



# REQUEST FOR PROPOSAL

## *Storage Expansion for NEWS Network*

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# **INTRODUCTION**

## **1.1 Purpose and Scope**

Ministry of Information invites bidders to submit their best offers for supplying and installing an additional storage hardware and software to expand the current storage system, currently used in studio 300. The expansion offer must conform to the current setup and must be as compatible as possible. Also, Bidders are to provide and install disk drives for the existing Grass Valley storage that is used in the news other workflow.

## **1.2 Technical Specifications & Drawings**

- Technical Specifications shall be considered as an integral part of the Contract
- All copies of the Technical Specifications, together with system drawings and its other annexes, remain the-property of the Purchaser and must be returned to the Purchaser if requested.

## **1.3 Responsibility of Correct Design**

- Any changes subsequent to the approved original design as submitted in the proposal shall be forwarded to the purchaser in writing for approval before incorporation and or installation. The purchaser will not recognize any verbal instruction in contradiction to or altering the contract Document.

## **1.4 Installation and Tuning**

- This is a turnkey project. Any item/work not mentioned in the tender document or BOQ but indispensable for the proper Installation/ Implementation/Performance of this project must be added to the BOQ priced and described.
- The bidder shall also have the responsibility to supply and install the equipment necessary to meet the requirements as well as to provide all labour and materials, whether or not described in full, necessary to reproduce complete and fully operational systems, in accordance with the intent of this document. The bidder shall ensure being aware of the operational requirements under which the systems and associated facilities are to be installed and operated. The contractor shall install the system, in a way so that in the events of failure it will be possible for a technician to locate and certify easily the faulty equipment. To assist in this respect, the bidder shall ensure that enough connector access points and switching are available to enable faulty equipment to be located.
- The contractor shall ensure that free and fixed connections and all controls of the installation are properly and permanently labelled in a clear and unambiguous way.

- The contractor shall arrange the grounding for equipment within the systems/ installation so that hum resulting from earth loops is eliminated. Whatsoever the arrangement used, he must not compromise the grounding procedure necessary to comply with electrical safety requirements. From experience, inside Production Building of MOI, there is a good and stable grounding system, but contractor should check it and approved this.

## **1.5 Warranty**

Without dissent to warranty clauses specified elsewhere in Contract Documents, the following warranty shall equally be provided:

The Supplier shall warrant for the period and from the date specified in Conditions of Contract, all apparatus and all components, exclusive of lamps which shall be subject to the usual manufacturer's warranty, to be free from defects in material, workmanship, design, or other features. Any component or apparatus replaced or repaired by the Supplier under the warranty shall be delivered free of charge to the site. The Purchaser will undertake to install small replacement components but in the case of components involving modifications to existing equipment, the Supplier shall undertake to do this at his own expense and with his own personnel. If the same component or part fails more than twice during the warranty period, the failure shall be deemed to be due to design error. In this event, the Supplier shall take immediate action to make any necessary modifications to correct the defect by design changes. Warranty on replacement components shall be the same as for the original components and shall commence from the date of installation of the replacement component. Furthermore, The Contractor shall provide a warranty period which is set to be 1 year from the date of handling the site, that is after integrating, testing and accepting the system. This warranty must cover parts and labor, During this period extra labor and parts must be free of charge. Spare modules and parts are free of charge during the warranty period (1 year long after fully testing and accepting the project). On the Warranty period the contractor has to maintain the system working well, technical support for the system and offer periodic check for all components of the system , providing MOI engineers an official letter (monthly report) about the current status of the system and any upgrades needed (free of charge) during this period.

## **SYSTEM REQUIREMENT**

### **2.1 Quality**

- Where the quality of Work or Goods is not specified elsewhere in the Technical Specifications, it is to be carried out in the best workmanship with materials of the best quality, approved for their respective uses, and is to be to the satisfaction of the Purchaser.
- Equipment and material to be supplied shall be suitable for heavy duty professional use under normal (rated) operating conditions and with proper maintenance.
- Components and material which are used during the manufacturing process of the equipment shall be in accordance with the international standards and capable of continuous operation. Components of the equipment shall operate far from their critical limits within a sufficient margin of security.
- The mechanical parts and the casing of the equipment must be durable and in accordance with related standards.

## 2.2 Applicable Standards

- In addition to any standards specified in Detailed Specifications, the equipment and material shall be in conformity with one or more of the international broadcast standards / recommendations of AES, ITU, and EBU.
- Unless otherwise indicated in detailed specifications, all test and measurements shall be made according to standards and/or recommendations issued by the organizations stated above.
- All electrically operated equipment and materials shall comply as minimum to the following:
  - With latest ME&W Regulation and Standards.
  - With latest relevant recommendations of the International Electro- technical Commission (IEC) if available.
  - If (IEC) is not available, with the latest relevant British Standard specification (BSS).
- Electricity Supply:  
The equipment required shall be suitable in all respect to the power supply system, characteristics of which are:
 

- System Voltage	415 Volts + / - 6%
- Frequency	50 Hz. $\pm$ 4Hz
- Neutral Points	Solidly earthed
- The available AC Line Voltage in Kuwait is 240 V $\pm$ 10 %, 50Hz $\pm$ 4Hz, while video standard used is PAL/BG.	

## 2.3 Construction of Equipment

- The design shall be suitable for easy dismantling and access to individual parts for measurement and maintenance purposes. Equipment shall be modular in construction to enable rapid interchange of units. Insertion or removal of a module with power applied to the receptacle shall not cause damage to the module, receptacle or to associated equipment, nor shall it cause any random operation to occur.
- Unless otherwise specified in the Detailed Specifications, the following shall be provided:  
If any equipment supplied by the manufacturer is of rack-mount type, the equipment mounting shall be "*19 inches panels*". The Supplier shall indicate in his proposal the number of racks required for the system. The purchaser may decide to provide the racks if applicable.

## 2.4 Expansion of Facilities

- The System shall be designed in such a way that expansion of facilities to its design maximum can be readily achieved. Upgrades must be supplied free of charge in next year from Project acceptance date.
- Where expansion affects the size of individual equipment mounting frames, the full size frame shall be supplied, frame wired, but not equipped with modules. In this context, a module shall mean a plug-in unit such as a cross- point card, amplifier, convertor, etc.
- Where expansion means the addition of a separate frame, this shall not be supplied, but provision in the rack layout shall be made for its later addition (like for adding more storage in the future).
- Equipment layout drawings shall indicate clearly the space reserved for expansion capability. The method whereby expansion can be achieved shall be clearly indicated by the Supplier. All expansion layouts must be approved by the Purchaser before manufacture and installation of the equipment.

## 2.5 Layouts

- The overall layout shall present a uniform and neat appearance and the finish shall be durable. All layouts must be approved by the Purchaser before manufacturing and installation of the equipment.
- The system shall be laid out and built in such a way as to permit easy access to the different components for maintenance purposes.
- Equipment layout drawings shall indicate clearly the space reserved for expansion capability.

## 2.6 Operating Environment

- Unless otherwise noted, the equipment shall maintain specifications over a

temperature range from 10° C to 40° C and over a humidity range from 10% to 80% non-condensing while operating at an altitude in the range 0m to 1000 m above sea level. The equipment shall be suitable for operation with mains power input of 240V, at 50Hz. The system shall continue to perform and meet specifications in the range given above. In addition, surges up to +30 volts or -50 volts, of a duration of up to 0.5 seconds, shall not cause de-selection, random operation, or command generation.

## **2.7 Operating Controls**

- In the event of complete power failure, previous settings, assignments or selections shall be re-established on restoration of power. In this case all required UPS or other safety units must be included in offer even if not clearly specified.

## **2.8 Labeling and Finishes**

- The Supplier shall label or designate all controls and indicators as to function or meaning by agreement with the Purchaser. This designation shall be uniform as to type of characters used and of neat appearance throughout the system. The size or characters used shall be as large as possible consistent with neatness and the size of the unit. Technical and other outlets shall be of different color for easy distinguishing.
- All equipment shall be clearly labeled with an identification relating to the designation of that component on the relevant functional or schematic diagrams.
- Where items are interchangeable, such as distribution amplifiers, the designation shall be affixed to the mounting position in the relevant frame, as well as on the unit itself.
- Finishes on racks, equipment, control panels, etc., shall be submitted to the Purchaser for approval in relation to color, texture and gloss. Generally, preferred colors will be subdued, of a smooth finish, and non-glossy.
- All cables at source & destinations will be marked with proper labeling equipment or markers, sleeved with color-coded sleeves in par with the schematic diagrams provided.

## **2.9 Cable Connections**

- All video cables (if required) must be equivalent to Belden 1694A specifications.
- Audio cables (if required) should support AES/EBU signals, 110 Ohms, halogen free.

## **2.10 Grounding**

All equipment shall be grounded to a Technical Ground independent of the electrical building ground. Particular care shall be taken to avoid short-circuiting these grounds together by appropriate choice of grounding points for such items as co-axial cable sleeves and wiring shields.

All equipment's DB,s shall be fitted with isolated earth terminal bar and connected to 16mmsq cu / PVC earth wire from existing technical bar while the DB enclosure must be bonded to safety earth .

## **2.11 Electrical Interface to Other Equipment**

The Supplier shall take all necessary steps to ensure that electrical interference to other equipment is kept below a level which would degrade the signal-to-noise ratio of other equipment.

## **2.12 Technical Documentation**

Unless otherwise specified in the Detailed Specifications, the following documentation, as a minimum, shall be provided.

**The following documentation will be provided with the offer:**

- The supplier will provide original or copy of all brochures for all the equipment in the BOQ.
- If sufficient information is not provided by the brochure a copy of the user manual of the same will be provided.
- All technical documentation relating to the components of the project are mandatory with the offer.
- A preliminary wiring schematic.
- Work schedule showing stages of work & time period.

It is strongly recommended that the manuals be provided both in printed format and in computer portable document format.

Acceptance of the technical information will be conditioned by experience in the operation and maintenance of the equipment and will not be made until Final Acceptance. All information supplied shall have been revised by the Supplier to include all changes and additions to eliminate all errors and omissions occurring or discovered during the course of installation and initial operation.

### **2.12.1 Operation Manuals**

The purchaser shall be supplied with 2 sets of operating manual hard copy & 1 set of CD/DVD or other convenient consumer portable media document format stated below for the equipment/system.

- Electrical specifications of the equipment/system.
- Operational specifications of the equipment/system.
- Functional diagram.



- Detailed front and rear panel diagrams indicating the placement of all controls and connections.
- Detailed descriptions and system diagrams of operational and control configurations.
- Step-by-step explanation and functional description of the operation of each control, indicator, and/or software feature.

### 2.12.2 Maintenance/ Service Manuals

The purchaser shall be supplied with 2 sets of maintenance manuals stated below for the equipment/system at the time of delivery of equipment.

- Electrical and mechanical specifications of the equipment/system.
- Operational specifications of the equipment/system.
- Circuit schematic diagrams.
- Itemized parts list. Including generic part numbers and substitutions and complete assemblies and sub-assemblies.
- Functional diagrams.
- List of test equipment required for maintenance and repair of the equipment/system.
- List of specialized tools for maintenance and repairs.
- Explanation of the theory of operation.
- Step-by-step description of the method for performing routine, preventative and corrective maintenance and repair of the equipment/system.
- Detailed front and rear panel diagrams indicating the placement of all controls, connections and pin-outs.
- Detailed troubleshooting guide, including a complete explanation of the functions of the indicators and software.

### 2.12.3 system software

Original and final form of software shall be provided by the Supplier in digitally recorded standard media, such as disks, CD/DVD ROMs, etc. After the Final Acceptance, the software shall be owned by the Purchaser for use only on the system (or equipment) supplied under the Contract. However, without written consent of the Supplier, the Purchaser shall not be entitled to use the same software elsewhere, nor to transfer to other parties in any form and for any reason, nor make any modifications.

- When the system contains commercially available software which has been purchased by the Supplier for incorporation in the system (such as Windows, Office, etc.) the Purchaser shall be supplied with the original disks and manuals.
- The successful Supplier will be required to provide the Purchaser with evidence that he has obtained a license to utilize any software modules which have been written by a third party. And the full ownership of the software supplied must belong to the purchaser, that is MOI.
- ***The cost of a lifetime software license shall be included in the basic system price.*** The Purchaser will NOT consider any future charges for the use of the software supplied under the Contract. Whole offer must include all the payments: software

licenses, support for 1 years, etc. No additional or future payment should be considered.

#### 2.12.4 Updates and Diagnostics

- The Supplier shall provide hardware and *software updates free of charge for a period of 1 year after date of project acceptance*. The Supplier shall state his policy concerning updates past this period and is invited to describe, and quote as an option, any fixed price contract which could be offered to provide future software updates, including the incorporation of additional features.
- The supplier is entitled to provide free of charge any software updates due to a configuration change in the supplied hardware of any equipment during the period of 1 year.
- The Purchaser will be provided, at no charge, with any software updates required to meet the full intent of the Contract. This shall include those required to fix any problems and to incorporate features which were not fully operational when the systems were delivered.
- Support for period of 1 year must be included in Contract. Purchaser should be able to get fast support 7 days a week by email, telephone, while in case of emergency, highly qualified person must be available on the phone in 30 minutes and on site (MOI building) in maximum 12 hours from emergency call. A form of high priority customer support SLA for 1 year is to be provided, which covers software and hardware issues coverage. **(1 year manufacturer SLA with 1 hour response + Supplier support Engineer support within 30 minutes response and 12 hours on-site attendance).**

#### 2.12.5 Other Documentation

- Parts lists shall contain the original manufacturer's designations and not the Supplier's part numbers.
- Cable numbers shall appear on schematic diagrams. These numbers shall agree with the numbers appearing on the cables which the schematic represents. Lists of cables shall also be supplied in a format agreed by the Purchaser. In case the supplied system is an addition of the existing facilities, cable numbering format should be the same as the format already in use within the location concerned.
- Unit identification on drawings shall be such as to relate to mounting position of the equipment.

### SUPPLIER'S PROPOSAL

#### 2.13 Point by Point Description

The Supplier shall submit his bid in point by point form whereby he agrees, disagrees, or wishes to modify any of the described clauses or items in the Technical Specifications. His point by point form should use the same format as the Technical Specifications to facilitate comparison. Submitted description (Compliance list) will be the main criteria when deciding the winning bid. All points and explanations will be treated as part of Contract, with its legal weights, responsibility and obligations.

## **2.14 System Description**

The Supplier shall include in his Proposal a description of the proposed system. This information shall be in the form of drawings, written description of the overall system(s) including details of the purpose, theory and method of operation of various items included, equipment lists, equipment layouts, control and indicator panel layouts, mechanical and technical performance specifications, and any other information required to enable the Purchaser to determine the Supplier's intent in meeting the objectives of the Technical Specifications.

## **2.15 Relaxation of Specification**

If the Supplier wishes to recommend modifications in design or considers that any part of the Detailed Specifications imposes unduly severe restrictions on the economic design of the system or equipment, he shall draw attention in his Proposal to the relevant clauses and indicate the extent of the relaxation that he considers desirable and state the resultant possible reduction in the prices quoted.

## **2.16 Sub-Contractors**

- The Supplier shall submit in his Proposal the names of Sub-Contractors considered, if any, for each of the subsystems. The Purchaser shall be at liberty to object to any of Supplier's sub-contractors for reasonable cause. Upon such reasonable objection, the sub-contractor shall not be permitted to perform any part of the work.
- The electrical sub-contractor shall be classified by CTC – Grade 2. And all electrical installation shall only be supervised by licensed electrical engineer.

## **2.17 Schedules**

- The Supplier shall submit with his Proposal, a Critical Path Method Schedule, bar charts, manpower schedules, fixing the date he guarantees to meet for submission of drawings, the beginning of the manufacture and installation of material, and for the completion of the various parts of the work. Subsequent changes to work schedules that would affect the promised delivery date must be approved by the Purchaser.

- In setting the aforesaid schedules, the Supplier shall bear in mind the conditions set out in the Technical Specifications regarding inspection and tests at his premises, also that changes may be necessary at his premises in order that the equipment will meet the conditions set out in the Detailed Specifications. The schedules provided will be used by the Purchaser to establish "Operation-Start" dates for related or other dependent projects.

## 2.18 Options

The Supplier shall quote on the detailed requirements as well as on the options listed in the Detailed Specifications.

## 2.19 Accessories

The supplier shall provide all standard accessories necessary for the equipment to perform all its functions in full. As part of his quotation, the Supplier shall provide a separately priced list of extra accessories, if any, recommended for functions of equipment in addition to those specified in Technical Specification.

## 2.20 Spare Parts

As part of his quotation, the Supplier shall provide a separately-priced list of recommended spares for delivery with the system. The list shall give the quantity of each of the modules used in the system. The Supplier shall undertake actions to procure parts which are not readily available in Kuwait and deliver them in maximum ten days. In the case of electronic equipment, this list shall be composed of the following:

- a) List of the recommended board assemblies
- b) List of the recommended components.

Alternatively, within the ten year period, the Supplier shall have available such modification parts as are necessary to enable a substitute to be used without degradation of performance. Spare parts shall be available at the Supplier's premises or local/regional representatives, and a list of the stock items is to be submitted. ***The amount of 5% from overall equipment price must be included in proposal.*** This budget will be used freely by customer (MOI) for fast parts supplying, for some system changes and future upgrades.

## 2.21 Special Tools Parts

Any fittings, apparatus or accessories, such as special wrenches, keys, meters, tools, extender modules (if applicable), etc., not normally and readily available, but which are usual or necessary for the adjustment, maintenance or operation of the equipment supplied shall be provided by the Supplier without extra charge.

## INSPECTION, TESTING AND ACCEPTANCE

## **2.22 Testing and Provisional Acceptance at Site**

- When the on-site installation is completed, the Provisional Acceptance Tests will be performed
- Equipment performance parameters specified in Detailed Specifications shall be met with no adjustments being necessary between individual tests.

## **2.23 Final Acceptance**

Final acceptance of all documentation, including those for software, shall be made upon supplying the new sets of documents with all corrections (done after negotiations with the customer), modifications, deletions, etc.

## **TRAINING**

### **2.24 Training on Site**

- The Supplier shall plan and propose a training program to be implemented during the performance of the Contract.
- Technical training courses shall be provided for maintenance and operating trainees assigned by the Purchaser in English, while training in Arabic would be an advantage.
- The Purchaser will ensure that the trainees with appropriate knowledge and skills are prepared/selected will evaluate training courses as provided.
- Training course manuals, as provided for each trainee, may contain excerpts from the maintenance and operations manual, as well as simplified diagrams, reference materials and tutorials as deemed necessary.

# ***DETAILED TECHNICAL SPECIFICATION***

## **3.1 Storage System**

**Avid Nexis E4 120 TB or equivalent**

### **3.1.1 Storage Expansion, 120 TB**

**Qty = 2**

**Avid Nexis E4 120 TB or equivalent**

The storage is to be 120 TB minimum and must have a separate controller, with the possibility to be expanded in the future.

- Media Drives : Up to two Media Packs of 10 drives (6 TB, 10 TB, or 14 TB) each for a total storage capacity of 60 TB–280 TB maximum per engine, with up to 1.2 GB/s of bandwidth
- System Drives : Two solid-state system and metadata drives
- File System : Avid NEXIS | FS—64-bit self-balancing, distributed file system with intelligent media distribution/redistribution, real-time media access, and dynamic disk protection
- Supported Client: Windows 8.1, 10 (up to Windows 10 Update 20H2); Windows Server 2012 R2, 2016, 2019; macOS 10.14 (64-bit), 10.15, 11, 11.1; CentOS 7.5–7.8
- File Support : 8 million files; expandable to support 20 million files with the optional System Director Appliance
- System management and security : Embedded System Director included; optional System Director Appliance available for larger-scale deployments and high availability ,California SB-327 compliant with built-in measures facilitating a more secure password protocol
- Power supply : Four 580W, 100–240 VAC, 60/50 Hz (two must be functional)
- 4 100-240 V PSUs
- 4RU Rack Size
- E4 Engine with two 60TB Media Packs with Elite Support Also includes Two SSDs, E4 Controller w/ (unpopulated) 10Gbps Ethernet SFP+ interface, four 100-240v Power Supply Units, rack mounting HW All drive slots in Avid NEXIS | E4 Engines must be configured with a drive in a carrier or a blank drive slot cover to maintain airflow and cooling (up to 2 spare drives). 2 Drive Slot covers are included with all E4 engines. NOTE: Network interface SFP+ 10GbE optics or 10G Direct Attach Cables must be included

### **3.1.2 High Priority Technical Support Plan for Storage**

**Qty = 2**

**Avid NEXIS | E4 Controller, Elite Support**

- Hardware and Software coverage
- 1 hour response time to resolve issues

**3.1.3 Spare HDD, 6 TB Qty = 4**

Spare 6 TB HDD (in carrier) for Avid NEXIS | E2 & E4 Engine.

**3.1.4 Optical 10Gbps transceiver Qty = 8**

10GbE Ethernet SFP+ LC 300m range, SR 850nm wavelength.

- The added storage must integrate seamlessly with the current storage setup in studio 300 and the bidder shall include any additional licenses or services to comply to this request.

**3.2 Storage Disks for Grass Valley K2 System and Installation**

**Disk Drive NLSAS 3.5 or equivalent**

Similar to Avid storage system, the news has another workflow related to Grass Valley storage system. To improve and increase the Grass Valley storage system, it is required to add media drives to the existing Grass Valley storage, which are, according to the manufacturer, a proprietary products and require services for installation.

**3.2.1 GV Disk Drives Qty= 4**

Disk Drive NLSAS 3.5" or equivalent

**3.2.2 Grass Valley Installation and Configuration Services Qty= 1**

The necessary service to install and configure and ensure configuration of the new disks with the storage system.

**3.3 Network**

Bidder must provide suitable network necessary to accommodate all devices and workflow(s) described in this document. It is up to the bidder to calculate the bandwidth necessary for the proper workflow in worst case scenarios and to provide adequate support regarding all network issues. Please note that the network should be calculated with 25% overhead to accommodate any future expansions of the system.

The following components must be provided and installed in a proper way in NEWS Engineering rack room:

**3.3.1 Existing Core Switch Expansion Module, Qty = 2**

Cisco C4500-X 8 port 10GigE expansion module.

**3.3.2 10 GbE optical SFP+ Qty = 8**  
10 GbE optical SFP+ for Cisco 4948E and C4500-X switches. 850 nm laser compatible with 50 micron MMF cable; 300 meters maximum distance.

**3.3.3 Optical Multi-mode Cable, 10 Meters Qty = 8**  
10 meters optical multi-mode cable for 10 Gigabit Ethernet, LC connectors.

## **4 INSTALLATION AND SERVICES**

### **Video**

All the cable installation must adhere to the highest standards and quality as in video cables must be Belden for all required cabling and gold pins. High quality 75 ohms termination.

### **Audio**

High quality shielded cables, less than 60pF/m capacitance. Preferred XLR connectors is Neutrik.

### **Services**

- 1- Main vendors Professional Services, Project Management and Commissioning
- 2- Professional Services Including System Design, System Installation, System Commissioning, System Testing & Acceptance
- 3- Installation Materials to deliver Turnkey operational system
- 4- Warranty for the System for a period of 1 year



## 5 Proposed Bill of Quantity

Item	Description	Qty	Unit Price KD/Fils	Total Price KD/Fils
<b>3.1</b>	Storage System	A.R.		
<b>3.1.1</b>	Storage Expansion	2		
<b>3.1.2</b>	High Priority Technical Support Plan for Storage	2		
<b>3.1.3</b>	Spare HDD	4		
<b>3.1.4</b>	Optical 10Gbps transceiver	8		
<b>3.2</b>	Storage Disks for Grass Valley K2 System and Installation	A.R.		
<b>3.2.1</b>	GV Disk Drives	4		
<b>3.2.2</b>	Grass Valley Installation and Configuration Services	1		
<b>3.3</b>	Network	A.R.		
<b>3.3.1</b>	Core Switch Expansion Module	2		
<b>3.3.2</b>	10 GbE optical SFP+	8		
<b>3.3.3</b>	10 meter optical multi-mode cable	8		
<b>4</b>	Installation and Services	A.R		