The Federal Government of Somalia
Ministry of Communications and Technology

Amendment No. 2

REQUEST FOR PROPOSALS

RFP No: SO-MOCT-FGS-558190-NC-RFP

Project: Eastern Africa Regional Digital Integration Project (EA-RDIP)

Project ID: P176181

Contract title: Spectrum Management and Monitoring Equipment (Fixed and Mobile Units) for the support of National Communications Authority of Somalia (NCA), FGS.

Purchasing Agency: Ministry of Communications and Technology (MoCT), FGS

End user: National Communications Authority of Somalia (NCA)

Country: Somalia

Issued on: *October 19, 2026*

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To: All Prospective Proposers

Amendment No.2 to Section II, Proposal Data Sheet (PDS) – ITP 23.1 and ITP 26.1; Section VII – Purchaser's Requirements (Fixed Monitoring Stations; Network Control Centre; Services, Warranty and Maintenance; Measurable Geolocation Performance Requirements; Maintenance and Post-Warranty Support Obligations; and Cybersecurity Requirements) and Section IX – Special Conditions of Contract of the Request for Proposals - Spectrum Management and Monitoring Equipment (Fixed and Mobile Units) for the support of National Communications Authority of Somalia (NCA), FGS.; RFP No.: SO-MOCT-FGS-558190-NC-RFP

1. Pursuant to ITP 8.1 and ITP 8.2 of Section I – Instructions to Proposers, and in accordance with ITP 7.1 and ITP 7.6, further to the requests for clarification received from prospective Proposers and to Amendment No. 1 issued on September 26, 2026, the Ministry of Communications and Technology (MoCT) hereby issues amendments to the referenced provisions in the Request for Proposals that have been listed in the table below.

2. Pursuant to ITP 23 (Deadline for Submission of Proposals) of Section I – Instructions to Proposers, and to give Proposers reasonable time to take this Amendment into account in preparing their Proposals, the deadline for submission of Proposals is extended to November 3, 2026 at 1.00 pm, and the opening of Proposals to November 3, 2026 at 1.00 pm (Mogadishu, Somalia Local Time), as set out under PDS ITP 23.1 and ITP 26.1 in the table below. All other provisions of the RFP document, as previously amended by Amendment No. 1, remain unchanged, and this Amendment No. 2 forms an integral part of the RFP document.

Section / Clause Reference in the RFP and Page No. (1)	**Original Provision in the RFP (2)**	**Provisions as Amended (3)**
Section II. Proposal Data Sheet (PDS) ITP 23.1 (page no. 48)	**For <u>Proposal submission purposes</u> only, the Purchaser's address is:** **To:** Procurement Office, Project Implementation Unit (PIU) Eastern Africa Regional Digital Integration Project (EA-RDIP) E-mail address: procurement.ea-rdip@moct.gov.so Address: Ground Floor, at the Ministry of Communications and Technology (MoCT), Jamhuuriya road, Boondheere district, Mogadishu. Country: Somalia. **Attention:** The Director General of National Communications Authority (NCA), FGS, Mogadishu, Somalia. **The Proposals must be submitted no later than:** **Date: October 20, 2026** **Time:** 1.00pm (Mogadishu, Somalia local time)	**For <u>Proposal submission purposes</u> only, the Purchaser's address is:** **To:** Procurement Office, Project Implementation Unit (PIU) Eastern Africa Regional Digital Integration Project (EA-RDIP) E-mail address: procurement.ea-rdip@moct.gov.so Address: Ground Floor, at the Ministry of Communications and Technology (MoCT), Jamhuuriya road, Boondheere district, Mogadishu. Country: Somalia. **Attention:** The Director General of National Communications Authority (NCA), FGS, Mogadishu, Somalia. **The Proposals must be submitted no later than:** **Date: November 3, 2026** **Time:** 1.00pm (Mogadishu, Somalia local time)

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Section / Clause Reference in the RFP and Page No. (1)	Original Provision in the RFP (2)	Provisions as Amended (3)
Section II. Proposal Data Sheet (PDS) ITP 26.1 (page nos. 48 -49)	The Proposal opening shall take place at: Address: **Conference Room of Project Implementation Unit (PIU) at Ministry of Communications and Technology (MoCT), Jamhuuriya road, Boondheere district, Mogadishu.** **Country: Somalia.** **Date: October 20, 2026** **Time:** 1.00pm (Mogadishu, Somalia local time)	The Proposal opening shall take place at: Address: **Conference Room of Project Implementation Unit (PIU) at Ministry of Communications and Technology (MoCT), Jamhuuriya road, Boondheere district, Mogadishu.** **Country: Somalia.** **Date: November 3, 2026** **Time:** 1.00pm (Mogadishu, Somalia local time)
Section VII – Purchaser's Requirements Fixed Monitoring Stations, specification table, Item 2 ("Power and UPS") (page no. 136)	**Requirement:** Power and UPS **Specification:** Provide stable power supply, surge protection, and UPS facilities suitable for continuous monitoring operation.	**Requirement:** Power and UPS **Specification:** Provide stable power supply, surge protection and UPS facilities suitable for continuous monitoring operation, with a UPS autonomy of not less than eight (8) hours for the fixed station. Mains power and the site's standby power are provided by the Purchaser at the site distribution point; the Supplier provides the connection from that point. No generator is required.
Section VII – Purchaser's Requirements Network Control Centre, requirements table, row "Hardware" (page no. 140)	**Requirement:** Hardware **Specification:** Provide operator workstations, server or appliance infrastructure as required, display capability, and associated peripherals for the control centre.	**Requirement:** Hardware **Specification:** Provide operator workstations, server or appliance infrastructure as required, display capability, UPS for the NCC equipment, server rack(s), network equipment and associated peripherals including one printer, and operator furniture (consoles/desks and chairs) for the operator positions proposed. The Purchaser provides the NCC room at its premises, with mains power and air-conditioning.

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Section / Clause Reference in the RFP and Page No. (1)	Original Provision in the RFP (2)	Provisions as Amended (3)
Section VII – Purchaser's Requirements Services, Warranty and Maintenance, table row "Training" (page no. 142)	**Requirement:** Training **Specification:** Supplier shall deliver the agreed Level 1 training and provide training materials for NCA use.	**Requirement:** Training **Specification:** The Supplier shall deliver Level 1 training as one hands-on course on the complete supplied system (NCC, fixed station and mobile unit), in English, in Mogadishu at NCA premises and on the supplied equipment, for not less than ten (10) working days for up to ten (10) NCA trainees, covering system operation, spectrum monitoring and measurement, direction finding and geolocation including field transmitter hunting, system administration and basic troubleshooting, and report generation. Training materials (in English, electronic and printed) remain with NCA. Completion is evidenced by attendance records, an end-of-course assessment and the Purchaser's written acceptance in accordance with SCC GCC 12.1(e) of the issued RFP document. No offshore training is required. Mobile Monitoring System, Item 16 (page 139) shall be read with this provision.
Section VII – Purchaser's Requirements Vendor Neutrality and Avoidance of Vendor Lock-In, "1. Reporting", item (a) (page no. 143)	a. The Supplier shall provide annual calibration of monitoring receivers and DF antennas during the post-warranty period, in accordance with the manufacturer's recommended calibration cycle and ITU-R SM.1530. Calibration certificates shall be provided to NCA after each calibration cycle.	a. The Supplier shall provide annual calibration of monitoring receivers and DF antennas during the post-warranty period, in accordance with the manufacturer's recommended calibration cycle and calibration procedures and the ITU Handbook on Spectrum Monitoring. Calibration certificates shall be provided to NCA after each calibration cycle.
Section VII – Purchaser's Requirements Maintenance And Post-Warranty Support Obligations (page nos. 145-146)	i. Encryption in transit: all management, control, monitoring, and backhaul traffic shall be encrypted using TLS 1.3 (or, where TLS 1.3 is not supported by an existing NCA system, TLS 1.2 with strong cipher suites). Use of TLS 1.0, TLS 1.1, SSLv3, or any deprecated protocol is forbidden.	i. Encryption in transit: all HTTP/HTTPS, REST/API, web and management interfaces shall use TLS 1.3 (or, where TLS 1.3 is not supported by an existing NCA system, TLS 1.2 with strong cipher suites). Non-HTTP application traffic between the fixed station, the mobile unit and the Network Control Centre (measurement, tasking, I/Q and control protocols) shall be protected by network-level encryption through IPsec tunnels using AES-256-GCM, SHA-256 or stronger integrity and IKEv2 with Diffie-Hellman group 14 or higher, or by TLS 1.3/1.2 where the protocol supports it. Use of TLS 1.0, TLS 1.1, SSLv3 or any deprecated protocol or cipher is forbidden.

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Section VII – Purchaser's Requirements Measurable Geolocation Performance Requirements – the entire block printed on pages 147–149 (items, sub-headings 1 to 4, introductory paragraph and section title), which in the issued RFP appears under the heading "Integration Requirements with Existing NCA Systems" owing to the printing order	a. Acceptance testing shall include a minimum of 10 reference emissions at agreed test locations, with results documented in a signed Geolocation Performance Acceptance Report. b. Geolocation results shall be exportable in KML, GeoJSON, and CSV formats, and shall be suitable for inclusion in evidentiary reports submitted to the NCA, the Regulator, or law-enforcement authorities. c. Each geolocation result shall record emitter frequency, modulation, signal level, estimated position with confidence ellipse / CEP value, contributing nodes, geolocation method used, time stamp (UTC), and operator identifier. **1. Geolocation Reporting and Evidence:** a. Hybrid AoA/TDoA solution: the system shall support single-station AoA-only geolocation and multi-station hybrid AoA/TDoA geolocation, with automatic selection of the optimal method based on signal characteristics and node geometry. b. AoA geolocation accuracy using two or more nodes: not worse than 200 metres CEP-50 for 80 percent of test emissions in suburban / open environment. c. AoA bearing accuracy: not worse than 5 degrees RMS for signals above the DF threshold within the design frequency range. **2. Angle of Arrival (AoA) Geolocation Performance (per ITU-R SM.1885):** a. Time synchronisation between fixed nodes: shall be better than 50 nanoseconds relative to a common reference (e.g., GNSS-disciplined oscillator with holdover capability). b. TDoA solution convergence time: not greater than 5 seconds for stationary emitters with stable signal characteristics. c. TDoA geolocation accuracy (suburban / open environment): not worse than 50 metres CEP-50 for 80	**MEASURABLE GEOLOCATION PERFORMANCE REQUIREMENTS** The Supplier shall propose equipment and methods that achieve the following minimum measurable geolocation performance targets. Compliance shall be demonstrated during Site Acceptance Testing (SAT) using reference emitters at agreed test locations within the Mogadishu coverage area, in accordance with the test method in sub-section 5 below, with results recorded in the acceptance test report. All values are minimum requirements; proposals offering higher accuracy shall be evaluated accordingly under the rated criteria. For Phase 1 (one fixed station and one mobile unit), Site Acceptance Testing of geolocation accuracy shall be based on the AoA requirements (single-station bearing accuracy and two-node AoA accuracy). The TDoA capability (time synchronisation, I/Q capture and hybrid AoA/TDoA processing at the NCC) shall be demonstrated functionally at SAT with the two supplied nodes; the TDoA accuracy targets apply when three or more receiving nodes are available and will be verified at that time. **1. Geolocation Reporting and Evidence:** a. Acceptance testing shall include a minimum of 10 reference emissions at agreed test locations, with results documented in a signed Geolocation Performance Acceptance Report. b. Geolocation results shall be exportable in KML, GeoJSON, and CSV formats, and shall be suitable for inclusion in evidentiary reports submitted to the NCA, the Regulator, or law-enforcement authorities. c. Each geolocation result shall record emitter frequency, modulation, signal level, estimated position with confidence ellipse / CEP value, contributing nodes, geolocation method used, time stamp (UTC), and operator identifier. **2. Angle of Arrival (AoA) Geolocation Performance (per ITU-R SM.854 and ITU-R SM.2060; on-site verification per ITU-R SM.2097):** a. Hybrid AoA/TDoA solution: the system shall support single-station AoA-only geolocation and multi-station hybrid AoA/TDoA geolocation, with automatic selection of the optimal method based on signal characteristics and node geometry. b. AoA geolocation accuracy using two or more nodes: not worse than 200 metres CEP-50 for 80 percent of test emissions in suburban / open environment.

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	percent of test emissions above the operational threshold. d. TDoA geolocation accuracy (urban / dense environment): not worse than 150 metres CEP-50 for 80 percent of test emissions above the operational threshold, with at least three receiving nodes participating in the solution. **3. Time Difference of Arrival (TDoA) Geolocation Performance (per ITU-R SM.1800):** a. Direction-finding (DF) sensitivity: shall meet the thresholds defined in ITU-R SM.1530 for the relevant antenna class and frequency band. b. Field-strength measurement accuracy: not worse than +/-3 dB for signals above the system noise floor, in accordance with ITU-R SM.1267 measurement procedures. c. Frequency measurement accuracy: not worse than 1 ppm across the operating temperature range. d. Instantaneous bandwidth (IBW): not less than 80 MHz for fixed stations and not less than 80 MHz for mobile stations. e. Frequency range: not less than 30 MHz to 8 GHz for both fixed and mobile stations, with continuous coverage across the range. **4. Frequency Coverage and Measurement Performance (per ITU-R SM.1530 and ITU-R SM.1267):** The Supplier shall propose equipment and methods that achieve the following minimum measurable geolocation performance targets. Compliance shall be demonstrated during Site Acceptance Testing (SAT) using reference emitters at agreed test locations within the Mogadishu coverage area, with results recorded in the acceptance test report. All values are minimum requirements; proposals offering higher accuracy shall be evaluated accordingly under the rated criteria. **MEASURABLE GEOLOCATION PERFORMANCE REQUIREMENTS**	c. AoA bearing accuracy: not worse than 5 degrees RMS for signals above the DF threshold within the design frequency range. **3. Time Difference of Arrival (TDoA) Geolocation Performance (per ITU-R SM.854 and Report ITU-R SM.2211):** a. Time synchronisation between receiving nodes (fixed and mobile): shall be better than 50 nanoseconds relative to a common reference (e.g., GNSS-disciplined oscillator with holdover capability), so that any node may contribute to a TDoA solution in the hybrid AoA/TDoA architecture. b. TDoA solution convergence time: not greater than 5 seconds for stationary emitters with stable signal characteristics. c. TDoA geolocation accuracy (suburban / open environment): not worse than 50 metres CEP-50 for 80 percent of test emissions above the operational threshold. d. TDoA geolocation accuracy (urban / dense environment): not worse than 150 metres CEP-50 for 80 percent of test emissions above the operational threshold, with at least three receiving nodes participating in the solution. **4. General Direction-Finding and Measurement Performance (per ITU-R SM.377, ITU-R SM.378, ITU-R SM.2096 and the ITU Handbook on Spectrum Monitoring):** a. Direction-finding (DF) sensitivity: shall be measured in accordance with ITU-R SM.2096. The Proposer shall state the DF sensitivity of the offered system for each antenna class and frequency band; the stated values will be verified at factory acceptance testing. b. Field-strength measurement accuracy: not worse than ±3 dB for signals above the system noise floor, in accordance with ITU-R SM.378, applied to the complete measurement system including calibrated antenna factors under the test conditions of the approved SAT procedures. c. Frequency measurement accuracy: not worse than 1 ppm across the operating temperature range. d. Instantaneous bandwidth (IBW): not less than 80 MHz for fixed stations and not less than 80 MHz for mobile stations. e. Frequency range: not less than 30 MHz to 8 GHz for both fixed and mobile stations, with continuous coverage across the range. **5. Site Acceptance Test Method for Geolocation:**

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	(Block reproduced as printed in the issued RFP, in which each numbered sub-heading and the section title appear below the items to which they relate.)	a. Reference emissions: not fewer than ten (10), at locations agreed in the SAT procedures within the Mogadishu coverage area, of which at least six (6) in suburban / open and at least four (4) in urban / dense environment. Emitter positions shall be surveyed by GNSS (accuracy 5 metres or better) and shall not be disclosed to the Supplier's operators during the test. b. Frequencies and signals: at least two (2) emissions in each of the bands 30–300 MHz, 300 MHz–1 GHz, 1–3 GHz and 3–8 GHz, using narrowband analogue, narrowband digital and wideband digital signals representative of regulatory use; each emission shall be continuous for the duration of its measurement. c. Distances and geometry: 1 to 10 km from the fixed station in suburban / open and 0.5 to 5 km in urban environment; for two-node AoA, a bearing crossing angle between 30 and 150 degrees; signal level at each node above the DF threshold stated by the Supplier. d. Position fixes: not fewer than twenty (20) independent position fixes per reference emission, at intervals of not less than 5 seconds. The CEP-50 of an emission is the median radial error of its valid fixes from the surveyed emitter position; the bearing accuracy of an emission is the RMS of the bearing errors of its valid fixes at each node. e. Acceptance limits (Phase 1): two-node AoA accuracy not worse than 200 metres CEP-50 (suburban / open); AoA bearing accuracy not worse than 5 degrees RMS at each node; the TDoA limits (50 metres suburban / open; 150 metres urban / dense) apply when three or more receiving nodes are available. A requirement is met when at least 80 percent of the reference emissions (at least 8 of 10) satisfy the applicable limit. f. Invalid measurements and outliers: fixes taken while the signal was below the DF threshold, during loss of GNSS synchronisation or of a node link, or while the emitter was not transmitting are invalid; they shall be excluded and the measurement repeated. Of the valid fixes of an emission, not more than ten percent (10%) having a radial error greater than three (3) times the median may be rejected as outliers, each rejection being recorded in the test report. An emission that fails may be re-tested once after documented corrective action. g. Record: all fixes, exclusions, rejections and results per emission shall be recorded in the signed Geolocation Performance Acceptance Report. Note: in the issued RFP the sub-headings of this part of Section VII are printed below the items to which they relate. The amended text above supersedes the

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Section / Clause Reference in the RFP and Page No. (1)	Original Provision in the RFP (2)	Provisions as Amended (3)
		block in its entirety and shall be read in the order set out above.
Section IX – Special Conditions of Contract SCC GCC 7.3, item (d) (page no. 240)	(d) annual calibration of monitoring receivers and direction-finding antennas in accordance with ITU-R SM.1530 and the manufacturer's recommended calibration cycle;	(d) annual calibration of monitoring receivers and direction-finding antennas in accordance with the manufacturer's calibration procedures, the ITU Handbook on Spectrum Monitoring and the manufacturer's recommended calibration cycle;
Section IX – Special Conditions of Contract SCC GCC 29.10, item (d) (page no. 248)	(d) The Supplier shall maintain a local spare-parts holding in Mogadishu sufficient to meet the Critical and High severity resolution targets, and shall provide annual calibration of monitoring receivers and direction-finding antennas in accordance with ITU-R SM.1530.	(d) The Supplier shall maintain a local spare-parts holding in Mogadishu sufficient to meet the Critical and High severity resolution targets, and shall provide annual calibration of monitoring receivers and direction-finding antennas in accordance with the manufacturer's calibration procedures and the ITU Handbook on Spectrum Monitoring.

3. The amended provisions as listed in **column (3)** of the above table supersede all the original provisions of same clauses in the issued RFP document.
4. **Order of precedence:** In the event of any inconsistency, ambiguity or conflict between the provisions of the original RFP document, Amendment No. 1 issued on September 26, 2026, and this Amendment No. 2, the following order of precedence shall apply: (a) this Amendment No. 2; (b) Amendment No. 1; and (c) the original RFP document. A provision of a later-issued Amendment shall prevail over the corresponding provision of an earlier Amendment and of the original RFP document, but only to the extent of such inconsistency.
5. All other terms, conditions and provisions of the RFP document, as previously amended by Amendment No. 1, remain unchanged and in full force and effect. This Amendment No. 2 forms an integral part of the RFP document and shall be read and construed together with it. Proposers shall take this Amendment into account in the preparation of their Proposals.

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