

UNICEF Lebanon Terms of reference (TOR)

PROJECT/ASSIGNMENT TITLE:

Supervisory Control and Data Acquisition (SCADA) for Water and Wastewater facilities in Lebanon.

I. Objectives:

The objective of this assignment is to monitor real-time data, control processes, and store information for analysis and decision-making at multiple water and wastewater facilities in Lebanon. The objective can be achieved by installing and commission SCADA systems / sub-systems for water production stations, water distribution stations, wastewater lifting/pumping stations and at wastewater treatment systems/plants.

SCADA is a control system architecture comprising computers, networked data communications and user interfaces for supervision of equipment and processes. It also covers sensors and other devices, such as programmable logic controllers, which interface with equipment and processes.

The operator interfaces which enable monitoring and the issuing of process commands, such as controller setpoint changes, are handled through the SCADA computer system. The subordinated operations, e.g. the real-time control logic or controller calculations, are performed by networked modules connected to the field sensors and actuators.

The SCADA concept was developed to be a universal means of remote access to a variety of local control modules, which could be from different manufacturers and allowing access through standard automation protocols. In practice, large SCADA systems have grown to become similar to distributed control systems in function, while using multiple means of interfacing with the target facility or plant. It is one of the most commonly used types of industrial control systems. (ref: [SCADA - Wikipedia](#))

In the context of water production, SCADA installation within BWE were able to keep water production facilities running in locations where operators were unable to access their duty stations during the Q4 2024 war.

II. Introduction:

SCADA systems communicate with other devices, such as programmable logic controllers (PLCs) and PID controllers to interact with industrial process plants and equipment. SCADA systems are crucial in control systems engineering. They collect and analyze real-time data from processes, record and log this data, and display it on various graphical interfaces (HMIs). This enables process control operators to supervise (the “S” in SCADA) what is happening in the field, even from a distant location. It also enables operators to control (the “C” in SCADA) these processes by interacting with the HMI. SCADA systems are prominently used because they have the power to control, monitor, and transmit data in a smart and seamless way.

Water establishment in Lebanon has always depended on human attendants to manage their production and treatment stations. Human attendants are prone to mistakes, absence, among other situational risks that the geographic location of the facilities impose on them. In order to transition from this dependance, the water establishment and many donors are moving into remote control applications,

In line with the above direction, there is a robust need for implementing SCADA system for the four national water establishments to achieve optimal operational efficiency.

III. Purpose of Assignment, Scope of work and End Products/deliverables:

Purpose of assignment:

- To carry out all necessary works which include the supply, installation, testing and commissioning of new equipment and the rehabilitation/maintenance of the existing equipment related SCADA with the facilities of the four water establishments.
- To ensure fast delivery of the above works where needed by Water Establishment, in response to unexpected needs due to sudden break down or bad functioning.
- The scope of work depends on the needs to install new SCADA systems; these needs would be raised by Water Establishments throughout the year, so the supplier may be ready to high and sudden variations of demands.

Scope of Work:

Multiple types of rehabilitation, repairs, upgrades and new installation are covered under this LTA framework with a national coverage to supporting the 4 WEs, Municipalities and Unions of Municipalities.

The services under this LTA consist of carrying out all necessary works which include the supply, installation, testing and commissioning of new equipment and the rehabilitation/maintenance of the existing equipment. All works should comply with the attached BOQ (Annex 1).

- Supply/install/rehabilitate/maintain of the Instrumentation and control equipment such as: Variable Frequency Drives (VFDs), Power Backup Systems, Cables, Enclosures, HMI Panels, Measurement and Monitoring Devices, Grounding Systems, Environmental and Safety Devices, Additional Components, Engineering and Programming Services, PLC Controllers, Workstations and SCADA Software, Historian Systems, Networking and Communication
- Development of a training module per installed system
- Processing handover to Government bodies (WEs, MoEW, Municipalities)

It's the contractor responsibility to ensure proper functioning and integration of any works done with the existing systems. Furthermore, all works executed by the contractor are subject to the satisfaction and approval of UNICEF Engineer or his designee.

End Products/Deliverables:

- The Contractor shall inspect the site/s prior to commencing works in order to determine the specific of works required. Any issues will be raised by Contractor at time of notice and resolved with Client prior to any change in agreed works.
- The Contractor shall ensure that all required equipment and materials will fit into the existing system (control rooms, stations, etc.) and that the work can be successfully undertaken in a timely manner.
- The Contractor shall ensure the supply and installation of all materials, including all associated tradesmen and labor, according to the agreed design specifications and agreed schedule of works.
- The Contractor shall ensure all works are undertaken in a manner to ensure the safety of contracted staff and approved site visitors. Any health and safety issues observed onsite must be raised immediately by the Consultant to UNICEF and agreed action taken to resolve the issue. The safety of the general public, pedestrians and vehicles shall be ensured at all times with the provision of all necessary cautionary signage, barricades and lighting. The safety of workmen, Consultants, and visitors shall be ensured at all times, including the provision of all necessary safety gears, access scaffold and stairs. Inadequate site safe access for installation of the works and inspections will result instructions to cease works and rectification notices being issued by UNICEF and or Consultants.

- The Contractor shall submit a detailed methodology of working (Method Statement) for all operations on site.
- The Contractor shall submit a detailed scheduled program for the works to be executed.
- Present material/equipment submittals, for approval by the client representative. Each submittal document should Data Sheet, Catalogs, Particular Specification, Compliance Sheet, etc.
- Perform preliminary tests, initial operation and preparation for commissioning for all rehabilitated or newly supplied equipment.
- Submit apply a detailed health and safety plan. The contractor shall apply local and international safety regulations and shall take all necessary measures to safeguard all personnel working on the site from any risks which may arise out the works.
- Prepare and submit daily/weekly/monthly reports that reflects the status/progress of the works done.
- Operation and maintenance manuals should be prepared by the contractor and submitted to the Client representative (one hard copy and two soft copies)
- Attend all meetings required by the Client or the Client representative when required.
- Acting in full cooperation with any stakeholder involved in the Project at the request of the Client or his designee.
- Installation and testing of all equipment according to Contract requirements. The results of all tests should be provided to UNICEF at completion of work.
- Handover to government bodies (Municipality / Water Establishment / Ministry) after successful testing including the preparation and submission of all necessary manuals, and as built documentation.
- All warranty and technical guidance documents related to the installed equipment must be provided the relevant Municipality / Water Establishment / Ministry.

Methodology:

- Mobilization plan (workforce, resources and equipment) for the implementation of any project taking into consideration the region's infrastructure and resources must be submitted by the contractor. This will be updated if any changes in works are agreed with Client. The Contractor must liaise with the Clients Consultant throughout the works phase and raise any issues that impede agreed delivery of works.
- Special attention must be given to the kind of transporters/machineries to be used, i.e. in narrow streets and pathways the use of heavy equipment will not be allowed to prevent damages to the houses within such alleys, also in steep area the use of heavy equipment might not be possible.
- Plant, machinery, materials and equipment shall not be left unattended on any workface for any period outside of normal working at no additional costs.
- No excavations shall be undertaken before written approval (permit) from the relevant Municipality (inside villages) or from Ministry of Public works (main roads and highways). All written approval will be provided to the Client prior to works commencement. All excavations will be filled with agreed materials to a quality agreed by the Client. The Contractor shall be responsible for the provision of all necessary permits and approval required by all relevant Authorities. (if applicable)
- Contractor will secure a 'dumping site' that is approved by relevant Municipality and by the Ministry of Environment. This approval should be provided to the client prior to any dumping of materials and a record of 'dumping' must also be provided. No hazardous material is to be disposed of unless approved by the MoEW. (if applicable)
- The Contractor must provide an all risk insurance, workman compensation insurance and third-party liability insurance. A copy of the insurance policies shall be provided to the client along with a list of crew and equipment allocated for each project.
- All material to be supplied by the Contractor shall be inspected by the Client's Consultant within the Contractor's warehouse for approval, and only after written approval on proposed material has

been provided, the Contractor will transport all required items as per the contract to the nominated site. All materials will be stored in an appropriate way as recommended by the manufacturer and the Contractor shall be responsible for such until handing over of works to the WE and/or MoEW on the completion date.

- During all work on site, the Contractor shall not disrupt traffic, traffic control systems, signage, barricades and lighting shall be provided for works in public thoroughfares. The Contractor shall ensure that any and all existing utility services and infrastructure (including potable water supply, sewer lines, telephone cables, electrical supply etc.) are maintained and protected during the installation of the Works. No interruption to existing services will be permitted without prior approval from the relevant Authorities.
- Installation of materials shall be made according to required contract specifications and as instructed by the Client's consultant. No changes will be permitted to specified works or materials unless by prior agreement of the Client.
- Testing on site shall be made according to a preset schedule and in presence of designated Municipality / Water Establishment / Ministry staff and a UNICEF representative.
- All works must be completed within approved schedule based on design specifications, and at the end of the works contractor shall restore the site to a similar condition as prior to works and process the official handing over documentation. Any changes must be agreed upon with UNICEF and the relative Municipality / Water Establishment / Ministry.

Responsibilities

- When working on site, the Contractor is responsible for the occupational health and safety of his crew, and ensure the safety of approved site visitors including, UNICEF, its consultant/contractors and Water Establishment/Ministry employees.
- The Contractor shall coordinate with the UoM/WE/MoEW appointed staff to ensure handover takes place according to agreed schedule and there are no issues after the work is completed.
- When working on site, the Contractor is responsible for the provision of traffic control, safety equipment, signs, diversions, control systems including liaison with third parties for work in public roads and streets and shall include but not limited to:
 - Erecting, maintaining, moving and removal of safety barriers, signs, and traffic control equipment.
 - Establishing and managing road diversions.
 - Watching and lighting
 - Maintaining roads and streets clean and free from construction debris.
 - The Contractor will be responsible for the purchase of specified materials and safeguarding of the purchased materials and equipment during the construction, installation and completion phase until handover is complete.
- Upon the completion and handing over of works, the Contractor will have a 1-year defects liability period. The Contractor will be responsible for resolution (cost of replacement and repair) to the satisfaction of the Client of any issues that may arise within the liability period.
- The Contractor will abide by all security directives provided by the client.
- The contractor shall take photographs before the commencement and after the completion of works form a record of the existing conditions and of the progress of works.

Reporting Requirement

UNICEF will use multiple monitoring tools to report on the conducted works. The monitoring could range from assigning a consultancy firm to individual monitor along with WE/Municipality/ UoM staff who will be reporting on the progress of works done by the contractor and shall submit a final report upon handing over of works.

IV: Technical Evaluation Criteria:

Service Providers are encouraged to ensure they meet the below requested evaluation and qualification criteria. Technical evaluation is composed of 70 points; Minimum successful score for the technical evaluation is 42 points. Technical Proposals must be completed and provided with all relevant support documentation to enable the RFP Evaluation Team to adequately assess and evaluate the Proposal. The grading guideline is as follows:

1. Completeness of the response and overall concord between RFP requirements and proposal – 5 points. (2.5 points each)
2. Company profile showing the company's presence (offices, facilities, etc), concluded projects over the last 5 years & currently running projects, total staffing, and a valid copies of the commercial register and MoF / Vat registration – 5 points. (1 point each)
3. Proof of expertise in similar projects; 5 letters of reference from government bodies, international organizations or implementing bodies within the last 5 years are required – 10 points (2 point per letter)
4. Technical specifications of the hardware, related accessories and fittings as mentioned in the itemized pricing list; 10 points (1 points each category).
5. The bidder is preferably an agent/dealer for the proposed hardware or has a letter that guarantees the availability of spare parts (as applicable) from the agent including a 1-year warranty; failure to provide proof will make the offer rejected – 5 points.
6. The bidder is preferably a certified integrator for the proposed product; proof of such certification must be less than 1 year old at the time of submission; failure to provide proof will make the offer rejected – 10 points.
7. The bidder is preferably a certified integrator for the proposed control system; proof of such certification must be less than 1 year old at the time of submission; failure to provide proof will make the offer rejected – 10 points.
8. 2-page method statement showing adequate equipment to be assigned per project, personnel utilization for every task, and assigned project manager's expertise / resume showing adequate experience in similar projects – 5 points (2.5 points each)
9. Occupational, Environmental Health & Safety Plans (OEHS), including Safe Work Method Statement (SWMS) addressing site safety, access, scaffolding, trenching, works at depth, works at height; risk assessment and mitigation strategy to complete the works, traffic control and management, site specific Occupational Health and Safety Plan – 5 points (1 point each).
10. Bank letter stating that the contractor has access to, or has available liquid assets, lines of credit, unencumbered assets and other financial means, net of other commitments, sufficient to meet a project construction cash flow of up to USD 100,000 for a period of 6 month from the of issuing the certificate. And also certifying that the company is solvent, that the company has not filed for bankruptcy and is not in a process of receivership of liquidation - 5 points. (2.5points each)

TOTAL 70 Points for the technical evaluation and 30 points for the financial

Methodology for response

- A request for proposal will be processed, requiring a technical proposal and financial proposal.
- Bidders are requested to submit by Email the following:
 - 1 folder containing the technical proposal as attachment or via an accessible public link (we transfer or google doc) without a time validity or permission request.

- 1 scan of the signed and stamped print out of the financial offer and 1 excel copy of the financial offer; handwritten offers will be disqualified.
- Bidders must **not** submit any material except for the above mentioned.
- The technical proposal must follow the same sequence detailed under point 10. Technical Evaluation of the proposals; that is Points 1, 2, till the end.
- Failure to abide by any of the above requirements will **render the offer as disqualified**.

Terms of Payment

- 25% upon exceeding 30% of works
- 50% upon exceeding 55% of works
- 75% upon exceeding 80% of works
- 100% upon completion of works.

Timing/Duration of Contract

- The LTA will be concluded for an initial period of two years renewable for one additional year according to UNICEF's needs and based on UNICEF's policies and provided performance is satisfactory.
- POs shall be raised against the LTA as may be required.
- Please note that UNICEF is not obligated to order any minimum number of services from the Supplier pursuant to this LTA and is entitled to procure the same or similar services from other suppliers if the price or quality variable is deemed too great or the conditions of the LTA cannot be met.

Special Conditions:

- UNICEF will enter into LTAs with at least 2 Service Provider. The LTAs will be set up as individual non-exclusive arrangements which will provide UNICEF the flexibility to source outside the LTA should market circumstances change and better offers exist outside the LTA, in order to obtain the best value for money.
- A formal monitoring and review system shall be established by UNICEF for each LTA to monitor the extent to which the supplier has met agreed performance indicators (e.g. quality, delivery lead time, etc.) for each PO during the course of the year in order to decide whether the LTA/LTAs should remain in use or not.
- UNICEF will have the right to change/amend or terminate the LTA if:
 - a) A major change in current market conditions/prices occurs that invalidates the intent of the LTA to ensure UNICEF gets value for products & services.
 - b) The performance of the current LTA/LTAs supplier(s) is deemed not satisfactory based on performance evaluations
 - c) There is a major change in the projected quantities, which necessitates higher capacity than what the LTA Supplier can provide in a timely manner
 - d) There is a change in services needed which are not covered in the LTA
 - e) SCADA develops at a rate that renders that current submittal outdated/obsolete.
- LTA holders will strictly abide by UNICEF's policies and regulations on Prevention from sexual exploitation and abuse (PSEA) and Prevention from sexual harassment.
- The contractor shall provide upon execution of the works/work completion and acceptance by local authorities/signed minutes of handover, an unconditional Defects Liability bank guarantee equal to 10% of the contract value for a period of 12 months and 28 days. This bank guarantee will be released back to the contractor upon final Acceptance/Handover or 1 year from completion of works.

Annex(es)

- Excel pricing file for the works planned under the LTA.