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## Enhancing the SCADA Communication Systems in Muscat, Batina & Dhahira Governorates

### Brief Scope of Work:

The National Control Centre (NCC) at Bawsher is having sophisticated software and hardware systems for the monitoring, controlling and data archiving from all the Governorates under the jurisdiction of NWS. These systems are integrated with very large water transmission and distribution networks. The network includes major pumping stations, booster pumping stations, storage reservoirs, tanker filling stations, district metering points, pipeline networks etc.

The NCC system includes a central database and reporting tool also. All the critical data being archived in this system. Presently the NCC and RCCs do NOT have FO communication links. The NCC and RCC communications are being managed using Omantel GPRS communications, which is having very low bandwidths, which is not sufficient for the purpose. The FO communication links from the RCC to the stations were developed over a period of time and part of multiple projects. These communication links are plain networks using unmanaged low bandwidth switches.

The scope of services includes following systems:

#### Technical Scope

- Detailed Engineering and Design jobs including site surveys
- Supply and implementation of High Bandwidth, High Availability Aggregation Devices (MPLS or DWDM) in the NCC
- **Establish High Bandwidth Communication Links between NCC & RCC using existing FO Cables**
- Supply and implementation of High Bandwidth, High Availability Aggregation Devices (MPLS or DWDM) in the RCCs
- Supply and implementation of High Bandwidth, High Availability Aggregation Devices (MPLS or DWDM) in the Regional Networks
- L3 and L2 switches required for the network improvement
- Telecom Network Management System
- Required enclosures for the devices
- Fibre Optic Patch Panels
- Reconfiguring the existing PLCs and other devices
- GPRS Modems for automatic backup communication

#### Other Requirements in the scope

- Training and Knowledge Transfer to NWS Team
- Warranties and Maintenance Support