**

SBD 3.1: PRICING DETAIL

Pricing Special Conditions

1	<u>Pricing Schedule:</u> In terms of <u>General Conditions of contract clause 17.1</u> , the price schedule remains unchanged for the duration of the contract with the NRF accepting no changes, extensions, or additional ad hoc costs to the pricing conditions of the contract with the exception of any price adjustments authorised in the Special Conditions of Contract for pricing set out below:
2	<u>Firm Quantities over the Contract Period:</u> The NRF requires firm set quantities during the current period with the time of delivery being determined during the contract period.
3	<u>Estimated quantities over the Contract Period:</u> The NRF may require further quantities during the current period with the actual quantity and time of delivery being determined when such quantities are needed. For bidding purposes and to establish the contract ceiling price, the NRF provides estimated quantities of what its requirements and estimated timing during the contract period for bidders to establish their pricing. The NRF does not provide guarantees or commitments that it will order this entire amount during the contract's life. The NRF, through the signed contract, guarantees its procurement of the specified goods and/or services is from the contracted party only.
4	<u>Placement of written purchase orders for actual quantities ordered:</u> The NRF manages the execution of this contract through the issue of written purchase orders – stipulating quantity, description, delivery date, and the unit price as set out in this contract - for the contracted supplies. The NRF, when issuing the written purchase order, guarantees that the funding is available.
5	<u>Contract Ceiling Price:</u> With these estimates in the bid contract, the contract ceiling price includes both the firm quantities and the potential future quantities within the contract ceiling price. The NRF manages the contract within the contract ceiling price by paying only for the verified deliveries/performances in terms of the clauses of this contract. The cumulative value of each of these invoices at the expiry of the contract is the actual total contract price.
6	<u>Price Adjustments:</u> In terms of <u>General Conditions of Contract clause 17.1</u> , the price adjustments with the rules for application are set out below as special conditions of <u>Contract Clause 17.1</u> . <u>Price adjustments and their corresponding rules are for the management of price risks on the basis of the NRF and the contracted bidder sharing the risk equally.</u>
7	<u>Price quoted</u> is South African Rands in terms of General Conditions of contract clause 16.4
8	<u>Price Quotation Basis:</u> Price quoted is fully inclusive of all costs including delivery to the specified NRF price delivery point and includes value-added tax, income tax, unemployment insurance fund contributions, and skills development levies in terms of General Conditions of contract clauses 12, 32.1 and 32.2. <u>Price Delivery Point:</u> In cases where different delivery points influence the pricing, the bidder submits a separate pricing schedule for each delivery point.
9	<u>Detail Pricing Support:</u> Detailed information e.g. costed bill of quantities is optional where not stated in the price schedule below and is provided as an annexure to the details included in this SBD 3
10	<u>Application of Preference Points:</u> Pricing is subject to the addition of Preference Points as stipulated below - Standard Bidding Document 6.1 Preference claim form.

SBD 3.1: PRICING DETAIL

PRICING SCHEDULE

DESCRIPTION/ (Reference to specific specification)		QTY	UNIT OF MEASURE	UNIT PRICE INCLUDING VAT	TOTAL PRICE INCLUSIVE OF VAT
PHASE 1					
NELSON MANDELA EXECUTIVE BOARDROOM – 36-Seater venue					
1	1 x 138" integrated video conference collaboration unit (wall mounted) with camera follows voice functionality	1	Each		
2	1 x 65" touch-screen integration video collaboration control unit with remote control (Mobile)	1	Each		
3	Microphone-speaker solution for 36-seater venue	1			
4	RJ45 Network Monitored UPS backup power with 20min standby time at 100% load of all the Video Conferencing equipment in operation	1	Each		
Professional Services					
1	Installation, configuration and testing	1	Each		
2	Documentation, training and handover	1	Each		
3	Maintenance Agreement	36	Months		
Phase 1 - SUBTOTAL					
PATRICIA BERJAK Meeting Room – 20-Seater venue					
1	65" touch-screen integration video collaboration unit with remote control (wall mounted) with camera follows voice functionality	1	Each		
2	Microphone-speaker solution for	1			

SBD 3.1: PRICING DETAIL					
	20-seater venue				
3	RJ45 Network Monitored UPS backup power with 20min standby time at 100% load of all the Video Conferencing equipment in operation	1	Each		
Professional Services – 16-Seater venue					
1	Installation, configuration and testing	1	Each		
2	Documentation, training and handover	1	Each		
3	Warranty	36	Months		
Phase 1 - SUBTOTAL					
ESKIA MPHAHLELE Meeting Room – 16-Seater venue					
1	65" touch-screen integration video collaboration unit with remote control (wall mounted) with camera follows voice functionality	1	Each		
2	Microphone-speaker solution for 16-seater venue				
3	RJ45 Network Monitored UPS backup power with 20min standby time at 100% load of all the Video Conferencing equipment in operation	1	Each		
Professional Services					
1	Installation, configuration and testing	1	Each		
2	Documentation, training and handover	1	Each		
3	Warranty	36	Months		
Phase 1 - SUBTOTAL					
PHILIP TOBIAS Meeting Room – 16-Seater venue					
1	65" touch-screen integration	1	Each		

SBD 3.1: PRICING DETAIL					
	video collaboration unit with remote control (wall mounted) with camera follows voice functionality				
2	Microphone-speaker solution for 20-seater venue	1			
3	RJ45 Network Monitored UPS backup power with 20min standby time at 100% load of all the Video Conferencing equipment in operation	1	Each		
Professional Services					
1	Installation, configuration and testing	1	Each		
2	Documentation, training and handover	1	Each		
3	Warranty	36	Months		
Phase 1 - SUBTOTAL					
REINHARDT ARNDT Boardroom – 30-Seater venue					
1	86" touch-screen integration video collaboration unit with remote control (wall mounted) with camera follows voice functionality	1	Each		
2	Microphone and speaker solution for 30-seater venue	1			
3	RJ45 Network Monitored UPS backup power with 20min standby time at 100% load of all the Video Conferencing equipment in operation	1	Each		
Professional Services					
1	Installation, configuration and testing	1	Each		
2	Documentation, training and handover	1	Each		
3	Warranty	36	Months		

SBD 3.1: PRICING DETAIL					
Phase 1 - SUBTOTAL					
TIYO SOGA Auditorium – 60-Seater venue with stage					
1	86" touch-screen integration video collaboration unit with remote control (mobile)	1	Each		
2	Microphone-speaker solution for 60-seater venue	1			
3	Camera follows voice for speaker and audience individually	2	Each		
4	RJ45 Network Monitored UPS backup power with 20min standby time at 100% load of all the Video Conferencing equipment in operation	1	Each		
5	Software licensing – Please complete licensing required below: L01_____ L02_____ L03_____ L04_____				
Professional Services					
1	Installation, configuration and testing	1	Each		
2	Documentation, training and handover	1	Each		
3	Warranty	36	Months		
Phase 1 – SUBTOTAL					
PHASE 1 – TOTAL					
PHASE 2					
ALBERT LUTHULI Auditorium – 220-Seater venue with stage					

SBD 3.1: PRICING DETAIL					
1	138" integration video collaboration unit with remote control (wall mounted)	2	Each		
2	Tablet-based video collaboration unit control panel	1	Each		
3	Camera follows voice for speaker and audience individually	2	Each		
4	Microphone-speaker solution for 220-seater venue with stage	1			
5	RJ45 Network Monitored UPS backup power with 20min standby time at 100% load of all the Video Conferencing equipment in operation	2	Each		
Professional Services					
1	Installation, configuration and testing	1	Each		
2	Documentation, training and handover	1	Each		
3	Maintenance Agreement	36	Months		
PHASE 2 -TOTAL					
PHASE 3					
FW DE KLERK Meeting Room					
1	65" touch-screen integration video collaboration unit with remote control (wall mounted) with camera follows voice functionality	1			
2	RJ45 Network Monitored UPS backup power with 20min standby time at 100% load of all the Video Conferencing equipment in operation	1			
3	Microphone speaker solution for 12-seater	1			
4	Software licensing – Please				

SBD 3.1: PRICING DETAIL					
	complete licensing required below: L01_____				
	L02_____				
	L03_____				
	L04_____				
Professional Services					
1	Installation, configuration and testing	1	Each		
2	Documentation, training and handover	1	Each		
3	Warranty	36	Months		
Phase 3 - SUBTOTAL					
JM COETZEE Meeting Room					
1	65" touch-screen integration video collaboration unit with remote control (wall mounted) with camera follows voice functionality	1			
2	RJ45 Network Monitored UPS backup power with 20min standby time at 100% load of all the Video Conferencing equipment in operation	1			
3	Microphone speaker solution for 12-seater	1			
Professional Services					
1	Installation, configuration and testing	1	Each		
2	Documentation, training and handover	1	Each		
3	Warranty	36	Months		
Phase 3 - SUBTOTAL					

SBD 3.1: PRICING DETAIL

SYDNEY BRENNER Meeting Room

1	65" touch-screen integration video collaboration unit with remote control (wall mounted) with camera follows voice functionality	1			
2	RJ45 Network Monitored UPS backup power with 20min standby time at 100% load of all the Video Conferencing equipment in operation	1			
3	Microphone speaker solution for 12-seater	1			

Professional Services

1	Installation, configuration and testing	1	Each		
2	Documentation, training and handover	1	Each		
3	Warranty	36	Months		

Phase 3 - SUBTOTAL

NADINE GORDIMER Meeting Room

1	65" touch-screen integration video collaboration unit with remote control (wall mounted) with camera follows voice functionality	1			
2	RJ45 Network Monitored UPS backup power with 20min standby time at 100% load of all the Video Conferencing equipment in operation	1			
3	Microphone-speaker solution for 12-seater	1			

Professional Services

1	Installation, configuration and testing	1	Each		
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SBD 3.1: PRICING DETAIL					
2	Documentation, training and handover	1	Each		
3	Warranty	36	Months		
Phase 3 - SUBTOTAL					
ATRIUM Meeting Room					
1	65" touch-screen integration video collaboration unit with remote control (wall mounted) with camera follows voice functionality	1			
2	RJ45 Network Monitored UPS backup power with 20min standby time at 100% load of all the Video Conferencing equipment in operation	1			
3	Microphone-speaker solution for 24 seater	1			
Professional Services					
1	Installation, configuration and testing	1	Each		
2	Documentation, training and handover	1	Each		
3	Warranty	36	Months		
Phase 3 - SUBTOTAL					
PHASE 3 -TOTAL					
PRICING SUMMARY					
PHASE 1 - TOTAL					
PHASE 2 – TOTAL					
PHASE 3 – TOTAL					
GRAND TOTAL					
TOTAL CONTRACT VALUE OF ABOVE (CEILING PRICE) INCLUSIVE OF 15% VAT				R	

PART A
INVITATION TO BID

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE (NAME OF DEPARTMENT/ PUBLIC ENTITY)					
BID NUMBER:	NRF/CORP ICT/67/2024-25	CLOSING DATE:	11 April 2025	CLOSING TIME:	11h00am
DESCRIPTION	APPOINTMENT OF A SERVICE PROVIDER FOR OPTIMISATION, INSTALLATION AND SUPPORT FOR VIDEO CONFERENCING EQUIPMENT IN MEETING VENUES OVER A PERIOD OF 36 MONTHS FOR THE NATIONAL RESEARCH FOUNDATION (NRF) IN BRUMMERIA, PRETORIA				
BID RESPONSE DOCUMENTS MAY BE DEPOSITED IN THE BID BOX SITUATED AT (STREET ADDRESS)					
N/A (Electronic submission)					
BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO			TECHNICAL ENQUIRIES MAY BE DIRECTED TO:		
CONTACT PERSON	Moshidi Mosena		CONTACT PERSON	Darryl Lloyd	
E-MAIL ADDRESS	m.mosena@risa.nrf.ac.za		E-MAIL ADDRESS	darryl@nrf.ac.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

ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES OFFERED? ☐Yes ☐No [IF YES ENCLOSE PROOF]	ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS /SERVICES OFFERED? ☐Yes ☐No [IF YES, ANSWER THE QUESTIONNAIRE BELOW]
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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.**

PART B

TERMS AND CONDITIONS FOR BIDDING

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, THE GENERAL CONDITIONS OF CONTRACT (GCC) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT. 1.4. THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (SBD7).
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 PIN 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.

13. SBD 4 - 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 is 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 State institution

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.

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:

.....

.....

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.

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.

- 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

14. PREFERENCE POINTS CLAIMED (SBD 6.1)

PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2022

This preference form must form part of all tenders invited. It contains general information and serves as a claim form for preference points for specific goals.

NB: BEFORE COMPLETING THIS FORM, TENDERERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF THE TENDER AND PREFERENTIAL PROCUREMENT REGULATIONS, 2022

1. GENERAL CONDITIONS

1.1 The following preference point systems are applicable to invitations to tender:

14. PREFERENCE POINTS CLAIMED (SBD 6.1)

- the 80/20 system for requirements with a Rand value of up to R50 000 000 (all applicable taxes included); and
- the 90/10 system for requirements with a Rand value above R50 000 000 (all applicable taxes included).

1.2 To be completed by the organ of state

- a) The applicable preference point system for this tender is the **80/20** preference point system.
- b) The **80/20 preference point system** will be applicable in this tender. The lowest/ highest acceptable tender will be used to determine the accurate system once tenders are received.

1.3 Points for this tender (even in the case of a tender for income-generating contracts) shall be awarded for:

- (a) Price; and
- (b) Specific Goals.

1.4 To be completed by the organ of state:

The maximum points for this tender are allocated as follows:

	POINTS
PRICE	80
SPECIFIC GOALS	20
Total points for Price and SPECIFIC GOALS	100

1.5 Failure on the part of a tenderer to submit proof or documentation required in terms of this tender to claim points for specific goals with the tender, will be interpreted to mean that preference points for specific goals are not claimed.

1.6 The organ of state reserves the right to require of a tenderer, either before a tender is adjudicated or at any time subsequently, to substantiate any claim in regard to preferences, in any manner required by the organ of state.

2. DEFINITIONS

- (a) **“tender”** means a written offer in the form determined by an organ of state in response to an invitation to provide goods or services through price quotations, competitive tendering process or any other method envisaged in legislation;
- (b) **“price”** means an amount of money tendered for goods or services, and includes all applicable taxes less all unconditional discounts;
- (c) **“rand value”** means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes;
- (d) **“tender for income-generating contracts”** means a written offer in the form determined by an organ of state in response to an invitation for the origination of income-generating contracts through any method envisaged in legislation that will result in a legal agreement between the organ of state and a third party that produces revenue for the organ of state, and includes, but is not limited to, leasing and disposal of assets and concession contracts, excluding direct sales and disposal of assets through public auctions; and

14. PREFERENCE POINTS CLAIMED (SBD 6.1)

(e) “the Act” means the Preferential Procurement Policy Framework Act, 2000 (Act No. 5 of 2000).

3. FORMULAE FOR PROCUREMENT OF GOODS AND SERVICES

3.1. POINTS AWARDED FOR PRICE

3.1.1 THE 80/20 PREFERENCE POINT SYSTEMS

A maximum of 80 points is allocated for price on the following basis:

80/20

$$Ps = 80 \left(1 - \frac{Pt - P_{min}}{P_{min}} \right)$$

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmin = Price of lowest acceptable tender

3.2. FORMULAE FOR DISPOSAL OR LEASING OF STATE ASSETS AND INCOME GENERATING PROCUREMENT

3.2.1. POINTS AWARDED FOR PRICE

A maximum of 80 or 90 points is allocated for price on the following basis:

80/20 or 90/10

$$Ps = 80 \left(1 + \frac{Pt - P_{max}}{P_{max}} \right) \quad \text{or} \quad Ps = 90 \left(1 + \frac{Pt - P_{max}}{P_{max}} \right)$$

Where

Ps = Points scored for price of tender under consideration

Pt = Price of tender under consideration

Pmax = Price of highest acceptable tender

4. POINTS AWARDED FOR SPECIFIC GOALS

4.1. In terms of Regulation 4(2); 5(2); 6(2) and 7(2) of the Preferential Procurement Regulations, preference points must be awarded for specific goals stated in the tender. For the purposes of this tender the tenderer will be allocated points based on the goals stated in table 1 below as may be supported by proof/ documentation stated in the conditions of this tender:

4.2. In cases where organs of state intend to use Regulation 3(2) of the Regulations, which states that, if it is unclear whether the 80/20 or 90/10 preference point system applies, an organ of state must, in the tender documents, stipulate in the case of—

(a) an invitation for tender for income-generating contracts, that either the 80/20 or 90/10 preference point system will apply and that the highest acceptable tender will be used to determine the applicable preference point system; or

14. PREFERENCE POINTS CLAIMED (SBD 6.1)

(b) any other invitation for tender, that either the 80/20 or 90/10 preference point system will apply and that the lowest acceptable tender will be used to determine the applicable preference point system, then the organ of state must indicate the points allocated for specific goals for both the 90/10 and 80/20 preference point system.

Table 1: Specific goals for the tender and points claimed are indicated per the table below.

(Note to organs of state: Where either the 90/10 or 80/20 preference point system is applicable, corresponding points must also be indicated as such.

Note to tenderers: The tenderer must indicate how they claim points for each preference point system.)

NRF will use the B-BBEE status level scoring table

Preference points are allocated to both procurement and income-generation based on the two different thresholds in terms of the table below:

The specific goals allocated points in terms of this tender: B-BBEE Status Level of Contributor	Number of points allocated (80/20 system)	Number of points claimed (80/20 system) (To be completed by the tenderer)
1	20	
2	18	
3	14	
4	12	
5	8	
6	6	
7	4	
8	2	
Non-compliant	0	

DECLARATION WITH REGARD TO COMPANY/FIRM

4.3. Name of company/firm.....

4.4. Company registration number:

4.5. TYPE OF COMPANY/ FIRM

☐ Partnership/Joint Venture / Consortium

☐ One-person business/sole propriety

14. PREFERENCE POINTS CLAIMED (SBD 6.1)

- ☐ Close corporation
- ☐ Public Company
- ☐ Personal Liability Company
- ☐ (Pty) Limited
- ☐ Non-Profit Company
- ☐ State Owned Company

[Tick applicable box]

- 4.6. I, the undersigned, who is duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the specific goals as advised in the tender, qualifies the company/ firm for the preference(s) shown and I acknowledge that:
- i) The information furnished is true and correct;
 - ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form;
 - iii) In the event of a contract being awarded as a result of points claimed as shown in paragraphs 1.4 and 4.2, the contractor may be required to furnish documentary proof to the satisfaction of the organ of state that the claims are correct;
 - iv) If the specific goals have been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the organ of state may, in addition to any other remedy it may have –
 - (a) disqualify the person from the tendering process;
 - (b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;
 - (c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;
 - (d) recommend that the tenderer or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted from obtaining business from any organ of state for a period not exceeding 10 years, after the *audi alteram partem* (hear the other side) rule has been applied; and
 - (e) forward the matter for criminal prosecution, if deemed necessary.

.....
SIGNATURE(S) OF TENDERER(S)

SURNAME AND NAME:

DATE:

ADDRESS:

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)