

THE HASHEMITE KINGDOM OF JORDAN



**TELECOMMUNICATIONS REGULATORY COMMISSION
(TRC)**

Tender No. 4 /2016

**Mobile Networks "QoS/QoE" Autonomous Probes
Real Time Monitoring System**

Deadline for submission of Bids is 14:00 Hrs. of 3/4 /2016

Deadline for purchasing the Tender documents is 14:00 Hrs. on 3/3 /2016

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1 Introduction

The provision of telecommunication services in Jordan is governed by the Telecommunications Law No. (13) Of 1995 and its amendments (hereinafter the "Telecommunications Law"). The Telecommunications Law establishes that the Ministry of Information and Communications Technology (MoICT) is responsible for preparing sector's general policy. Article (4) of the Telecommunications Law establishes the Telecommunications Regulatory Commission (hereinafter the "TRC") as a financially and administratively independent regulatory authority having responsibility for the regulation of telecommunications and information technology sectors and postal sectors in the Hashemite Kingdom of Jordan. The TRC acts in accordance with the provisions of the Telecommunications Law and the Government Policy and regulates the sectors through a series of regulatory decisions and Instructions.

Under article (6/d) of the Telecommunications Law, The Commission shall undertake the following duties and responsibilities:

To protect the interests of Beneficiaries and monitor the actions of persons and licensed parties to ensure that the conditions of Licenses are observed, including specified service standards, service quality, and prices; and to take the necessary legal actions in front of those who violate these conditions.

Article (59) of the said Law clarified state that; *"The Commission shall verify the Licensees' compliance with the License conditions and the provisions of the Law, and may take any actions it deems appropriate for this purpose, including:*

- a. Conducting a physical on-site inspection of network locations and Telecommunications equipment.*
- b. Examining the Licensee's technical records and ensuring that sound and accurate systems are being used for issuing invoices.*
- c. Ensuring the standard of service provided to Beneficiaries and their complaint.*
- d. Reviewing the Licensee's records of maintenance and defects to ensure the efficiency of the service management.*

The rapid developments in the Mobile Telecom Market in Jordan shifted TRC's consideration to concentrate on the customers' needs and their experience of accessing and utilizing at most the features and services offered by Mobile Network Operator (MNO). TRC extensively worked in the last decade to deliver the operators with the necessary resources and enablers to introduce and maintain a wide variety of voice and data services. As a result, all of the MNO offering 2G (GSM), 3G (UMTS) and 4G (LTE) services.

2 General System Overview:

- 2.1 TRC aims to start a project of building the necessary capacity for monitoring, measuring and benchmarking, real time, End to End QoS/QoE from user point of view for voice, video, data, messaging services and OTT applications for mobile networks.
- 2.2 The system shall be an autonomous smartphone- probe based network monitoring system.
- 2.3 The system shall be 24/7 real-time monitoring for mobile telecom network in different locations in Jordan.
- 2.4 The system shall be able to operate in a static, nomadic, or full mobile state.
- 2.5 The system shall support (GSM, GPRS, EDGE, WCDMA, HSDPA, HSUPA, HSDPA DC, LTE-FDD & TD-LTE) technologies.
- 2.6 The system shall be capable to analyze all measured data and shall provide reporting and statistical capabilities.
- 2.7 The system shall be able to do full recording and decoding of protocol layers on the supported technologies: 3GPP L1, L2, L3, TCP/IP, IMS, and SIP.
- 2.8 The system shall be able to test multiple networks and technologies.
- 2.9 The system shall have the capability and mean to use GPS.
- 2.10 The system shall have the capability of Fleet tracking, Control, Configuration and monitoring.
- 2.11 The system shall have the capability to configure mobile probes remotely; i.e. configuration and testing scope and schedule is to be done from the control center.
- 2.12 The status and location of the measurement components shall be continuously monitored from the control center.
- 2.13 High-level real-time KPI and results shall be monitored from the control center.
- 2.14 The system shall have post-processing SW for detailed analysis and troubleshooting.
- 2.15 At this stage the system shall consist of the following; the detailed description of the system will be in the following sections:
 - a) Measurement sets that consist of Mobile probe(s) smartphone based to cover **(6) six locations**.
 - b) Each location shall benchmark **(3) MNO networks** (Zain, Orange and Umniah).
 - c) The real time QoS/QoE measurements shall be monitored from the control center which consist of **(2) Smart Screens**.
 - d) Reliable Post processing system.

3 System Components and Technical Specifications:

TRC is seeking a system consisting at least of the following:

3.1 Mobile Probe:

- 3.1.1 The Mobile Probe shall be Smartphone based.
- 3.1.2 The smartphone probe shall be Multi platform (GSM, GPRS, EDGE, WCDMA, HSDPA, HSUPA, HSDPA DC, LTE-FDD & TD-LTE) and all 3GPP future evolutions.
- 3.1.3 The smartphone probe shall be Capable to perform the tasks and tests assigned to it in real time.
- 3.1.4 The smartphone probe shall be able to report collected measurements related to QoE and QoS indicators to the Control Center in real time.
- 3.1.5 In case of connection failure with the control center the probe shall be able to store the measurements locally at least 2 hours until it resumes sending data back to the control center upon the connection availability,
- 3.1.6 The Smartphone probe shall be able to operate in the "Remote Control Mode".
- 3.1.7 The smartphone probe shall be controlled from the control center.
- 3.1.8 The smartphone probe shall be protected by a Ruggedized housing unit.
- 3.1.9 The smartphone probe shall perform self diagnose and have watch-dog software to handle operations failure and system recovery,
- 3.1.10 The smartphone probe shall have the capability of perform identical tests and tasks on (3) MNO networks (Zain, Orange and Umniah).
- 3.1.11 The smartphone probes shall comply, as minimum, with all of the technical specifications below:
 - a. Operate on the following technologies and frequency bands:
 - i. GSM 850 / 900 / 1800 / 1900

- ii. HSDPA 850 / 900 / 1700 / 1900 / 2100
 - iii. LTE band 1(2100), 2(1900), 3(1800), 4(1700/2100), 5(850), 7(2600), 8(900), 12(700), 13(700), 17(700), 18(800), 19(800), 20(800), 25(1900), 26(850), 28(700), 29(700), 30(2300), 38(2600), 39(1900), 40(2300), 41(2500)
 - iv. GPRS.
 - v. EDGE.
- b. The minimum speeds of: HSPA 42.2/5.76 Mbps, LTE Cat6 300/50 Mbps.
 - c. Internal memory of at least 32 GB.
 - d. 2 GB RAM.
 - e. 5" Multi touch capacitive screen, 16M colors with more than 400 ppi pixel density.
 - f. Multi core CPU with minimum speed of 1.8 GHz
 - g. Wi-Fi 802.11 a/b/g/n/ac, dual-band, Wi-Fi Direct, hotspot.
 - h. Bluetooth: v4.2, A2DP, EDR, LE.
 - i. GPS: A-GPS, GLONASS.
 - j. Sensors: accelerometer, gyro, proximity, compass, and barometer.
 - k. Li-Po battery with minimum of (2100 mAh).
 - l. Messaging capabilities: SMS, MMS, Email, and Push Email.
 - m. Support HTML5 browser.
 - n. The firmware of the smartphone and all of the testing applications installed to it should be remotely upgradable (accepts over the air updates).

3.2 Measurement Set

- 3.2.1 The bidder shall be aware that TRC need to conduct benchmark measurements for the all of Jordanians MNO's (Zain, Orange and Umniah) at a given location simultaneously for a given technology and test procedures. To comply with this tender, the bidder shall offer for each location a measurement set that will achieve benchmark measurements.
- 3.2.2 The Measurement set shall consist basically of Smartphone Probe(s) at least of (3) smartphone probes, Ruggedized Housing Unit(s), proper means of External Power Supply that severe the different operating configurations (Indoor-Static, Outdoor-Static, Mobile on vehicle) and the necessary accessories (e.g. external antennas, GPS, mounting kits ...etc.).
- 3.2.3 The Measurement set shall have all the necessary external connectors (e.g: RF antenna input, GPS antenna, Power Supply input, USB, Ethernet ... etc) as required by the system needs.
- 3.2.4 The Measurement set may support USB modems and PCI mini cards from multi vendors.
- 3.2.5 The Measurement set housing shall be ruggedized and has a secure hardware casing offers multiple deployment scenarios: desktop, wall mounted, pole mounted and in vehicle mounting.
- 3.2.6 The Measurement set shall have an adequate ventilation mechanism.
- 3.2.7 The Measurement set shall have Built-in or external GPS.
- 3.2.8 The Measurement set shall support external scanners (GSM, WCDMA, LTE) on the following frequency bands: 700 MHz, 800 MHz, 850 MHz, 900 MHz, 1700 MHz, 1800 MHz, 2100 MHz and 2300 MHz.
- 3.2.9 The bidder shall describe the mean of connectivity between the measurement set (probes) and the media server that used to up load the data from the probes.

3.3 Management, Analyzing and Post-Processing Setup (Hardware and Software):

- 3.3.1 The bidder shall “at his responsibility” offer the most suitable Post-Processing equipment (Servers) and software(s) to satisfy all the tender requirements based on system dimensions.
- 3.3.2 The system shall be based on the latest commercially available Server technology.
- 3.3.3 The system dimensions shall meet that the current assigned responsibilities, with a potential of at least doubling the measurement sets\Probes in the future.
- 3.3.4 The offered server(s) and software(s) shall be capable to perform all the tasks assigned to it within the monitoring system and as designed by the system vendor/designer i.e. live presentation, collecting data measurement, System Control and Administration, web interface, and data Post-Processing.
- 3.3.5 The system shall be based on Server –client solution that enables Faster Post-Processing of Large Amounts of Data.
- 3.3.6 The system shall not make any copies of the collected measurements to any entity other than TRC servers.
- 3.3.7 This server(s) shall be hosted locally at TRC’s premises or any other location decided by TRC.
- 3.3.8 The bidder shall perform a Final Acceptance Test (FAT) for the supplied system described in the clauses (3.1, 3.2, 3.3, and 3.4) after installation and commissioning;, such test shall include all scenarios and system functionalities in corporation with TRC's staff. In case of test failure TRC will not accept the system unless it’s repeated successfully.



3.3.9 The software(s) shall be capable to perform the following:

- a) Presenting live data transmitted from the Probes on system GUI,
- b) Designing, scheduling and assigning the tasks and tests to the probes.
- c) Analyzing measured data and reporting
- d) Easy report creation and publication (xls, html, csv ...etc.),
- e) KPI builder and report configuration,
- f) Geo-Tracking of the Probes,
- g) Maintain and perform queries on the gathered database of the measurements.
- h) Continuously monitor the status and location of the measurement Set / Probes..
- i) Capable of calculating and reporting high level KPI's related to: Network Availability, Network Accessibility, Service Accessibility, Service Integrity, and Service Retainability.
- j) Automated testing concept, and remotely controlling and configuration i.e. probes, tasks and tests.
- k) Alerting functionality regarding over all system components health, monitored networks failures and drawbacks.
- l) Creating description and graphical reports regarding: System components status and health, monitored networks failures and drawbacks, QoS and QoE KPI reports, fleet management.
- m) Comparing different mobile network according to a given set of KPI's over a specific time period in straight forward and easy steps.
- n) KPI's reporting functionality shall be in form of: Pivot Tables, Charts, and Map plots. The reports shall have a sorting mechanism

based on: Operator, Technology, Device, Map Polygons, time session ...etc.

- o) Customizing reports according to TRC needs and purposes.
- p) Designing, initiating, interrupting, resuming and scheduling the following tests and tasks as minimum:
 - i. **Voice telephony:** Mobile-Mobile call, Audio Delay (RTT) testing on the smartphone, Speech Quality (MOS) through narrowband and wideband channels: ITU-T P.863 (POLQA), ITU-T P.862 (PESQ).
 - ii. **Data:**
 - 1. FTP DL/UL, HTTP DL/UL, PING, Capacity DL (multi thread HTTP, Iperf UDP/TCP).
 - 2. HTTP Browsing.
 - 3. Video streaming / Video live Streaming (YouTube) or any other video streaming website.
 - 4. Video-MOS using ITU approved J.343.1 algorithm
 - 5. DNS.
 - 6. Applications testing (OTT).
 - iii. **Messaging:** SMS, e-mail (SMTP, POP3, IMAP).
 - iv. **Network Performance Test:** testing the maximum data capacity in Down-link and Uplink, Check minimum connectivity and detect areas with outages.
 - v. **CSFB Testing Capabilities**
- q) Mapping capabilities: MapInfo map plotting, Binned data Map plots, Automatic Split of Map plots, Google Earth plotting support, Map plot customization, Map plot export formats and Support import and display of Cell site database for each individual technology with UE to BTS mapping.
- r) Full recording and decoding of protocol layers on the supported technologies: 3GPP L1, L2, L3, TCP/IP, IMS, and SIP.
- s) Direct decoding of L3 text messages and TCP/IP, RTP.
- t) Forcing functions on Technology and frequency Band, ...etc..

3.4 Control Center:

3.4.1 The Control Center where the screen displays the system GUI and the system operators perform the overall system supervision and operation. The setup of such center shall contain basically:

- **(2) Two Smart Screens** sets for system GUI,
- Desktop Computer to provide the interface between the Smart Screens and the Media server,
- Connectivity and switching device connecting the desktop computer and the displays VIA HDMI interface to show different software(s) screens.
- All of the necessary connectors, peripherals and mounting kits.

3.4.2 The bidder must offer the most appropriate setup (HW/SW) for such center in order to facilitate the access to the system and control including

3.4.3 The minimum specifications for the smart Screens shall meet the following:

- a) Slim UHD Display
- b) Quad-Core Processor
- c) Minimum Screen Size: 65 inch
- d) Resolution: 3840 x 2160
- e) Wi-Fi Direct
- f) 4 HDMI Input, 3 USB input, Ethernet, and Built-in Wireless LAN..
- g) Power Supply: AC220-240V 50/60Hz.
- h) Wall Mount Support

3.4.4 Desktop Computer: The minimum specifications for desktop computer shall meet the following:

- a) Processor: Intel® Core™ i7-4790 Processor (Quad Core, 8MB, 3.60GHz w/HD4600 Graphics)
- b) OS: Windows 7 Professional 64bit
- c) Memory: 8GB (2x4GB) 1600MHz DDR3 Memory
- d) HD: 500GB 3.5inch SATA (7200 RPM) Hard Drive
- e) Graphics Card: Intel® Integrated Graphics
- f) Optical Drive: 16X DVD+/-RW Drive
- g) USB 3.0 ports, USB 2.0 Ports, Network connector (RJ45), Serial, VGA, HDMI.

3.5 Quality of Experience (QoE) Calculations:

- 3.5.1 TRC aims to measure Quality of Experience (QoE) and Customer Experience Index (CEI) for the telecom services according to the vendor experience and best practices.
- 3.5.2 Quality of Experience (QoE) is the combination of all weighted Key Quality Indicator (KQI) related to all offered services (layer 4: i.e. Telephony, SMS, Web Browsing, Streaming, FTP, E-mail ...etc.) according to their importance from the user point of view.
- 3.5.3 Each telecom service performance shall be quantified by Key Quality Indicator (KQI), where each (KQI) will be calculated based on combination of certain weighted Key Performance Indicators (KPI's) related to that service.
- 3.5.4 The vendor shall be fully aware of the meaning, mathematical representation and the relationship between the following terms: QoS (Quality of Service) and related KPI's (Key Performance Indicator), QoE (Quality of Experience) and related KQI's (Key Quality Indicator).
- 3.5.5 Hence, the vendor shall build the formula to calculate QoE based on the KPI's and KQI's for each service offered by each MNO.
- 3.5.6 The vendor shall configure and implement the formula to calculate QoE for each MNO in the Post-Processing system.

3.6 Monitored, Measured and Calculated KPIs:

3.6.1 The bidder shall list all of the measured and calculated KPI's that offered by the system.

3.6.2 For greater certainty, all applicable KPI's in ETSI TS 102 250, as minimum, shall be reported and calculated by the system.

3.6.3 The system shall be capable, as minimum, for calculating and reporting the hereinafter the main KPI this does not mean that the system shall be limited to the KPI's listed below:

a) 2G: Call Setup Success Rate (CSSR), Call Drop Rate (CDR), Call Setup Time, Handover Success Rate (HOSR), Call Success Rate (CSR), Time advance (TA), Voice Quality – POLQA, Rx – Level, Blocked Calls, Rx-Level vs. RX-Quality, Mobile Output Power (UL), GPRS Attach Success Rate, PDP Activation Success Rate, Attach Time, PDP Activation Time, Block Error Rate, Coding Schemes, Time Slots Assigned, Throughput, SMS send and Receive Success Rate.

b) 3G: Call Setup Success Rate (CSSR), Call Drop Rate (CDR), Call Setup Time, Handover Success Rate (HOSR), Call Success Rate (CSR), IRAT HOSR, % of Time 3G/2G, Voice Quality UL and DL, RSCP, ECNO, Blocked Calls, RSCP vs. ECNO, ECIO, RSCP vs. ECIO, Mobile Output power (UL), 3G PS Attach Success Rate, 3G PDP Activation Success Rate, Attach Time, PDP Activation Time, Block Error Rate, 3G Successful Transfers, Time Slots Assigned, Throughput SMS send and Receive Success Rate.

- c) 4G: Attach Success Rate, RRC Connection Success Rate, E-Bearer Establishment Success Rate, RRC Setup Time, Best Effort Ping RTD, Downlink BLER per Radio Bearer, Intra Frequency HO Success Rate, Inter Frequency HO Success Rate, IRAT eNodeB HO Success Rate LTE to UMTS, IRAT eNodeB HO Success Rate LTE to GSM, Best-Effort HO Interruption Time, LTE to GSM Best-Effort HO Interruption Time, LTE to UMTS Best-Effort HO Interruption Time, DL HTTP Physical Layer/PDSCH Throughput Peak Rate/Average per Sector, UL HTTP Physical Layer/PDSCH Throughput Peak Rate/Average per Sector, DL FTP Physical Layer/PDSCH Throughput Peak Rate/Average per Sector, UL FTP Physical Layer/PDSCH Throughput Peak Rate/Average per Sector, Session Drop Rate, RSCP Distribution % of Time on LTE, RSRQ Distribution, CINR Distribution and CQI Distribution.
- d) High level KPI's (KQIs) related to: Network Availability, Network Accessibility, Service Accessibility, Service Integrity, and Service Retainability.

4 Documentation:

- 4.1 At the bidding stage the Bidder shall provide all the supporting documents including but not limited to; compliance sheet, system architecture, technical manuals and brochures for each component, Technical description of the monitored and measured KPIs and KQIs, and methodology of system integration ...etc.
- 4.2 At the training stage, the Bidder shall provide User Guide that shows step by step how to use the system, troubleshooting, administration and Configuration of the system ...etc.
- 4.3 Detailed and comprehensive documentation shall be provided by the bidder upon delivery of the system.

5 Training

- 5.1 Detailed and comprehensive training plan shall be described by the bidder, the training shall be provided by a professional team at the vendor premises.
- 5.2 The training plan shall include basic and advanced training.
- 5.3 The following training topics shall be covered, **as minimum:**
 - 5.3.1 Technical description of the KPIs and its measurements techniques.
 - 5.3.2 Protocol layers on the supported technologies: 3GPP L1, L2, L3, TCP/IP, IMS, SIP.
 - 5.3.3 Administration and Configuration of the system.
 - 5.3.4 Troubleshooting the system.
 - 5.3.5 Geo-Mapping training.
 - 5.3.6 Data Post-Processing and issuing reports.
- 5.4 The training shall insure transfer of technical knowledge and as well as to accomplish TRC objective to install, configure, operate, maintain and manage the System in an efficient way.
- 5.5 The training material shall be provided to each of the TRC's trainee in hardcopy and softcopy format.
- 5.6 The Bidder shall provide (2) two training sessions (different time slots); 10 working days for (4) four persons per session.
- 5.7 The Bidder shall provide the cost of eachday for each trainee.
- 5.8 The Bidder shall be resposable for all travel and accommodation costs.

6 Warranty:

- 6.1 The bidder shall provide TRC with a three (3) years full warranty on all components of the system (hardware and Software) from the date of final Acceptance.

- 6.2 The bidder shall define, clarify and describe his warranty services.
- 6.3 The warranty shall cover hardware and software problems, periodic site visits (minimum 2 times per year), spare parts, man days, bug fixing, patches, software upgrades...etc.

7 Maintenance Contract:

- 7.1 The Bidder shall commit of signing a maintenance contract with TRC after the end of the free warranty period for additional 3 years.
- 7.2 The bidder shall define, clarify and describe his Maintenance services.
- 7.3 The Bidder shall price the cost of the maintenance contract after the warranty period on a yearly basis.
- 7.4 The maintenance shall cover hardware and software problems, periodic site visits (minimum 2 times per year), spare parts, man days, bug fixing, patches, software upgrades...etc.
- 7.5 The system life age shall be clearly provided.
- 7.6 The cost of the maintenance contract shall have an impact on the determination by TRC of the Bidder's qualification.
- 7.7 Acceptance of the offered maintenance contract shall be at the sole discretion of TRC, at any time prior to delivery and acceptance of the goods.

8 STATEMENT OF COMPLIANCE

The bidder shall fill compliance table for the articles and clauses (2 - 7) in this tender document as in the table below:

No.	Clause Reference in Tender Documents	Compliance YES/ PARTLY/ NO	Description of Partly or Non-Compliance	Explanation for Partly or Non-Compliance

9 Special Conditions:

الشروط الخاصة بدعوة العطاء رقم (4 / 2016) :

تعتبر هذه الشروط مكملة لتعليمات الدخول في العطاء والشروط العامة للتعاقد وتكون لها في التطبيق قوة العقد لشراء اللوازم والخدمات وتكون ملزمة للمناقضين وللجنة العطاءات حق استبعاد أي عرض غير ملتزم بكل أو بأحد هذه الشروط:-

- (١) يرفق بالعروض تامين للدخول في العطاء على شكل كفالة بنكية أو شيك مصدق صادرة / صادر عن بنك محلي بنسبة لا تقل عن (٣%) من قيمة العرض الإجمالية وحسب النموذج المرفق، وسوف لن ينظر في أي عرض غير معزز بالتأمين المطلوب.
- (٢) يلتزم المناقص بأن يبقى العرض المقدم من قبله ساري المفعول لمدة (١٢٠) مائة وعشرون يوماً من تاريخ الإغلاق.
- (٣) يجب ذكر الرقم الوطني الضريبي (الدخل والمبيعات) والاسم بشكل واضح ورقم صندوق البريد ورقم الفاكس والهاتف وتحديد المنطقة والرمز البريدي.
- (٤) يجب تقديم الكتالوجات والنشرات الفنية (نسخ أصلية) مع العروض وتوضيح رقم المادة واسم المناقص على كل كتالوج ونشرة فنية وكذلك ختمه وتوقيعه.
- (٥) يجب أن تكون المواصفات الواردة في عرض المناقص واضحة ومبوبة بشكل جيد بحيث تكون الوحدة والكمية والسعر الإفرادي والإجمالي وفترة التسليم مبينة إزاء كل مادة.
- (٦) يعتبر تقديم العرض من قبل المناقص تأكيداً منه بأنه أجرى التزاماً مع الشركة المصنعة بكامل اللوازم المعروضة وضمن مواصفات وشروط دعوة العطاء (العرض المقدم من قبله).
- (٧) يعتبر تقديم عرض المناقص التزاماً منه بأنه مطلع ومتفهم لجميع مواد تعليمات العطاءات رقم (١) لسنة ٢٠٠٨ ووثائق الدعوة المرفقة.
- (٨) على المناقص أن يرفق بعرضه ما يثبت مقدرته المالية والفنية على تنفيذ متطلبات العطاء وتأمين وسائل الصيانة (Company Profile).
- (٩) تقدم الأسعار بالدينار الأردني متضمنة التوريد والتركيب والتشغيل والتدريب في الموقع الذي تحدده الهيئة شاملة الرسوم الجمركية والضريبة العامة على المبيعات والرسوم والضرائب الأخرى.
- (١٠) يتم التسليم والتركيب والتشغيل في المواقع التي تحددها هيئة تنظيم قطاع الاتصالات.

- (١١) يلتزم المتعهد بصيانة النظام والأجهزة مدة ثلاثة سنوات مجاناً شاملة لقطع الغيار والتحديثات على البرمجيات وأجور العمل تبدأ اعتباراً من تاريخ الاستلام النهائي.
- (١٢) يلتزم المتعهد بتقديم كفالة صيانة بنسبة (٣%) من القيمة الإجمالية للإحالة لمدة ثلاثة سنوات من تاريخ الاستلام النهائي وحسب النموذج المرفق.
- (١٣) يلتزم المتعهد بتقديم أسعار الصيانة السنوية لمدة (٣) ثلاث سنوات بعد انتهاء الفترة المجانية.
- (١٤) يلتزم المتعهد بدفع رسوم طوابع الواردات وتقديم كفالة حسن التنفيذ قبل توقيع أمر الشراء (الاتفاقية).
- (١٥) يلتزم المتعهد بتقديم كفالة حُسن تنفيذ بنسبة (١٠%) من القيمة الإجمالية للإحالة وحسب النموذج المرفق.
- (١٦) على المناقص اعتماد الدعوة ومرفقاتها لتعبئة عرضه عليها.
- (١٧) يلتزم المتعهد بأن تكون اللوازم الموردة جديدة (١٠٠%) وخالية من أي عيوب في الصنع أو في المادة ومن طراز حديث ولم يتوقف إنتاجها.
- (١٨) يلتزم المتعهد بتقديم ضمانات من سوء المصنعية لمدة سنة من تاريخ الاستلام النهائي مصدق من كاتب العدل وحسب النموذج المرفق.
- (١٩) يتم الدفع بعد التوريد والتركيب والتشغيل والاستلام النهائي.
- (٢٠) مدة استلام جميع مكونات العطاء من توريد وتركيب وتشغيل وتدريب (٢٠) أسبوع من تاريخ الإحالة، على النحو التالي:
- أ. (١٢) أسبوع مدة التوريد النظام.
- ب. (٤) أسابيع للتركيب والتشغيل.
- ج. (٤) أسابيع للتدريب.
- (٢١) يخضع هذا العطاء للقانون الأردني وتكون المحاكم الأردنية صاحبة الاختصاص في النظر في أي دعوى عند الضرورة.
- (٢٢) يلتزم المتعهد بتعبئة جدول المطابقة للفقرات { (٢) - (٧) } مع توضيح أي ملاحظات بحاجة للتوضيح، ويحق للهيئة إلغاء عرض المتعهد واعتباره غير مؤهل للدراسة الفنية في حال عدم إرفاق جدول المطابقة.