

TERMS OF REFERENCE (TOR)

ICT Infrastructure and Systems Design Specialist (Consultant)

1. Background

The Federal Board of Revenue (FBR) is establishing Digital Enforcement Stations (DES) across key locations under the World Bank–financed Pakistan Raises Revenue Project (PRRP). These stations require deployment of advanced and integrated technological solutions including robust ICT infrastructure and sophisticated ELV/SCADA systems. Successful procurement and implementation of these systems require highly detailed, accurate, and technically sound specifications. A dedicated ICT Infrastructure and Systems Design Specialist is required to lead the technical design, documentation (TORs), and support the subsequent procurement process to ensure all acquired systems meet operational requirements and World Bank standards.

2. Objective of the Consultancy

The primary objective is to provide expert technical consultancy to the PMO-DES for comprehensive design, system architecture planning, preparation of detailed technical specifications (TORs/SOWs/BoQs) for all ICT and ELV/SCADA packages for DES. The Specialist will also provide critical technical support during the bid(s) evaluation phase.

3. Position Summary

Position Title	ICT Infrastructure and Systems Design Specialist (Consultant)
Number of Position	01
Reports to	Project Director/Program Manager, PMO-FBR
Location	Islamabad
Type of Engagement	Contract Basis – Full time
Duration	6 months (extendable upon requirement)

4. Scope of Work and Key Responsibilities

The Specialist shall perform, but not be limited to, the following key tasks:

A. Technical Design and System Architecture

- **ICT Infrastructure Design:** Develop detailed network topology, system architectures, hardware specifications (servers, storage systems, networking gear, firewalls, security devices) and software/ platform requirements for the DES ensuring high availability, scalability and integration with FBR’s central systems.
- **ELV/SCADA Systems Planning:** Design the architecture for Extra Low Voltage (ELV) systems, including surveillance (CCTV, VMS), access control, fire detection, building management systems and automation components. This includes specifying the

SCADA/IoT components required for real-time remote monitoring and control of site utilities and operations.

- **For SCADA:**
- Supervision and control of critical site operations, including real-time monitoring dashboards.
- Management of utility networks such as but not limited to, electricity, HVAC, and communication systems.
- Regulation of system parameters
- Generation and distribution monitoring of power systems, backup power, and energy optimization.

For ELV:

- Security Systems: CCTV, access control, intrusion alarms, motion detection, and perimeter security.
- Life Safety Systems: Fire alarms, emergency lighting, evacuation signaling.
- Automation: Building Management Systems (BMS) for lighting control, HVAC, energy consumption.
- Communications: Intercom systems, structured cabling, communication panels.

B. Procurement Documentation and Specification Development

- **Drafting Technical TORs/SOWs:** Prepare comprehensive, non-restrictive, Terms of Reference (TORs), Statement of Work (SOWs), and Bill of Quantities (BoQs) containing precise and detailed technical specifications for all identified equipment, hardware, software and services related to ICT, ELV/SCADA.
- **Alignment with Standards:** Ensure all technical specifications are aligned with international best practices, relevant industry standards, and are suitable for World Bank procurement regulations (i.e., performance-based specifications where feasible).
- **Requirements Validation:** Serve as the technical focal point between the PMO, end-users, and field engineering teams to validate and finalize all requirements prior to issuance of procurement documents.
- **Project Management Advice:** To provide project management advice and support in creating and refining the PID.

C. Procurement Support

- **Bid Evaluation Criteria Support:** Provide essential technical input to the IT Procurement Specialist and the PMO team to develop objective, quantifiable, and accurate technical bid evaluation criteria.
- **Technical Evaluation:** Participate actively in the technical evaluation committees (TECs) for ICT and technical bids, critically reviewing vendor proposals to confirm technical compliance, suitability, and compatibility with the designed system architecture.

- **Vendor Clarifications:** Assist the PMO in drafting technical responses to queries and clarifications raised by potential bidders during the pre-bid and bidding phases.

D. Safeguards

- **E-Waste Management Support:** Review and provide recommendations for improving the e-waste management SOPs developed by the E&S Specialist.
- **Resource Conservation & Efficiency:** Ensure that the proposed equipment and components are compatible with relevant energy efficiency standards.
- **Alignment with ESMP:** Based on the advice of the E&S Specialist, ensure that the Technical TORs / SOWs incorporate the requirements listed in the Environmental & Social Management Plan (if any), including the Occupational Health & Safety related requirements.
- **Data Privacy:** Provide technical advice to put in place protocols ensuring individual data privacy, especially while repurposing / discarding old equipment.

5. Required Qualifications and Experience

A. Academic Qualifications

- Bachelor's or Master's (at least 16 years of education) degree in Electronics, Computer, Telecommunication Engineering, Computer Science, MIS or related field.
- PEC registration (for engineers) is desirable.
- Relevant Certifications will be preferred.

B. Relevant Professional Experience

- Minimum 10 years of demonstrated experience in the design, planning and implementation of large-scale integrated ICT, Optical Fiber Network and ELC/SCADA systems preferably within government, enterprise or large institutional environment.
- Proven experience in drafting comprehensive and detailed technical Terms of Reference (TORs) and Bills of Quantities (BoQs) for major technology procurements.
- Familiarity with modern data center standards, network security protocols, and industrial control systems (SCADA).
- Familiarity with World Bank procurement regulations is highly desirable.

6. Skills

- Exceptional knowledge of Optical/IP network architecture and data communication standards.
- Excellent documentation, analytical, and system design skills.
- Ability to work effectively across multi-disciplinary teams (Engineering, IT, Finance, Procurement).

- Familiarity with international standards (ISO, IEEE, NFPA, BICSI, etc.)

7. Selection Process

A consultant shall be selected in accordance with the method contained in Section VII, paragraphs, 7.36 and 7.37 of the “World Bank’s Procurement Regulations for IPF Borrowers”, July 2016 [Revised November 2017 and August 2018].