Invitation to Tender (ITT) Ref 462-2019

For the provision of Audio Visual Equipment to the Commonwealth Secretariat

ITT Clarifications: Queries and Answers

Deadline for questions: 10/4/2019

Responses published: 12/4/2019

Q1: Wireless Systems

We would like to make the Secretariat aware of the issues that have been encountered when using wireless delegate microphone systems.

*The nature of wireless means that no system can be considered to be 100% reliable and ALL systems currently on the market are prone to interference from other sources. Frequencies can be scanned prior to installation, but the nature of interference is, that it is random and intermittent. Sources are mobile and often unlicensed e.g. pirate radio, therefore making it persistent and unpredictable. Therefore, an audit of radio frequencies, as requested, is almost impossible.*

*Also, as part of the preparation for the 5G networks, Ofcom are clearing certain frequencies and offering a scrappage scheme for current users. As a result, heavier traffic will be encountered on the remaining commercial frequencies, thereby compounding the problem with new users switching over to the frequencies that remain.*

There are documented cases where wireless systems have had to be replaced by wired systems.

Exerts from a real life example detailed below (names of parties withheld)

“Wireless technology has its place, for corporate boardrooms and small-scale meeting environments, but where robust reliability is key, as in during Council sessions, wired technology always prevails. The Council have had ongoing issues with their existing wireless system due to signal interference. There is no wireless system on the market that is scientifically able to guarantee claimed ‘zero interference’, and therefore investing in wireless technology, will unfortunately invest into the same ongoing problem.

**Wireless Systems’ Disadvantages**

- Expensive to purchase
- Battery reliability
- Interference problems
- Expensive to maintain
- Non-future proofed
- Limited functionality - additional functionality always at a proportionately high cost
- Perceived logistical ease - setup, remembering to charge, breakdown (including recharging), are all realistic issues
• Since we have been servicing the Council’s AV systems, there has been a consistent issue with the wireless microphones

• The problems with the microphones as described, appear to be classic signs of interference - caused simply by the fact that the microphones are wireless (operating on RF frequencies)

• The webcasting, hearing loop or other elements of the AV system e.g. control touch panel, HDMI monitors, visualiser - are highly unlikely to be causes of interference

• We have exhaustively tried, over the last 2yrs, to:

  o re-create the issues so that we can pinpoint them, during mock setups and tests. It has not been possible to recreate the issues

  o sit in on actual Council meetings, including the Thursday evening Cabinet meetings where the majority of the problems are reported, to experience the issues and pinpoint them. As luck would have it, no issues have been experienced (most recently on 25th September 2017 and 5th October 2017)

The reasons for the problems not manifesting ‘when you want’, is that interference on a wireless RF system is intermittent

• It is not a cost-effective option for the Council to run further mock tests / setups, or for a contractor in to supervise meetings to try and diagnose the issues. All scenarios have been exhausted, and there is no further analysis to draw. Remote diagnosis is not a viable option

• The issues, to date, have not been resolved because our suggestions have not been followed through to the end (despite having put them forward on a number of occasions over the last two years)

• The Council have two very clear options:

  1. Swap the wireless microphones for hardwired microphones - costs have been provided. The hardwired microphones would work in the same way that the existing microphones do, i.e. they would simply connect into floorboxes.

  2. Continue using the wireless microphones, with intermittent issues

The Webcasting setup would remain unaffected.

Many other sites have been affected by these issues including other London borough Councils,

The Canadian Government also removed their wireless system due to security issues, and replaced it with wired.

Other examples where Wireless has been replaced by a wired system:

Le Centre National De Formation De Formateurs Et De L’ Ingénierie De Formation - Tunisia 2018

Congreso de Mexicali - Mexico 2016

United Nations: Room XVII - New York
Modern purpose built conference centres are designed and constructed with a special mesh built into the structure to prevent external interference this is called a “Faraday Cage”. Unfortunately, this is not the case with Marlborough House, and in our experience, gained over many years working in central London, and in the surrounding areas, the radio frequencies are particularly congested - hence our concerns.

The ITT document continued in 7.3 with:
“The Contractor shall maintain appropriate records and provide the Secretariat with the agreed information and data, when requested, to monitor performance. In the event of an unsatisfactory level of quality being sustained, the Contractor will be notified of the defaults and the time by which they must be rectified. If performance remains unsatisfactory, the agreement may be terminated as set out in the Secretariat’s Terms and Conditions for the agreement.”

Our primary concern regarding the establishment of an SLA would be with the performance of the wireless system. *Based on our extensive experience with delegate multi microphone systems we would strongly recommend a wired system. However, if a wireless system were to be implemented, it would be against our professional advice. In this case, we would want an exclusion to be in place, so that the successful bid could not be unfairly penalised, nor have their contract terminated for unsatisfactory performance, which may be due to the reasons outlined previously.*

**Would the Secretariat accept such an exclusion?**

*Please detail the functionality required on the delegates microphones, i.e., voting, ID cards, interpretation, chairman's monitor, name plates etc.*

A1:

In relation to ‘exclusions’ or any other amendments pertaining to the terms and conditions of Contract or any ‘assumptions’ or ‘constraints’ a bidder may wish to make around their particular bid, bidders are requested to do so as part of their bid submission (as/where relevant) and/or by completing Annex 1 to Appendix 1 Legal Comments table.

The preference is for a wireless delegate microphone system to reduce unsightly cabling on the table and increase space available for delegates use. The reduction of cabling should also eliminate the health and safety risk of someone tripping onsite during a meeting. If a wireless solution is not your professional opinion please include that in the tender submission, explaining why it is not suitable and what you would suggest as an alternative. If cabling is required, please consider the aesthetics of the room (as described in the tender) and include solutions for minimising the impact on the delegate experience.

The basic functionality required is for delegates to use the microphone system to project their views to the entire delegation and to enable the audio to be recorded. A chairman’s monitor should be included. It would be useful to have interpretation and nameplates/ID cards which may be utilised in the future. Based on the requirements in the tender and the pricing document, it is for you to suggest appropriate equipment. If there are additional features that in your professional opinion would enhance the delegate experience, please include an explanation of those in the document.
Q2:
Wireless Antenna Module
Antenna module (receivers) for the wireless delegate microphones vary in size but are typically 240mm across by 180mm high and 60mm deep. They weigh 1.5kg each and typically cover a 30m radius. They are normally wall or ceiling mounted but in this application would need to be free mounted on a stand - ideally in the centre of the room for best coverage. Depending on location, two antennas may be required. Where would these be located as there is no mention in the tender or associated diagrams?

A2:
It is for you to advise the most appropriate solution for the rooms and layouts required in the tender submission. Ideally they will be in discrete locations or on stands that are sympathetic to the nature of the Grade I listed building.

Q3:
AV Racks
A - Equipment left in the proposed AV racks G13 and G12:
Will the Secretariat be purchasing all of the items in these racks?
If the equipment were to be dry hired, why would this be left in the room?
B - There would need to be a table space allocated to the technician for an audio mixer/laptop and other items.
Would the rack sit on a table or would a bespoke item be required to be manufactured that incorporates both?
The size of this rack will depend on which equipment is selected and purchased, further details and dimensions would be required to enable a more accurate costing.
C - When the room needs to be cleared, whose responsibility would it be to move the AV rack, and where would it be stored?

A3:
A - The Secretariat are looking at both hire and purchase options. If hired it would not necessarily stay in the racks, depending on the option provided.

B - It is for you to suggest and recommend suitable equipment and associated rack options. Ideally the rack would be housed in a bespoke casing suitable for the nature of the building so it doesn’t look out of place.
Page 5 of the ITT states “It is suggested that the AV rack is incorporated into a technician operator position and finished in a style that would blend in with the room surroundings.”
Page 6 States “The majority of the AV equipment will be located within the room as it is not possible to remote any equipment due to cabling limitations. A piece of furniture that doubles as an operator position and AV rack would be ideal.”

C - Responsibility for moving the equipment would depend on the options chosen (either hire or purchase). It would probably fall to the Secretariat team or an approved furniture removal company to move when rooms are required to be completely cleared. If the equipment belonged to the appointed supplier, we would advise that it is moved by employees of the supplier to prevent damage occurring. Storage is extremely limited at the Secretariat offices so this would depend on the option chosen. If the equipment is purchased by the Secretariat a storage solution would be found for situations where the rooms had to be completely cleared. If the equipment was owned by the supplier, we would ask them to store it when removed.
**Q4:**
The Consultant
Will "The Production Exchange" or any person or persons associated with them, be excluded from the ITT bid process?
If not, this could be considered unethical as they may be deemed to have gained an unfair competitive advantage.
*Can they provide references for previous successful trouble free wireless delegate microphone installations?*

**A4:**
Indeed, and for the exact reasons you point out, they are excluded from the bidding process.
They were involved in the early stages as a consultant only as mentioned in the ITT. They have made suggestions of microphone systems that can be used, which are included on page 9 and 10 of the ITT; these are suggestions only.

**Q5:**
PTZ Cameras
On page 5 it mentions positioning the PTZ camera, above the screen in G12. On page 8 it mentions mounting it on a shelf on the 84” screen: This would be too low.
The diagrams on pages 6, 7 & 8 show a single 360-degree camera mounted on a free standing tripod.
Only one camera is shown on the diagram but two are requested on the equipment list. Our recommendation is for three PTZ’s: one opposite the chairman, for a close up, as the chairperson and those either side of them, command a large portion of the floor during meetings.
*Please confirm the number and positions of the PTZ cameras.*

**A5:**
The ITT does not specify the location of the shelf on the screen, it is for you to recommend and provide solutions that are possible to meet the requirements. Please include all recommendations on the number and position of PTZ cameras in the tender submission. The free standing cameras in the diagrams are examples for a greater coverage if a wider camera feed is required for a meeting.

**Q6:**
PC Transmitter
The PC transmitter on page 9: *Is this the resident MH PC?*

**A6:**
No, this is a different item, used as the central point for the microphone system rather than the resident PC which is a presentation device. It is listed as part of the Laptop section on page 8 of the ITT.

**Q7:**
Column Speakers
The column speakers in G12: Four are requested in the work book and description. In the photographs on page 11, they are between the pillars. On the diagrams on pages 6, 7 & 8, they are shown as three floor standing.
As Marlborough House is a Grade One Listed Building, placing the speakers between the columns is inadvisable. They would frequently need to be rigged and de-rigged, putting the columns at regular high risk of damage, as they are not marble but painted plaster.
In addition to this, placing them behind the columns is not the optimum acoustic position, as the sound would be shrouded and compromised.

**A7:**
This is a suggested location, it is for you to advise and suggest suitable locations in the tender submission, including reasons behind the chosen location. If the equipment is purchased rather than hired the equipment could remain in-situ the majority of the time, only being removed if the room had to be completely cleared.
Q8: Wireless Content Monitoring

Wireless content monitoring has been trialled by the IT Department. It failed on the second screen in G13 (MCR), resulting in the second screen now being hardwired. If using Wi-Fi, then this is prone to drop outs, resulting in the screen going into standby. Hard wiring is recommended.

A8:
G13 is the Delegates Lounge not the Main Conference Room which is G12. As mentioned in the ITT (page 12) this is a ‘nice to have’ not a ‘must have’. If it is not deemed possible, please explain why in the tender submission. If additional boosters or Wi-Fi equipment would improve this, please provide details in the submission.

Q9: Wireless Microphones

Do the wireless radio microphones requested for Blenheim need to be wireless encrypted 128 bit?

A9:
All wireless equipment should be encrypted to the same level (128 bit).

Q10: Ceiling Microphones (pendant)

There is a listing for four pendant microphones in the AV ITT pricing workshop, but no details of these in the specification requirements.

A Are these still required?
B If so, what is their purpose?
C As this is a Grade One Listed Building, how is this to be achieved?

A10: PLEASE NOTE: THIS WAS INCLUDED IN ERROR. THERE IS NO NEED TO PRICE FOR THIS.

Q11: Audio Inputs and Outputs

Inputs:
1 Delegate Microphone System
2 Skype
3 Video Playback
4 Audio playback
5 Ambient/Floor Mic PZM
6 Lectern Mic 1
7 Lectern Mic 2
9 Return Audio e.g. from G13
10 Radio Mic 1
11 Radio Mic 2
12 Radio Mic 3
13 Radio Mic 4
14 Spare

On several occasions, when used in theatre style seating, there have been up to eight radio mic channels used, so for a digital mixing desk with at least sixteen channels, along with the appropriate groups, pre and post fade Auxs would be the minimum requirement.

A dipole kit will be required for rack mounted radio microphones. This necessitates receiving aerials being utilised, this would need to be accommodated in the provision.

Are the Secretariat aware that they will need an Ofcom Radio Microphone Licence, if these are purchased?

Outputs:
1 Audio Recording
2 PA system
3 Feed to G13
4 Feed for camera crew. (In the case of a press conference, ten or more press feeds may be required, with audio DA.)
6 Feed for Live Streaming
7 Feed into Delegate Mic System Speakers
8 Sound feed to Blenheim (optional)
9 Sound feed to screen 1 monitors G13
10 Sound feed to screen 2 monitors G13
All these channels in and out will need to be individually monitored and adjusted. This is not possible on a switching matrix and will require a sound desk to be installed. This information was not detailed on the ITT.

Please confirm and explain the audio requirements and the flexibility needed.

A11: The Secretariat expects all licences to be included by the hire company - as a fully working system.

The Secretariat require the equipment to be utilised in a flexible manner depending on the specific layout and meeting requirements. It is unlikely that all the above listed items will be required in one meeting or at the same time. It is for you to advise what you feel is possible given the requirements and the limitations in the building. If an item in the ITT is not possible, in your view, please explain why it is not included in your submission.

Q12: Wireless Touch Panel Controller
Who would need to use this additional item and why?

The technician would control the majority of functions, as the PTZ cameras are programmed to be controlled by the delegate microphone control unit, automatically selecting the live microphone on the floor. They could be re-patched for VC call to be controlled manually by an individual.

A12: This would be used by the technician or someone else where required; it may not be used for all meetings. This may be used by a member of Secretariat staff for smaller meetings if a technician is not required - particularly if the equipment is purchased rather than hired.

Q13: Audio Amplifiers
Audio amplifiers with a 100v line for G13 and G12, are requested. This is not suitable in a pro-audio environment. A 100v line, typically, has poor audio quality - something akin to telephone quality, in comparison to professional audio applications. We assume this is an erroneous request.

A13: Yes, this is a typo - should be a high quality amplifier

Q14: 84” Monitor Speakers
It will not be possible to side mount speakers to the existing screens on the 84” monitor in G12.

If there are four audio speakers in the room, why would these be required? A separate self-powered speaker could be supplied if required, but would require audio and mains power connections and a shelf or stand for placement.

A14: This is a suggestion from the consultant, if you feel it is not suitable please provide details of an alternative option. Speakers mounted on the side of the monitor would serve a different purpose to those freestanding in the room.
Page 11 of the ITT states “In addition to the loudspeakers mounted at the marble pillars, loudspeakers would also be mounted on the sides of the trolley-mounted screens. These would primarily be used for presentation audio (laptops, local PC etc.).”

Q15: Comfort Monitor
Please give details of where the comfort monitor will be located.
Please also provide the required screen size of this monitor.
Is a Chairman’s monitor - one that details requests from the floor and the countries/delegates, and the order of requests etc., required? If so, please state the screen size needed.

A15: The comfort monitor should be located at the Chairpersons seat (middle of the table on one side). Ideally the Chairperson should be able to see who has requested to speak and the order in which they made the request. Please advise the size of monitor you would recommend.

Q16: Budget
The budget for the implementation of any new system would vary according to whether the equipment was to be purchased or hired, in part or whole, and would include service charges where appropriate.
What would the Commonwealth Secretariat consider to be a reasonable budget in either circumstance?

A16: The Secretariat has published an invitation to tender. The tender will be assessed based on the most economically advantageous tender (MEAT) criterion which will enable the Secretariat to take account of criteria that reflect qualitative, technical and environmental aspects of the tender submission as well as price when reaching an award decision. The evaluation criteria and methodology has been set out transparently in the invitation to tender document along with descriptions of various options which are required to be completed by bidders in order to submit a compliant bid.

Q17: AV Equipped Rooms
The Main Conference Room (MCR) (G12) is the main space used for Commonwealth meetings at Marlborough House. This room will be used by up to 58 delegates (including a chairperson, Secretariat staff and speakers) seated at the main table along with a number of support staff seated in rows behind.

The adjacent room, Delegates Lounge (DL) (G13) will be used as a standalone room in theatre or boardroom layouts or as an overflow room for G12.

The Blenheim Saloon will be used for informal gatherings using a portable PA system. This room will act in a standalone capacity and will require a PA system as specified in the Bill of Materials/Blenheim tab.

We understand that due to the listed building status there will be limited permanent installation solutions for speakers, displays and etc., is this the rationale for speakers and screens on stands and trolleys? please confirm.
Are there any established low or high level cable routes? please confirm.

A17: The listed status is part of the rational for stands and trolleys, the other is portability as there are instances where all equipment and furniture must be removed from the main rooms for high profile events. The screens mentioned are already owned by the Secretariat and will be utilised alongside the chosen AV solution.
As mentioned on page 4 of the ITT “A number of existing cable routes do exist at low level between the G12 floor boxes and the G12 heating units on the outer edge of the room. These might provide potential cable routes however for the purpose of this document, we have assumed that no additional cabling or power will be installed in or between any of the rooms.” The Secretariat are currently undergoing investigative work on the existing cabling and channels for another project. For the purposes of the AV tender this information was not included as it is not readily available at this time.

Q18: Meeting Requirements
Main Conference Room - G12 Meeting Room
Boardroom
This is the standard room layout with content displayed at a pair of trolley mounted screens located at the ends of the table. Screen content is routed from either a laptop (wired or wireless) on the table or a resident PC located at the technician position. In this layout, audio reinforcement would be provided by the wireless delegate system located at each delegate position on the table top. For those not seated at the table an additional PA system would provide voice reinforcement. Loudspeakers would be discreetly mounted on the outer edges of the room.

Would the above layout remain in situ after an event?
Is there storage onsite for the hardware?
The above mentioned PA system would make sense as a hire option when required. The wired or wireless content connections would remain onsite and wired & installed into a mobile equipment rack.

A18: If purchase was the chosen option, the equipment may well stay in position unless the room layout needed to change. The layout in G12 is predominantly boardroom and the table is only removed in exceptional circumstances. The screens also remain in the room. There is very limited storage on site so equipment would either need to be stored off-site (if belonging to the supplier) or a solution would be found by the Secretariat if required.

In general, an additional PA system is not required for those not at the table, for our meetings only those sat at the table are able to contribute. A couple of wireless microphones may suffice, as already included in the requirements. If there is a particular solution you would recommend, please include all details in the tender submission.

Q19: Video conferencing would be supported using a Skype client (or BlueJeans)\(^1\) installed on a resident PC. Audio for video conferencing would be picked up from the delegate system with a PTZ camera mounted above the screen providing picture content.

Would strongly recommend a dedicated VC codec with SFB (Skype for Business) integration license -Polycom Group series 700 - which would support dual PTZ cameras. This would exist in a dedicated rack along with audio processing and control. It makes more sense for the Commonwealth to invest in the VC setup and for it to remain onsite, than to hire this equipment ADHOC. We propose to provide technician support to attend site, setup the system, commission and then support the event.

A19: Please include details of all recommendations in the tender submission. Skype was just a suggestion for a video conferencing software, any recommendations should ideally also support BlueJeans as mentioned in the ITT (page 5).

\(^1\) Equipment needs to support these types of video conferencing software
Q20:

**Theatre**

In theatre layout the presentations will be run from a lectern position at the front of the room. Presentation content would be routed from a laptop (lectern or at the technician position) or a resident PC at the technician’s position. In this mode, wireless lapel, lectern or table top microphones would be used for audio reinforcement.

For Q&A sessions, handheld wireless microphones would be provided.

Video conferencing would be supported in this layout but in a presentation format with audio and video focused on the lectern position. The camera would be located on a tripod in front of the presenter.

It would make sense for the Commonwealth to invest in the Bosch wireless delegate system and for it to remain onsite. All other microphones & PA could be a hire option when required, and the camera and tripod could remain onsite as a part of the VC system mobile rack.

**Will there be accessible data and power for the rack to patch into?**

A20:

Page 5 of the ITT states “There is some limited cabling and power currently installed within the rooms, this includes a number of data points which route back to the main distribution position. The extent of this cabling has yet to be confirmed but it is likely that these can be used to distribute audio and video content between rooms, particularly between the Main Conference Room (G12) and the Delegates Lounge (G13).”

Please make all recommendations in the tender submission document. Both hire and purchase options will be considered and should be priced.

Q 21:

**Equipment Location**

The majority of the AV equipment will be located within the room as it is not possible to remote any equipment due to cabling limitations. A piece of furniture that doubles as an operator position and AV rack would be ideal. This should be finished in a manner that blends in with the room furnishings, negating the need to remove the rack and any AV connections unless the room needs to be completely cleared.

There will be some items that need to be stored remotely including spare batteries for the wireless delegate system and the storage case for the units when not in use.

Is there a raised floor in the area? please advise. We are assuming there is not. If not, would the Client envisage the cabling being contained in suitable rubber cable matting when required?

Would you please elaborate on “it is not possible to remote any equipment due to cabling limitations”?

A21:

Please assume a raised floor is not in place. As mentioned on page 4 of the tender there may be cabling routes that could be used, however, due to the nature of the building and the unknown element of the current cabling, please assume there is no access to hidden cable runs. Any cabling that is required should be covered or secured in a safe manner without causing damage to the building.

The second point was advice provided by the consultant which is understood to be related to the limitations of available cable runs resulting in racks and other equipment having to be stored in the room itself rather than out of sight.

Q22:

**Delegates Lounge - G13 Meeting Room**

**Boardroom**
This is the standard room layout with content displayed at the end of the table using trolley mounted screens. Additional 55inch screens are available in-house. In this layout, audio reinforcement would be provided by the wireless delegate system located at each delegate position on the table top. Video conferencing would be supported in this layout.

Please can you confirm the make and model of the 55"s screen mentioned above?
Is this screen under warranty?
Is the screen for commercial or domestic use?

A22:
Please find details below:
Make - Samsung
Model - UE55MU6100K
Warranty - 1 year
Domestic use

Q23: Theatre
In a theatre layout, presentations would be conducted from a lectern or top table located at the front of the room. A wireless lectern microphone would be provided along with a laptop connection if required. For Q&A sessions a handheld wireless microphone would be provided. Video conferencing would be supported in this layout.

Would this be an additional VC hardware solution or the same system that would be relocated to this room when required?
We noticed on the pricing document there was no mention of theatre equipment, are we to assume that the specified equipment in the pricing summary (G12, G13 & Blenheim), will be utilised in the Theatre when required

A23:
This would be dependent on the solution but ideally it would be an individual solution for each room to reduce movement of equipment and to enable each room to be used independently.
Equipment required for a theatre style setup should be covered by the requirements for a boardroom setup.

Q24:
Overflow
When required G13 would be configured as an overflow for G12. Audio and video content would be transmitted from the AV system in G12. The additional 55inch screens available in-house can be used in G13 allowing for the larger screens to remain in G12.

Would this requirement solely be for Video and Audio broadcast into the room - would any participants in the overflow area be required to ask questions or been seen on the VC far-end?

A24:
This would be purely for Video and Audio broadcast for Observers or additional delegates unable to be seated in the main room. If in the overflow room they would not be expected to directly participate in the meeting.

Q25:
Equipment Details
Displays
A pair of 84inch LCD screens are currently installed in the MCR one at each end of the main table, these are trolley mounted and will be reused. There is space on the screens to mount peripheral interfaces and also a dedicated shelf for the PTZ camera used for VC calls. When G12 and G13 are combined, the screens in G13 (available in-house) would need to mirror those in G12.
Please can you confirm the make and model of the 84” screen mentioned above?
Is this screen under warranty?
Is the screen for commercial or domestic use?

A25:
Please find details below:
Make  -  Sony
Model  -  KD - 85XF8596
Warranty  -  1 year
Domestic use

Q26:
**Resident PC**
A local PC provided as an alternative presentation device. The machine should be the same one that supports the UC video communications software. This will enable content to sharing from the PC as part of the VC call. To assist presentation from the table top or lectern the following peripherals should be included.

*The resident PC will be provided by the IT team at Marlborough House.*

- Wireless keyboard and mouse
- Wireless presentation clicker

In G13 a resident PC can also be provided although this would have video conferencing installed.

**Why do you plan on utilising the resident PC for video conferencing when two PTZ Cameras are mentioned in the brief for the video communications license?**

A26:
The resident PC will be used to enable the video conferencing to take place, the cameras will be linked to the software for a video feed to the video conference where required. The cameras would not be used solely for video conference but may also be used for relay into G13 when used as an overflow room. If you feel this is not required or not suitable please include in the tender document, explain why and provide alternative solutions.

The Resident PC:
Make = Lenovo
Model= M900

Q27:
Video conferencing would be supported using a Skype client (or BlueJeans)\(^1\) installed on a resident PC. Audio for video conferencing would be picked up from the delegate system with a PTZ camera mounted above the screen providing picture content.

**Why not use a dedicated VC codec with SFB (Skype for Business) integration license - Polycom Group series 700 - which would support dual PTZ cameras? This would exist in a dedicated rack along with audio processing and control. It makes more sense for the Commonwealth to invest in the VC setup and for it to remain onsite, than to hire this equipment AD HOC.**

We propose to provide technician support to attend site, setup the system, commission and then support the event.

A27:
Please include details of all recommendations in the tender submission. Skype was just a suggestion for a videoconference software, any recommendations should ideally also support BlueJeans as mentioned in the ITT (page 5).

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\(^1\) Equipment needs to support these types of video conferencing software
End.