Islamic Emirate of Afghanistan
Ministry of Communications and IT
IT General Department

Request for Information (RFI)

For the Establishment of Ground Station and Leasing of Satellite Capacity to Support National Telecommunication Services

RFI No: MCIT/SAT/2025/12
Date: 2025/12/07

Introduction

The Ministry of Communications and Information Technology (MCIT) of Afghanistan aims to deliver satellite-based services, including broadband Internet, cellular backhaul connectivity (3G and 4G), VSAT services, emergency connectivity and television and radio broadcasting to underserved and remote areas across Afghanistan. To achieve this, MCIT plans to lease satellite transponders from qualified satellite service international operators to support critical national telecommunication and establish a standardized Satellite Ground Station (Hub Station) to manage and distribute these services effectively.

Project overview

This Request for Information (RFI) seeks detailed inputs from qualified and experienced vendors and solution providers regarding two key areas. And vendors may respond to one or both parts:

(a) National Hub / Ground Station Establishment

The design, supply, installation, commissioning and ongoing support of a national-level hub Station. The station must support services such as VSAT connectivity, Internet backhaul, VoIP, TV/radio broadcasting, and secure data transmission for government and critical infrastructure. The purpose of this RFI is to gather comprehensive technical, operational, and financial information to guide the development of a scalable, reliable, and secure Hub Station capable of meeting Afghanistan's current and future communication needs.

(b) Leasing Scalable Satellite Capacity

The provision of scalable satellite capacity to support national telecommunication services across Afghanistan. This includes ensuring reliable connectivity for mobile networks, internet access, broadcasting services and secure data transmission for government and critical infrastructure. The leasing model should be flexible and scalable, starting with a minimum capacity of one transponder (up to 33 MHz) and expanding to approximately 200 MHz based on demand. Customers will use their own antennas, and the service provider must ensure seamless migration at the satellite end.

Project Objectives

The primary objectives of the Satellite Connectivity and Hub Station Project are as follows:

a) Connectivity & Coverage

- **Enhance Connectivity:** Provide reliable satellite-based connectivity to remote, rural, and underserved areas across Afghanistan.
- **Enable Nationwide Coverage:** Deliver seamless Internet, VoIP, mobile backhaul, and broadcasting services throughout the country using leased satellite capacity.
- **Bridge the Digital Divide:** Address communication gaps where terrestrial infrastructure is unavailable or unreliable.

b) Infrastructure & Scalability

- **Establish a Robust Hub Station:** Deploy a fully equipped satellite hub station supporting Ku-band operations, with provisions for future Ka-band upgrades.
- **Scalable Capacity:** Implement a flexible capacity ramp-up model, starting at 1 transponder (up to 33 MHz) and scaling to approximately 200 MHz as demand increases.
- **Implement a Complete VSAT System:** Ensure robust network infrastructure to support VSAT connectivity for diverse applications and users.
- **Plan for Scalability:** Design all systems to accommodate future growth in service demand and capacity expansion.

c) Key Services to Support

- **Support Mobile Networks**: Enable mobile telephony backhaul (3G/4G) to expand cellular coverage nationwide.
- **Improve Internet Access:** Provide broadband internet services for individuals, businesses, institutions, and government agencies.
- **Facilitate Broadcasting:** Support uplink capabilities for television and radio broadcasting services.
- **Deliver Telecom Backbone:** Provide IP backbone and backhaul services to telecom operators and Internet Service Providers (ISPs).
- **Disaster Recovery & Emergency Communications:** Ensure resilient connectivity during crises, natural disasters, and other emergencies through rapid-deploy satellite services.

d) Compliance & Security

- **Ensure Compliance and Interoperability:** Adhere to international standards (ITU, ETSI) and ensure compatibility with modern satellite systems.
- **Secure Critical Services:** Support secure and resilient data transmission for government, public safety, and critical infrastructure applications.

Requirements

MCIT seeks both satellite capacity and ground station solutions, and vendors may respond to one or both parts.

Part A: Satellite Capacity

1. (Vendors who can provide satellite capacity should respond to this section.)

- **Ownership**: Bidder should be a satellite owner and have more satellites. The bidder should have multi-orbit satellites to offer if needed by MCIT.
- **Coverage Area**: Excellent footprint covering all of Afghanistan, including border regions.
- **Satellite Lifetime**: Proposed satellites must have a minimum remaining lifetime of 5 years.
- **Band Type**: The bidder to specify and justify the use of Ku-band, considering cost, availability, and performance. The bidder should have a global experience of Teleport management and should be capable of working with MCIT to work on cost efficient and optimized network and solution.
- **Bandwidth Requirement**:
    - Initial capacity: 1 Transponder (up to 33 MHz).
    - Scalable up to 200 MHz (or 5–7 transponders) on a ramp-up basis.
    - The bidder should be capable of offering and breaking this 200MHz capacity to offer in C, Ku and Ka for different projects. Commercials can be discussed separately on these spectrums if needed.
    - Flexible bandwidth allocation to accommodate incremental demand increases.
- **Lease Duration**: 3–5 years, with provisions for annual amendments to adjust capacity and terms.
- **Required Services**: VSAT, cellular backhaul, broadband internet, TV and radio broadcasting, and emergency communications.
- **Migration Support**: As customers will use their own antennas, the service provider must provide technical support for migration at the satellite end, including configuration and integration assistance.
- **Future Ground Station**: The service provider must ensure compatibility with MCIT's planned ground station for future capacity landing. The bidder should be capable to project managing the Ground station and baseband vendor selection process. The bidder should be capable of offering turnkey network management if required.

2. Security Standards

- End-to-End Encryption for data confidentiality
- Service continuity and data protection assurance
- Cybersecurity Compliance: Adhere to international cybersecurity principles for satellite communication systems (e.g., ITU, ISO 27001).

3. Service Availability Assurance

- 99.9% Service Level Agreement (SLA)
- 24/7 technical support
- Defined response time for maintenance and issue resolution
- Reliability and redundancy requirements (99.9% uptime).

4. Eligibility Criteria

- Be the owner of the satellite and hold a valid license for providing satellite telecommunication services.
- Comply with international telecommunications standards (e.g., ITU, FCC, ISO 27001).
- Demonstrate experience in delivering satellite services in challenging environments, preferably in regions similar to Afghanistan.

5. Financial Requirements

- **Pricing Structure**:
  - Ramp-up model, with pricing based on leased capacity (per MHz or Mbps).
  - Options for quarterly or annual lease payments.
- **Unit Pricing**: Provide clear cost per MHz or Mbps on a monthly basis, with scalability adjustments.
- **Payment Terms**: Outline payment schedules, including milestones or advance payments, if applicable.
- **Additional Costs**: Include a breakdown of setup fees, migration support, maintenance, and training costs.
- **Cost Transparency**: Provide detailed pricing for initial 1 MHz and incremental increases up to 200 MHz.
- Delivery, shipment and traveling expenses based on DDP.

Part B: Satellite Hub Station (Ground Station)

(Vendors who can design, supply, and support a ground station should respond to this section.)

1. Technical Capabilities

- **System Design**:

- Provide detailed design specifications for the proposed Hub Station, including system architecture, block diagrams, and integration with leased satellite transponders.
- Specify antenna size and type (e.g., 7.3m, 9m, or larger; motorized or fixed; Ku-band with Ka-band upgrade capability) and its ability to support multi-satellite operations for connectivity with multiple satellite systems simultaneously or as needed.
- Detail the capability to handle multiple frequency bands (Ku-band mandatory, Ka-band optional) and any limitations or considerations for band switching.

- **Equipment Specifications**:
  - Submit a comprehensive equipment list, including but not limited to: Block Upconverter (BUC), Low Noise Block Downconverter (LNB), Orthomode Transducer (OMT), satellite modems, Indoor Units (IDUs), routers, switches, Network Management System (NMS), Uninterruptible Power Supply (UPS), and associated cabling.
  - Specify equipment brands, models, and compliance with industry standards (e.g., DVB-S2/S2X, IP/MPLS).
  - Describe redundancy features (e.g., hot-standby configurations, failover mechanisms) to ensure high availability and service continuity.
- **Power and Environmental Systems**:
  - Detail power systems, including primary and backup power solutions (e.g., diesel generators, solar power, battery backups).
  - Describe environmental control systems, including cooling, grounding, lightning protection, and surge suppression, to ensure reliable operation in Afghanistan's climate and terrain.
- **Monitoring and Security**:
  - Outline monitoring and management capabilities, including remote access, real-time system alerts, and performance analytics.
  - Describe cybersecurity measures, such as encryption protocols, firewalls, and intrusion detection systems, to protect data and infrastructure.
  - Specify disaster recovery mechanisms, including data backup and restoration processes.
- **Interoperability and Standards**:
  - Confirm compliance with international standards (e.g., ITU, ETSI, TIA) and interoperability with major satellite operators and transponder providers.
  - Provide details on supported modulation and coding schemes (e.g., QPSK, 8PSK, 16APSK) and their impact on bandwidth efficiency.

2. Installation and Support

- **Site Preparation:**

    - Specify civil work requirements, including foundation design, site surveying, and environmental considerations for the Hub Station.
    - Address logistical challenges for equipment delivery and installation in Afghanistan's diverse terrain and infrastructure conditions.
- **Project Timeline:**
    - Provide an estimated timeline for key phases: Site preparation → equipment delivery → installation → integration → testing → commissioning.
    - Include milestones for interim deliverables and final acceptance testing.
- **Support Services**:
    - Describe on-site technical support, including preventive and corrective maintenance plans.
    - Detail remote monitoring, diagnostics, and troubleshooting capabilities, including response times for critical issues.
    - Specify Service Level Agreements (SLAs) for support and maintenance, including uptime guarantees and mean time to repair (MTTR).

3. Construction

- **Civil Works and infrastructure:**
    - Provide structural designs for buildings, shelters, and antenna foundations, ensuring seismic stability and compliance with local conditions and codes.
    - Include layouts for essential facilities such as equipment rooms, control centers, and storage areas.
- **Utilities:**
    - Specify electrical wiring, grounding, and backup power integration.
    - Address water supply, drainage, and staff facilities (rest areas and sanitation).

- **Security and Safety:**
    - Define physical security measures (fencing, access control, CCTV, fire protection).
    - Ensure compliance with environmental safeguards and international health and safety standards (e.g., ISO 45001).

Note: The above points outline the minimum requirements. Vendors are encouraged to propose additional or alternative construction solutions that enhance reliability, safety, cost-effectiveness, or long-term sustainability of the Hub Station.

4. Experience and References

- **Relevant Experience**:

    - Provide case studies or descriptions of similar satellite ground station projects completed, preferably in regions with comparable geographic or operational challenges.
    - Highlight experience with Ku-band and Ka-band systems, VSAT networks, and broadcasting uplinks.
- **Company and Team Profile**:
    - Submit a company profile detailing organizational experience, certifications, and partnerships with satellite operators or equipment manufacturers.
    - Provide qualifications and certifications of key personnel assigned to the project.

5. Cost Estimates

- **Capital Expenditure (CAPEX)**:
    - Provide a detailed breakdown of estimated costs for equipment, installation, civil works, and commissioning.
    - Include any licensing or software subscription costs.
- **Operational Expenditure (OPEX)**:
    - Estimate ongoing costs, including maintenance, power consumption, staffing, and support services.
    - Provide cost projections for 3–5 years of operation.
- **Financing Models**:
    - Propose potential financing options, such as vendor financing, leasing, or public-private partnerships, to support project implementation.
    - Indicate any opportunities for cost optimization or phased deployment.

Part C: Training & Capacity Building Requirements

Vendors must provide comprehensive training and capacity building for **at least 5 Afghan engineers**, ensuring they gain the skills to independently operate, maintain, and optimize the satellite network and Hub Station.

1. Training Programs

- **Core Areas**:
    - Satellite operations and service management.
    - Maintenance and troubleshooting of satellite systems and Hub Station equipment.
    - Performance monitoring, reporting, and service optimization.
    - Cyber security practices for satellite communications and network infrastructure.
- **Training Formats**: Specify delivery method (in-person, virtual, or hybrid) and duration of each program.

- **Practical Sessions**: Include hands-on training, live demonstration, and scenario-based exercises.

2. Knowledge Transfer

- Provide a structured plan for knowledge transfer to ensure local staff can **independently operate and maintain** the Hub Station and satellite services after project completion.
- Supply complete documentation, including system manuals, operation guides, and troubleshooting procedures.
- Offer ongoing vendor support (remote and/or on-site) to reinforce skills and ensure sustainable knowledge retention.

Part D: Submission Requirements and Response Format

Vendors are requested to provide information and supporting documents as part of this RFI. Responses should be structured according to the two areas below. Vendors may respond to one or both sections as applicable.

1. Satellite Capacity

- Company profile, including registration, licensing, and proof of satellite ownership.
- Technical information with satellite coverage footprint maps and technical specifications.
- Detailed implementation plan, including timelines for deployment, migration support, and scaling.
- SLA template and escalation matrix for issue resolution.
- List of current and past similar contracts, with references.
- Risk management strategy for service disruptions and security threats.
- Capacity-building and localization plan for training Afghan engineers.
- Plan for compatibility with MCIT's future ground station.

2. Hub/Ground Station

- **Cover Letter**:
  - A brief introduction to the vendor, expressing interest in the project and summarizing key qualifications.
- **Company Profile**:
  - Overview of the company, including years in business, relevant experience, and certifications.
- **Technical Information:**

    - Hub Station design, including architecture, block diagrams, antenna specs, and multi-satellite capability.
    - Equipment list with compliance standards and redundancy (BUC, LNB, modems, routers, NMS, UPS, etc.).
    - Power, environmental, and security systems (backup power, cooling, cybersecurity, disaster recovery).
    - Monitoring and interoperability with international standards and multiple satellite operators.
- **Attachments**:
    - Include supporting materials, such as system diagrams, equipment datasheets, case studies, and certifications.
    - Provide a list of all attachments with brief descriptions.

Part F: Submission Instructions

All responses must be submitted electronically in PDF format to:

- Enayat.atal11@mcit.gov.af and Enayat.atal11@gmail.com
- Ministry of Communications and Information Technology (MCIT)
  Kabul, Afghanistan
- +93790090807

Subject line:
RFI Response: Satellite Capacity & Hub Station – [Vendor Name] or
Response to MCIT RFI – Satellite Capacity – [Vendor Name] or
Response to MCIT RFI – Hub Station – [Vendor Name]

Timeline

- **RFI Release Date: 14 December 2025**
- **Deadline for Questions: 14 January 2026**
- **RFI Response Submission Deadline: 29 January 2026**

Vendors may submit questions via email to enayat.atal11@mcit.gov.af and enayat.atal11@gmail.com with the subject line "RFI Questions – Satellite Ground Station and/or Satellite Capacity– [Vendor Name]" by the deadline specified above.

Additional Notes

- All documents, communications, and shared data under this RFP must be treated as confidential. Vendors may not disclose information to third parties without written consent from MCIT.