

Annexure A

The scope of work entails the following deliverables:

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| Items | Quantity |
| Automatic drive test solution/ remote probe | 1 (with 4 x RF modules) |
| Central Control facility | 1 |
| Intermediate server | 1 |
| Scanner | 1 |
| Others:* Training
* Installation
* Support
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**3.1 Automatic drive test solution**

ICASA seeks to acquire an integrated system that shall assess the quality of service of voice, data and video services in South Africa.

3.1.1. The system shall comprise of a measurement solution, which will include:

* + Unattended remote probe.
	+ Intermediate server for remote test set up, data storage and system function configuration.
	+ The solution shall be able to operate as a standalone and remotely configurable unit.

3.1.2. The system shall record QoS events including blocked calls, dropped calls, low signal levels, poor quality signals, low throughput thresholds and other significant events related to QoS KPIs, as prescribed in the ICASA’s **“End-User and Subscriber Service Charter regulations of 2016**” and SABS’s **“SANS 1725”.**

3.1.3. The remote probes shall have capability for local configuration to enable continued operation in case of failure of the central control system or associated communication link.

3.1.4. The remote probes shall be of a mobile nature, easily deployed and transferable in different modes of transport (such as cars, public buses, etc.) or can be installed at a designated location to be specified by ICASA.

3.1.5. The remote probe shall be able to automatically upload the captured data to a central control facility for processing and reporting. The frequency of upload of captured data shall be configurable. The system shall provide for manual upload as a redundancy mechanism to the auto upload.

3.1.6. The system shall be able to monitor the following call scenarios;

* 1. Mobile to Fixed (M2F) subscriber
	2. Mobile to Mobile (M2M) subscriber
	3. Fixed to Mobile subscriber

3.1.7. The test used in the various measurements done by the system shall simulate typical end-user behavior. Each probe must be capable to simultaneously conduct voice, data and video measurements for each mobile service provider.

3.1.8. The system shall support QoS testing of voice, data and video services offered in the different frequency bands and technologies such as: GSM, EGSM, GPRS, EDGE, WCDMA (UMTS), HSPA+, LTE-TDD, LTE-FDD, LTE Advance, etc. The bidder shall provide a comprehensive list of technologies supported by the proposed system.

3.1.9. The system shall support QoS tests for voice, data and video services in accordance with the “ICASA’s End-User service charter Regulations of 2016[[1]](#footnote-1) ”; as well as the respective international standards including, but not limited to ITU-T E.804, ITU-T P.861 ITU-T P.862(PESQ), ITU-T P.863 (POLQA).

3.1.10. The system shall allow flexibility to users to customise key performance indicators (KPI), test cases and report templates.

3.1.11. The system shall log and decode all protocol layer messages (Layer 1, Layer 2 and Layer 3, Physical, Data and Network layer respectively) for all technologies measured.

3.1.12. All software required for the proper functioning of the system shall be supplied with the system and shall be valid for at least two (2) years after system acceptance.

3.1.13. The supplier shall provide remote upgrade of this software and installation of software patches for at least two (2) years from installation of the system at no further cost to the Authority.

3.1.14. In summary, the system shall be able to provide the following:

* Raw measurement data
* Analysis reports in format specified by ICASA
* Root cause analysis of QoS issues and identification of problem location. The log files shall be compatible or playable on ICASA existing TEMS Discovery 11.1.4 or later post processing tool.

**3.2 Installation**

1. The supplier shall install and configure all components and shall at all times ensure proper operations of the solution.
2. The supplier shall provide remote upgrade of software and remote installation of software patches at no additional cost to ICASA.
3. The commissioning and installation will be in Gauteng.
4. ICASA shall provide a vehicle for the installation.
5. Vehicle installation will amongst other, include the following: Cabling, Battery backups, Power Inverters, Antennas and Cabinets with shock mountings to ensure a complete working system.

**3.3 Product Support and Licensing**

1. The supplier shall have proven capacity to timely maintain, repair and replace all components of the system.
2. Local presence in South Africa will be critical, as we require service in shorten lead times.
3. The supplier shall have an online portal for logging of faults and complaints and may supplement this portal with other reporting platforms.
4. The bidder must state the manufacturer’s end of support for this product, which shall not be less than 3 years from date of installation.
5. Licences and remote upgrades of software and installation of software patches for at least 3 years from installation of the system.

**3.4 Guarantee and Warranty**

The supplier shall provide a guarantee and warranty of at least one year, both of which must be issued by the equipment manufacturer. The guarantee and warranty periods should not be concurrent. The manufacturer must provide confirmation at the time of bidding of full guarantee and warranty including but not limited to:

* After sales support and maintenance by the system manufacturer
* Any spare parts required.

**3.5 Training**

Within the context of this procurement, the supplier shall provide full training to 20 staff members of ICASA. The training shall cover the functionality and maintenance of the system with practical hands on sessions. The training shall be done on the actual system being supplied under this procurement.

**3.6 Spares and Repair Facilities**

Provide written proof that you have the support from the Original Equipment Manufacturer (OEM) regarding the availability of spares and local repair facilities.

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| 1. **Performance measures**
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The Service Provider/s is expected to provide ICASA with modular and scalable drive test solution which can benchmark the performance and QoS of the telecommunication service to monitor the following service: voice, data and video services. The system should be able to produce mobile service KPI’s such as: availability, sustainability, Coverage and Retainability as detailed in the technical specifications. The service provider must meet the following mandatory technical requirements:

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| **Mandatory Technical Requirements**  |  |
| Provide unattended probe system  |  |
| Provide a server for remote communication with the probe. |  |
| The probe shall support the following technologies: GSM, EGSM, GPRS, EDGE, WCDMA (UMTS), HSPA+, LTE-TDD, LTE-FDD and LTE Advance. |  |
| The system shall log and decode all protocol layer messages (Layer 1, Layer 2 and Layer 3) for all technologies measured |  |
| The supplier shall provide after support and maintenance of the system |  |
| The log files and recorded data shall be compatible or playable on TEMS Discovery 11.1.4 or later. |  |
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1. https://www.icasa.org.za/LegislationRegulations/FinalRegulations/ConsumerProtectionRegulations/tabid/717/Default.aspx [↑](#footnote-ref-1)