



उत्तराखण्ड शासन

## संस्कृति विभाग, उत्तराखण्ड

### ई-निविदा सूचना

संस्कृति विभाग उत्तराखण्ड द्वारा हरकी पैडी, हरिद्वार में एल0ई0डी0 स्क्रीन, ऑडियो वीडियो सिस्टम स्थापित किये जाने हेतु पंजीकृत इच्छुक निविदादाताओं से ऑनलाईन निविदाएं आमंत्रित की जाती है। सम्बन्धित निविदाताओं के पास डिजिटल हस्ताक्षर सर्टिफिकेट तथा ई-प्रोक्योरमेन्ट पोर्टल <https://uktenders.gov.in> में पंजीकृत होना अनिवार्य है।

निविदा संख्या 1146/सं0नि0उ0/दो-3(A.c.acti)/2019-20, दिनांक 5 अगस्त 2019

सामग्री का विवरण –

- 1 Video Streaming High Resolution LED Screens (Screen Size 18.90Ft \*9.45ft) with Installation
- 2 Content Management Server, Management PC with Software with Installation
- 3 Complete Audio PA System with Installation
- 4 Video System (Camera Setup with Recording and Live Streaming) with Installation

| क्र.सं0 | विवरण   | निर्धारित तिथि   |
|---------|---|--|
| 01      | वेबसाइट <a href="http://www.uktender.gov.in">www.uktender.gov.in</a> पर निविदा प्रकाशित होने की तिथि  | 5 अगस्त, 2019  |
| 02      | निविदा प्रपत्र डाउनलोड/उपलब्ध होने की प्रारंभिक तिथि  | 6 अगस्त, 2019 प्रातः 09.00 बजे   |
| 03      | प्री-बिड कार्यशाला का स्थान, तिथि एवं समय   | संस्कृति निदेशालय, उत्तराखण्ड<br>एम0डी0डी0ए0 कालोनी, चन्दर<br>रोड़, डालनवाला, देहरादून।<br>17 अगस्त, 2019 प्रातः 11.30 बजे |
| 04      | निविदा ऑनलाईन जमा करने की प्रारंभिक तिथि एवं समय  | 17 अगस्त, 2019 03.30 बजे   |
| 05      | निविदा ऑनलाईन जमा करने की अंतिम तिथि एवं समय  | 26 अगस्त, 2019 सांय 05.00 बजे  |
| 06      | तकनीकी तथा वित्तीय बिड को दो पृथक-पृथक लिफाफों में बंद करके एक तीसरे लिफाफे में सील कर कार्यालय में उपलब्ध करवाने की अंतिम तिथि<br>1-निविदा प्रपत्र शुल्क जी0एस0टी0 सहित – रू0 2,596=00 (निदेशक, संस्कृति निदेशालय उत्तराखण्ड, देहरादून के नाम पर देय होगी)<br>2-अर्नेस्ट मनी (ई0एम0डी0)- रू0 3,20,000=00 (निदेशक, संस्कृति निदेशालय उत्तराखण्ड, देहरादून के नाम पर देय होगी) | 27 अगस्त, 2019 2.00 बजे  |
| 07      | तकनीकी बिड खोले जाने की तिथि व समय  | 27 अगस्त, 2019 सांय 03.00 बजे  |
| 08      | वित्तीय बिड खोले जाने की तिथि व समय   | निविदा समिति के निर्णयानुसार   |

निविदा प्रपत्र के डाउनलोड एवं अन्य जानकारी हेतु कृपया ई-प्रोक्योरमेन्ट पोर्टल <https://uktenders.gov.in> देखें तथा अन्य जानकारी हेतु दूरभाष न0 0135-2712595 पर सम्पर्क करें।

निदेशक, संस्कृति निदेशालय उत्तराखण्ड

## **PROJECT BRIEF**

Har Ki Pauri (literally, "Footsteps of the Lord"), one of the most sacred ghat of Haridwar, has a spot called Brahma Kund, the spot where it is believed that Amrit, the elixir of immortality fell. According to the Samudra manthan, Haridwar along with Ujjain, Nashik and Prayag (Allahabad) is one of four sites where drops of Amrit, the elixir of immortality, accidentally spilled over from the pitcher while being carried by the celestial bird Garuda. This is manifested in the Kumbha Mela, which is celebrated every 12 years in Haridwar. During the Haridwar Kumbh Mela, millions of pilgrims, devotees, and tourists congregate in Haridwar to perform ritualistic bathing on the banks of the river Ganges to wash away their sins to attain Moksha. Along with the Kumbh, Ardh Kumbh and Kanwar Mela, Haridwar on a daily basis sees thousands of people come and visit the holy land and witness the aarti at Har Ki Pauri.

### **HARIDWAR- IT INTERVENTIONS**

Being one of the holiest places in India, Haridwar sees a footfall of more than a Lakh people in a year going even higher in the year of Kumbh. Most of the footfall, prefer to visit the prominent places in the city like Mansa Devi temple, Chandi Devi temple along with the most popular Har Ki pauri. Evening aarti at Har Ki Pauri in itself sees people ranging from 3000 to 30,000 per day.

On days with a heavy footfall, it gets difficult and unfulfilled sometimes for a lot of devotees to visit and be a part of different religious and spiritual activities on the Ghats.

Considering the challenges faced by the visitors and local masses in Haridwar to view and participate in the ritual proceedings regularly conducted in the auspicious sacred banks of river Ganges, there is a need to introduce a few IT interventions that can ease the process of being a part of the ritual for a devotee and also help attract more people to the land.

As a value addition for the people and Haridwar to enhance the participation in the rituals for river Ganges, Puja ceremonies can be broadcasted on real time basis at different parts of the city to sensitize the local residents and visitors outside the temple or the Ghats premises about the Puja and ceremonies along with the highlight and focus being on the live broadcast of Aarti from Har Ki pauri. Along with this, a sound system can help create an attraction point through a Light and sound show reflecting the historic importance of Haridwar and the prominent places here.

## **OBJECTIVE**

Every day thousands of devotees visit Haridwar and prefer staying near Har Ki Pauri to witness the magnificent Ganga aarti at the ghat. But due to the platform where the aarti is performed being smaller as compared to the number of people visiting the place it becomes a major problem for devotees to witness the aarti properly.

The idea of having LED screens at different places in and around Har Ki Pauri is to provide a convenient and wonderful experience of the live Puja and Aarti rituals happening at the temple and Har Ki Pauri with extended proximity of participation through technology-based real time approach. This will also help in crowd management at the place in peak hours.

## **ENVISAGED ROADMAP**

To implement the envisaged target, Mela Karayalaya has placed an objective to install and commission multiple cameras, LED Variable Message screens catering to the Audio- visual needs of the intended facilitation for citizens.

Variable Message screens shall be installed at identified strategic public places/ locations. The VMS shall broadcast live presentation of the Puja and Aarti at Ghats which is scheduled twice throughout a day.

Also, the VMS screens will demonstrate the public messages in the interest of publicity of a few Govt. schemes such as Swatchahta Abhiyan, traffic mass education, road safety, women safety, various citizen helplines for Govt. services. The VMS system will also be used to communicate information & guidance about traffic based on real time factors, traffic movement intensity and related regulations, diversions etc. to the citizens/ public on the road. They shall also be used for showing emergency/disaster related messages as and when required.

The VMS screens will be complemented with Public address system that shall be used at identified key intersections, public places, market places or those critical locations as identified Competent Authority to make important announcements for the citizens/public. The system shall also deliver pre-recorded messages to the loud speakers attached to them from CD/DVD Players & Pen drives for public announcements.

The system shall contain an IP based amplifier and use PoE power that could drive the speakers. The system shall also contain the control software that could be used to control/monitor all the components of the system that includes Controller, Calling Station & Keypad, Amplifier (Mixing & Booster).

## **COMMAND & CONTROL CENTRE**

The VMS system will be equipped with robust connectivity at all the locations to capture the feeds and broadcast uninterruptedly. Also, the screens will be controlled and monitored by the Integrated Command & Control Centre being developed in Haridwar. The VMS shall be able to communicate with the Integrated Command and Control Centre System (ICC) using Optical Fibre Leased Line connectivity. Each unit shall be provided with a unique identification number in order to communicate distinctly.

## संलग्न करने हेतु अनिवार्य दस्तावेज

1. निविदादाता फर्म की पिछले 3 वित्तीय वर्षों की सी0ए0 द्वारा प्रमाणित बैलेंस शीट ।
2. निविदादाता फर्म का पिछले 3 वित्तीय वर्षों का सी0ए0 द्वारा सत्यापित वांछित कारोबार का प्रमाण पत्र ।
3. निविदादाता फर्म की पिछले 3 वित्तीय वर्षों की आई0टी0आर0 ।
4. निविदादाता फर्म का पैन कार्ड की छायाप्रति ।
5. निविदादाता फर्म का जी0एस0टी0 पंजीकरण प्रमाण-पत्र ।
6. निविदादाता फर्म द्वारा पूर्व में (वर्ष 2017-18 तथा 2018-19) क्रियान्वित किये गये प्रोजेक्टों पर सम्बन्धित विभाग/संस्था/कार्यालय द्वारा प्रदत्त संतोषजनक प्रमाण-पत्र की प्रति ।

### 7- OEM tender specific authorization letter

8. निविदा के साथ ₹ 3,20,000. ( ₹ तीन लाख बीस हजार) मात्र की एफ0डी0आर0/एन0एस0सी0/सी0डी0आर0 धरोहर धनराशि (Earnest Money) जो कि निदेशक, संस्कृति निदेशालय, उत्तराखण्ड, देहरादून के नाम बन्धक हो, संलग्न करना अनिवार्य है ।
9. निविदा प्रपत्र का मूल्य जी0एस0टी0 सहित ₹ 2,596/- बैंक ड्राफ्ट के माध्यम से जो देहरादून में देय होगा ।
10. Earnest Money तथा निविदा शुल्क पृथक-पृथक सील बंद लिफाफों में निर्धारित तिथि तक पंजीकृत डाक/स्पीड पोस्ट/सीधे जमा करना अनिवार्य है । निर्धारित तिथि के पश्चात् प्राप्ति स्वीकार नहीं की जायेगी ।
11. निविदा स्वीकृति के उपरान्त फर्म को जमानत राशि (Security Money) के रूप में रू0 8,00,000/- ( ₹ आठ लाख) मात्र की एफ0डी0आर0/एन0एस0सी0/सी0डी0आर0 धरोहर धनराशि के रूप में निदेशक, संस्कृति निदेशालय, उत्तराखण्ड, देहरादून के नाम बन्धक हो, जमा करना होगा । उक्त धनराशि अनुबन्ध को संतोषजनक समाप्ति के पश्चात कम से कम दो माह पश्चात वापस कर दी जायेगी ।
12. निविदा स्वीकृति प्रपत्र हस्ताक्षर मोहर के साथ ।
13. फर्म का उत्तराखण्ड में पंजीकरण प्रमाण-पत्र ।

## नियम एवं शर्तें

1. सामग्री को स्थल तक ले जाने तथा निर्दिष्ट स्थान पर स्थापित करने तथा 05 वर्ष के O&M सहित दरें प्रदान की जायेंगी, नियमानुसार GST की दरें पृथक रूप से अंकित करें।
2. उल्लिखित सामग्री निर्दिष्ट Specification का होना अनिवार्य है।
3. Quoted products निर्दिष्ट स्थल पर इंस्टॉलेशन उच्च गुणवत्ता के साथ किया जायेगा।
4. सामग्री का निर्दिष्ट स्थल पर इंस्टॉलेशन उच्च गुणवत्ता के साथ किया जायेगा।
5. एल0ई0डी0 स्क्रीन ऑल वेदर तथा निर्धारित मापदण्डों के आधार पर स्थापित की जायेगी।
6. साउण्ड सिस्टम हेतु स्पीकर ऑल वेदर उच्च तकनीकी के स्थापित किये जायेंगे।
7. सशर्त निविदाएं मान्य नहीं होगी।
8. निविदा में अंकित सामग्री आपूर्ति आदेशों के अनुसार निर्धारित समय में आपूर्ति न करने की दशा में बन्धक धनराशि जब्त करने का अधिकार विभाग को होगा।
9. द्वि-निविदा (तकनीकी तथा वित्तीय) आमंत्रित है। (फर्म की तकनीकी निविदा/शर्तें पूर्ण होने पर ही वित्तीय निविदा खोली जायेगी)
10. निविदादाता द्वारा तकनीकी बिड निर्धारित प्रपत्र में तथा वित्तीय बिड (Bill of Quantity) में प्रस्तुत करनी होगी। तकनीकी बिड के प्रत्येक पृष्ठ पर निविदादाता द्वारा हस्ताक्षर करना अनिवार्य होगा।
11. फर्म का सम्बन्धित कार्य का Black Listed ना होने का नोटरी द्वारा प्रमाणित शपथ पत्र 100/- रू0 के स्टाम्प पेपर पर प्रस्तुत करना अनिवार्य है।
12. निदेशक, संस्कृति निदेशालय उत्तराखण्ड को समस्त निविदाएं बिना कारण बताए निरस्त करने का पूर्ण अधिकार होगा।
13. फाईनेंशियल बिड बी0ओ0क्यू0 में निविदादाता द्वारा दी जायेगी।
14. निविदादाता करने वाली फर्म का पिछले 3 वित्तीय वर्षों का सालाना टर्न ओवर कम से 2 करोड़ रूपये होना आवश्यक है।
15. निविदादाता फर्म को कम से कम 3 समान प्रकार के प्रोजेक्ट को सफलतापूर्वक क्रियान्वित करने का अनुभव हो, जिसमें से कम से कम एक प्रोजेक्ट एक वर्ष पुराना हो।

**नोट-** हमने विभाग द्वारा निर्धारित शर्तों का पूर्ण अध्ययन कर लिया है। विभाग द्वारा मांगी गई सूचनायें हमारी फर्म द्वारा सही-सही दी गई हैं। यदि कोई जानकारी असत्य पायी गई तो फर्म इसके लिये स्वयः उत्तरदायी रहेगी।

(बीना भट्ट)  
निदेशक

निविदादाता के हस्ताक्षर.....  
नाम.....

## संस्कृति विभाग, उत्तराखण्ड

संस्कृति निदेशालय, एम0डी0डी0ए0 कालोनी, चन्दर रोड़, डालनवाला, देहरादून।

ई-मेल: [directorculture@gmail.com](mailto:directorculture@gmail.com), [dir-culture@uk.gov.in](mailto:dir-culture@uk.gov.in) दूरभाष नं0-0135-2712595

### तकनीकी बिड

1. फर्म का नाम-
2. पता-
3. दूरभाष-
4. फर्म के मालिक/साझेदारों का नाम-
5. व्यापार कर/सेवाकर/जी0एस0टी0 के अन्तर्गत पंजीकरण का प्रमाण-पत्र (पंजीकरण प्रमाण-पत्र की प्रति संलग्न करें)
6. फर्म के आयकर की प्रति (पैन नं0)-
7. विगत तीन वर्ष (2016-17, 2017-18 एवं 2018-19) के आयकर रिटर्न की प्रति-
8. विगत तीन वर्ष (2016-17, 2017-18 एवं 2018-19) का क्रियान्वित किये गये प्रोजेक्टों पर सम्बन्धित विभाग/संस्था/कार्यालय द्वारा प्रदत्त संतोषजनक प्रमाण-पत्र की प्रति।
9. धरोहर राशि का विवरण-  
एफ0डी0आर0/डी0डी0नं0 दिनांक-  
बैंक का नाम-
10. विगत 03 वर्ष (2016-17, 2017-18 तथा 2018-19) का आय-व्यय विवरण (सी0ए0 द्वारा प्रमाणित अंकेक्षित लेखों की प्रति संलग्न करें)।
11. फर्म का विगत 03 वर्षों (2016-17, 2017-18 तथा 2018-19) का वार्षिक टर्नओवर न्यूनतम रू0 2.00 करोड़ प्रति वर्ष।
12. राजकीय विभाग/संस्थान से विधिक विवाद न होने/किसी सरकारी/अर्द्धसरकारी संस्थान द्वारा काली सूची में न डाले जाने का नोटरी द्वारा प्रमाणित शपथ पत्र।
13. उत्तराखण्ड के 01 राजपत्रित अधिकारी द्वारा प्रदत्त नवीनतम चरित्र प्रमाण-पत्र।
14. अन्य विवरण (यदि कोई हो)।
15. संलग्नों का विवरण।

मैं/हम लिखित रूप से अपनी सहमति देता/देते/हूँ/हैं कि निविद प्रपत्र उल्लिखित सभी नियम शर्तें मुझे/हमें मान्य हैं तथा वित्तीय निविदा (बी0ओ0क्यू) में अंकित की गई दरों पर सामग्री आपूर्ति के लिये मैं/हम तैयार हूँ/हैं यदि मुझे आपूर्ति आदेश निर्गत किया जाता है तो मैं/हम रूपये 100.00 के गैर अदालती स्टाम्प पेपर पर औपचारिक अनुबन्ध के लिये तैयार हूँ/हैं।

निविदाता के हस्ताक्षर व मुहर  
निविदादाता का नाम व पूरा पता  
दूरभाष नं0-

स्थान:  
दिनांक:

## Technical Specifications

### Item 1: Outdoor LED Display-Pixel Pitch 10mm

| <b>Parameter</b>   | <b>Specifications</b>  |
|--|--|
| Display Size (WXH)   | Minimum 18.90ft X 9.45ft or bigger   |
| Pixel Pitch  | 10 mm or better (Lower pitch is regarded as better)  |
| LED Configuration  | RGB 3 in 1 SMD   |
| Pixel Density  | Minimum 10,000 pixels per sqm or better  |
| Half Gain Horizontal/Vertical Viewing Angle                                  | H 140 deg/V90 deg or better  |
| Refresh Rate   | >960 Hz or better  |
| Temp Range   | -20 to +50 Degrees C or better   |
| Gray Scale Processing  | 12 Bit or better   |
| Brightness (Calibrated)  | 5000cd/m <sup>2</sup> or better  |
| Maximum Power Consumption  | 850w/sqm or lower  |
| Power Input  | 100~240VAC   |
| Individual Title/Cabinet Dimensions  | 960 mm(W) X 960 mm (H) X 143 mm (D)  |
| Contrast Ratio   | 3500:1 or better   |
| Access For Maintenance   | Front or Rear  |
| IP Level   | Front IP65/Rear IP54 OR higher   |
| Unit Case Material   | Shall be suitable with adequate safety factors and as per the latest industry standards  |
| International Safety Certifications (Mandatory to submit along with the bid) | CE certification , UL, FCC Certification, ROHS, Quality Management System 9001:2015  |
| Auto Brightness Sensor   | Auto Brightness Sensor to be installed along with the screen to monitor the ambient brightness and ensure automatic optimum brightness levels during the day and night time. |
| Compulsary Requirement   | LED Tiles, LED Controller and Media Player should be from same OEM to ensure compatibility between components and smooth after service support from single OEM               |
| Rack Frame Power Distribution Unit   | to be supplied with Led screen   |

### Item 2: LED Controller

| <b>Parameter</b>      | <b>Specifications</b>  |
|-----------------------|--|
| Control Port          | RS232  |
| Signal Input          | DVI with resolution capability of 1920 X 1200 or better and HDMI,VGA |
| Signal Output         | RJ45 or better (CAT-6A for minimal or no crosstalk preferred)        |
| Maximum Load Capacity | 2.3 Million Pixels   |
| Input Voltage         | 100~240VAC   |
| Operating Temperature | 5~40 Deg C   |

### **Item 3: Media Player**

| <b>Parameter</b>                            | <b>Specifications</b>                                  |
|---|--|
| Media Player with built in Playout software | Of reputed manufactures                                |
| Processor                                   | Intel/Other High End                                   |
| OS  | Linux / Android/ Windows                               |
| Internal drive                              | Solid State Drive 60 GB or More                        |
| Output                                      | HDMI/Display Port for Graphics                         |
| Operating System Video                      | At least should support MPEG-4,WMV,Quicktime or better |
| Audio                                       | MP3, WAV   |
| Image                                       | JPEG, PNG,BMP,GIF                                      |
| Text  | Multiple fonts, speeds, colors, animations             |
| Internet                                    | HTML, XML Files, RSS newsfeeds or better               |
| Others Video Zones                          | 1 or more  |
| Network                                     | Ethernet 1000/100/10(RJ45) and WiFi                    |

### **Item 4: Mechanical Structure For Mounting of LED Walls**

| <b>Parameter</b>   | <b>Specifications</b>   |
|--------------------|---|
| Mounting Structure | LED wall should be mounted on bipole. Structure should be earthed properly (Earthing resistance: 02 ohm) and provided with lightning arrestor as well which should be properly shielded against any damage. |
| Material           | Should be made from mild steel and painted black along with antirust coating.   |

### **Item 5: Outdoor Cabinet Air Conditioner**

| <b>Parameter</b> | <b>Specifications</b> |
|------------------|-----------------------|
|------------------|-----------------------|

|                           |  |
|---------------------------|--|
| Power Supply              | 230VAC $\pm$ 15% 50Hz/60Hz   |
| Working Temperature Range | -40 to + 55 deg C  |
| Max Noise Level           | 60dB(A)  |
| IP Grade                  | IP55   |
| Weight                    | <16 kg   |
| Refrigerant               | R134a for harsh conditions   |
| Dimensions                | 550 x 320 x 175 mm (H x WxD)   |
| CE & ROHS Compliant       | Yes  |
| Surface treatment         | Outdoor type power coating   |
| Cooling Capacity          | 500W@L35/L35   |
| Power Consumption         | 210W@L35/L35   |
| Power Supply              | 230 $\pm$ 15%AV 50/60 Hz   |
| Internal Airflow          | 120 m <sup>3</sup> /h  |
| Maximum Noise Level       | 60dB(A)  |
| Display Panel             | Should be provided with a display panel to show parameters like cabinet temperature, indications for- cooling, running of external fans, flashing on alarm |
| Anti-theft design         | The mounting of the AC should have an anti-theft design  |
| Communication from AC     | AC should be able to send diagnostic communication to remote location over IP  |

### **Item 6: Desktop PC**

| <b>Parameter</b>            | <b>Specifications</b>                           |
|-----------------------------|---|
| Operating System            | WIN10 Professional                              |
| HDD                         | 1 TB or higher                                  |
| RAM                         | 8GB or higher                                   |
| Processor                   | i5 8 <sup>th</sup> Gen / i7 8 <sup>th</sup> gen |
| Monitor (With DVI/HDMI I/P) | 22"   |
| Display Output              | DVI/HDMI/DP                                     |
| Display Memory/Graphic Card | 1GB or higher                                   |
| Ethernet/LAN + Wifi         | 10/100/1000 Mbps                                |

### **Item 7: Communication Interface Device**

| <b>Parameter</b> | <b>Specifications</b> |
|------------------|-----------------------|
|------------------|-----------------------|

|  |   |
|--|---|
| This device shall be used to communicate with serial port devices like led controller for brightness control, ON/OFF |   |
| <b>Ethernet Interface</b>  |   |
| Number of Ports  | One 8 pin RJ45  |
| Speed  | 10/100/1000 Mbps, auto MDI/MDIX   |
| <b>Serial Interface</b>  |   |
| Number of Ports  | One   |
| Serial Standards   | RS-232 on DB 9 connector  |
| <b>Serial Communication Parameters</b>   |   |
| Data Bits  | 5,6,7,8   |
| Stop Bits  | 1,1.5,2   |
| Parity   | None, Even,Odd,Space,Mark   |
| Flow Control   | RTS/CTS and DTR/DSR (RS-232 only), XON/XOFF                             |
| Baudrate   | 110 bps to 230.4 kbps   |
| <b>Serial Signals</b>  |   |
| RS-232   | TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND                                  |
| <b>Software</b>  |   |
| Network Protocols  | ICMP, IPv4,TCP, UDP, DHCP, BOOTP, Telnet, DNS, SNMP V1, ARP, HTTP, SMTP |
| Configuration Options  | Web Console, Serial Console, Telnet Console, Windows Utility            |
| <b>Physical Characteristics</b>  |   |
| Housing  | Metal   |
| Weight   | 340 g or less   |
| Dimensions   | With ears: 75.2 x 80 x 22mm   |
| <b>Environmental</b>   |   |
| Operating Temperature  | 0° to 55° C   |
| Ambient Relative Humidity  | 5 to 95%(non-condensing)  |
| <b>Power Requirements</b>  |   |
| Input Voltage  | 12 to 48 VDC  |
| Input Current  | 128.7mA@12VDC   |
| <b>Certifications</b>  |   |
| Safety   | UL 60950-1  |
| EMC  | EN 55022/24   |

### **Item 8: Network Switch**

|   |
|---|
| Cross Reference to Product Catalogue    |
| Minimum 24 ports of 10/100/1000 base-T  |
| And 2 SFP combo uplink ports.           |
| Switch Should have minimum 8 PoE Ports. |

|  |
|--|
| Rack mountable and should support stacking of minimum 4 switches with 40Gbps of dedicated stacking bandwidth |
| 40 Gbps or higher Backplane capacity.  |
| Should support Non-blocking hardware architecture  |
| All interfaces should provide wire speed forwarding for both Fiber and copper modules                        |
| Support for at least 1000 VLANs & 16k MAC address  |
| It should support IGMP snooping v1 & v2  |
| It should have static IP routing from day 1  |
| Switch should support 8 hardware queues per port   |
| Switch should support LLDP and LLDP-MED capabilities   |
| Should support Dynamic Host Configuration Protocol (DHCP) snooping, dynamic ARP inspection (DAI)             |
| Should support Secure Shell (SSH) Protocol and Simple Network Management Protocol Version 3 (SNMPv3).        |
| Switch needs to have console port for administration & management  |
| Management using CLI, GUI using Web interface should be supported  |
| FTP/TFTP for upgrading the operating System  |
| IEEE 802.1x support  |
| IEEE 802.1D Spanning-Tree Protocol   |
| IEEE 802.1p class-of-service (CoS) prioritization  |
| Information Technology Development Agency (ITDA) 106   |
| IEEE 802.1Q VLAN   |
| IEEE 802.3 10BASE-T specification  |
| IEEE 802.3u 100BASE-TX specification   |
| Switch should be able to support management via CLI, Web interface   |
| SNMP v1,v2,v3  |
| Switch should be manageable through both IPv4 & IPv6.  |
| The switch should support zero touch provisioning (ZTP) feature allows a DHCP server to push configuration   |
| Proposed Solution should have minimum 7 years EOS/EOL from the date of UAT                                   |
| 5 years OEM comprehensive Onsite Warranty and support for both hardware and software                         |

### **Item 9: Router**

|   |   |
|---|---|
| 1 | Architecture & Performance  |
| 2 | The router should be modular  |
| 3 | Router should have redundant power supplies.  |
| 4 | The Router should have WAN performance of minimum 500 Mbps with Services and Scalable up to 1 Gbps from Day 1 |

|    |  |
|----|--|
| 5  | Should have minimum 4 Gb of DRAM and 4Gb of Flash , should support expandability of DRAM to 8 Gb   |
| 6  | The router should have following wire speed interfaces   |
| 7  | Information Technology Development Agency (ITDA) 100   |
| 8  | 2-1000BASE SFP Ports,  |
| 9  | Minimum 4-10/100/1000BASE-T RJ-45 Ports,   |
| 10 | 4-Serial / E1 Ports populated from day 1 with cables. For V.35 connectivity in E1 should provide appropriate convertor, Scalable to 8 Serial/E1.   |
| 11 | Router Should Support at least 1 10G port  |
| 12 | High Availability Features   |
| 13 | Should have 802.1ag, Y.1731, BFD for IPV4 and IPV6, VRRP   |
| 14 | Router should support adaptive Routing Adjustment by doing routing path selection based on criteria like packet loss, delay , jitter,RT and Traffic load to intelligently control the traffic to maximize the Quality of user Experience |
| 15 | Feature to be supported  |
| 16 | Dynamic Host Configuration Protocol (DHCP)   |
| 17 | IP Multicast, PIM SM, PIM SSM, IGMP, MLD, RP, Next generation Multicast using MPLS LSP.  |
| 18 | Intermediate System-to-Intermediate System (IS-IS)   |
| 19 | Label Distribution Protocol (LDP)  |
| 20 | Multi-protocol Label Switching (MPLS) , MPLS FRR   |
| 21 | L2 VPN, L3 VPN, VPLS   |
| 22 | IPv4 Features  |
| 23 | Support for RIP Version 2, OSPF, ISIS, BGP   |
| 24 | Support for BGP confederations / Route Reflectors  |
| 25 | Integrated routing and bridging support  |
| 26 | Should support Bridge domain and virtual switch or VRF instances or Equivalent   |
| 27 | Security features  |
| 28 | Policing/Rate-limiting of traffic to CPU   |
| 29 | Router should support minimum 1000 IPsec VPN Tunnel  |
| 30 | The router shall support dynamically established MP2MP IPsec Based VPN Tunnels matching traffic conditions.  |
| 31 | IPv6 Features  |
| 32 | Should support IPv6 ping   |
| 33 | Should support IPv6 trace route  |
| 34 | Should support Stateless Auto configuration  |
| 35 | Should support RIPng, OSPFv3, VRRPv6, MLD  |
| 36 | Should support IPv6 L3 forwarding  |
| 37 | Should support PIM for Ipv6 multicast  |
| 38 | Should support IPv6 ACL  |
| 39 | Should support IPv6 traffic over MPLS LSPs   |

|    |   |
|----|---|
| 40 | IP/MPLS features  |
| 41 | Route redistribution and Route filtering  |
| 42 | MPLS features- LDP, L2VPN,  |
| 43 | Traffic engineering with RSVP-TE,   |
| 44 | Fast reroute Link Node and path protection  |
| 45 | Information Technology Development Agency (ITDA) 101  |
| 46 | Policy Based Routing (PBR)  |
| 47 | Support MPLS (LDP,L2VPN)and traffic engineering with RSVP-TE  |
| 48 | QoS Classifications   |
| 49 | 802.1Q  |
| 50 | Egress policy   |
| 51 | Strict priority queuing (LLQ) – egress  |
| 52 | WRED (egress)   |
| 53 | Trust 802.1p/DSCP (ingress)   |
| 54 | Per port and per queue shaping  |
| 55 | 8 hardware queues per port  |
| 56 | Performance Numbers   |
| 57 | Minimum 20K IPv4 and minimum 20K IPv6 routes with minimum 6 K Multicast routes  |
| 58 | OAM & Monitoring Features   |
| 59 | 802.3ah (Ethernet transport OAM -UDLD equivalent), 802.1ag, RMON  |
| 60 | Network Management  |
| 61 | SNMP: Support for Minimum SNMP version 2 & upgradable to version 3 shall be provided.                                 |
| 62 | Console or Out-of –band Management: The Router shall have console management access                                   |
| 63 | The Router shall support Network Time Protocol (NTP) as per RFC 1305 or SNTP (simple NTP) as per as per RFC 2030      |
| 64 | Certification   |
| 65 | The router should be EAL 3/NDPP certified under Common Criteria.  |
| 66 | The Router should be IPv6 complaint from Day 1  |
| 67 | The Router should have ZTP capabilities   |
| 68 | Router in future should be able to migrate to software defined WAN by adding the Controller in the central location . |
| 69 | Proposed Solution should have minimum 7 years EOS/EOL from the date of UAT  |
| 70 | 5 years OEM comprehensive Onsite Warranty and support for both hardware and software                                  |

### **Item 10: Speakers Out door all weather**

| <b>Parameter</b>           | <b>Specifications</b>                                    |
|----------------------------|--|
| Effective frequency range  | 80-18 khz or better                                      |
| Rated Noise power/ voltage | 200 watts or better                                      |
| Broadband sensitivity      | 91 dB SPL or better                                      |
| Coverage angle (-6 dB)     | 90 degree (Horrrizontal) X 60 degree (Vertical)          |
| Maximum peak SPL           | 121 dB or better   |
| Rated impedance            | 8 ohms   |
| Transformer taps 100 V     | 80, 40, 20 watts and 8 ohm bypass or better              |
| HF Transducer              | 2” voice-coil compression driver or better               |
| LF Transducer              | 8-10” low frequency driver                               |
| Enclosure material         | Exterior grade plywood with weather resistant coating    |
| Grille material            | Perforated stainless steel grill with Powder Coat finish |
| Ingress protection         | IP-55 or better  |

### **Item 11: Digital Power amplifier**

| <b>Parameter</b>          | <b>Specifications</b>   |
|---------------------------|---|
| Channel                   | Four channel  |
| Rated Power Output        | 2 x 1000W @ 4Ω<br>2 x 1000W @ 70/100V                                       |
| Voltage Gain              | 36 dB or better   |
| Signal to Noise Ratio     | >102 dBA  |
| Total Harmonic Distortion | <0.4%   |
| Damping Factor            | >1000   |
| Frequency Response        | 20Hz to 20kHz   |
| Crosstalk                 | >65dB or better   |
| Input Impedance           | >100kΩ balanced,  |
| Display                   | Front-panel LCD screen  |
| Built-in Protection       | Input Parametric EQ, Crossover, Output Parametric EQ, Output Delay, Limiter |
| Digital Signal Processing | 48kHz, 24-bit floating point  |
| Cooling                   | Continuously variable speed forced air, front-toback airflow                |

### **Item 12: Mixing Console**

| <b>Parameter</b> | <b>Specifications</b>                 |
|------------------|---------------------------------------|
| Inputs           | 2 mono INPUT + 2 stereo INPUT or more |

|  |   |
|--|---|
| Outputs  | 1 x Main Mix, 1 x FX send, 1 x control room |
| FX Send  | 1 FX send                                   |
| EQ   | 3band/2band EQ                              |
| Internal Effects                                       | 16 Send Effects                             |
| Presets  | 99 preset                                   |
| Frequency Response                                     | 10 Hz - 55 kHz                              |
| Gain Range   | 0 dB to 50 dB                               |
| Ethernet port  | 10/100/1000 Mbps                            |
| May be Capable of live drone output feed through drone |   |

### **Item No. 13. Microphone**

| <b>Parameter</b>                                  | <b>Specifications</b>                                    |
|---|--|
| Type  | Uni-directional Condenser, Gooseneck, Cardioid or better |
| Light indication                                  | Green LED, indicating microphone active                  |
| Frequency response                                | 100 Hz to 16 kHz   |
| Input noise level                                 | 28 dB  |
| Sensitivity                                       | 0.7 mV   |
| Maximum input sound level                         | 110 dB SPL   |
| Distortion  | <0.6%  |
| Output impedance                                  | 200 ohm  |
| Stem length with mic                              | 390 mm   |
| Capable of integrating caller mic & wireless mic. |  |

### **Item No. 14. PTZ Camera**

| <b>Parameter</b>             | <b>Specifications</b>   |
|------------------------------|---|
| <b>Camera</b>                |   |
| Image Sensor                 | 1/2.8 Exmor CMOS or better  |
| Image Sensor                 | Approx. 2.1 Megapixels or better  |
| Signal System                | 1080/59.94p, 50p, 29.97p, 25p   |
| Minimum Illumination (50IRE) | 1.4 lx (50IRE, F1.6, 1/30s, 43dB, 30fps)  |
| S/N Ratio                    | 50 dB   |
| Shutter Speed                | 1/1 to 1/10000 sec (59.94 Hz system)  |
| Control                      | Exposure Control, Exposure Compensation, Bright, Slow Shutter<br>White Balance. |
| Optical Zoom                 | 30x or better   |

|                                  |   |
|----------------------------------|---|
| Digital Zoom                     | 12x or better   |
| Focusing System                  | Auto/Manual   |
| Horizontal Viewing Angle         | 65 degree(Wide)   |
| Minimum Object Distance          | 10 mm(Wide)~1200 mm(Tele)   |
| Pan/Tilt AnglePan                | ±170° Tilt: +90°/-30°   |
| Pan/Tilt Speed (Max.)            | 60 degrees/sec  |
| Preset Position                  | 256   |
| <b>Network</b>                   |   |
| IP Video resolution              | 1920 x 1080, 1280 x 720, 960 x 540, 720 x 480   |
| Compression Format               | H.264 (High Profile)  |
| Maximum Frame Rate               | H.264:60fps   |
| Multi Streaming Capability       | 3 sites   |
| Maximum Number of Clients        | 5   |
| Protocols                        | IPv4, IPv6, TCP, UDP, ARP, ICMP, IGMP, HTTP, DHCP, DNS, RTP/RTCP, RTSP, VISCA over IP |
| Camera Features                  | Auto ICR, Wide-D, Image Stabilization, Image Flip, Auto Power Off, Night Power Off    |
| <b>Interface</b>                 |   |
| Visibility should be day & Night |   |
| HD Video Output                  | 3G-SDI, HDMI  |
| Camera Control Interface         | RS-422, RJ-45, VISCA over IP, RJ-45   |

### **Item 15: Joystick controller**

| <b>Parameter</b>           | <b>Specifications</b>  |
|----------------------------|--|
| Control input/output       | VISCA RS-232C OUT Connector, VISCA RS-422 connector  |
| Maximum IP Connections     | 112 or better  |
| Maximum Serial Connections | 7 or better  |
| Control Protocol           | VISCA over IP/VISCA RS-422/VISCA RS-232C switchable  |
| Features                   | Toggle backlight compensation on/off, R gain and B gain adjustment, Iris value adjustment, Gain value adjustment, Shutter speed adjustment |

### **Item 16: Multi Camera Mixer**

| <b>Parameter</b>   | <b>Specifications</b>  |
|--------------------|--|
| Video format       | 1080/59.94i Hz (60i)   |
| Streaming Protocol | AVC/RTMP/RTSP/RTP (Ustream)  |
| Recording          | AVCHD format by SD Card (128 gb or higher and capable of adding external storage device) or better   |
| Max rate           | 50 Mbps  |
| Video Inputs       | 4 x SDI, 2 x HDMI, 2 x Video in, 1 x title   |
| Video Outputs      | 1 x HD-SDI, 2 x HDMI (PGM & multi-view), 1 x video out   |
| Key Type           | Luminance Key / Chroma key   |
| Audio Inputs       | 1 x Analog Stereo, 4 x Stereo Embedded Audio inputs  |
| Audio Outputs      | 1 x PGM (Stereo)   |
| Sampling           | 48KHz  |
| Analog input       | XLR/TRS Combo Type   |
| Control Port       | 2 x RJ-45, 1 x USB2.0 or better, 1 x D-Sub 9-pin,  |
| Display            | LCD Touch screen   |
| Features           | Cut, Mix and Wipe effects, Chroma key, Picture in Picture, Insert and overlay titles, Overlay Logo, Manual transition, Stream content live over the internet, PC, Mac and Tablet integration |

### **Item 17: 32 “ Display**

| <b>Parameter</b>                               | <b>Specifications</b>                          |
|--|--|
| Viewable Size                                  | 32" Diagonal                                   |
| Aspect Ratio                                   | 16:09  |
| Backlight Scanning                             | 100Hz  |
| Viewing Angle (typ)                            | 178°   |
| Horizontal and Vertical Response Time (typ)    | 8 ms (GTG)                                     |
| Input Ports                                    | 1 x Video, 2 x HDMI, 2 x USB input, 1 x VGA in |
| Built -in Speakers Full range                  | 20W (10W+10W)                                  |
| VESA Mount                                     | 100 X 100 mm                                   |
| Safety Regulations                             | IS 13252:2010                                  |
| Rated Power Consumption                        | 50W  |
| Low latency high quality video over IP capable |  |

### **Item 18: Scope for installation**

- Complete System must be ROHS certified.
- All connectivity between devices must be low latency and better performance.
- All products should be confirming with latest ISO standards.
- System should be user friendly & should be Interperable with each other.
- Complete Supply, Installation, Configuration, Testing and Commissioning of all the delivered equipment with necessary cables and accessories.