



# Sohar

## Leak detection and location in a 270 km water transmission pipeline

In Oman water resources are of key importance to the country's economic future, and the rapid development of the country requires much more water than is currently available.

### Pipeline Description

As a result of the scarcity of water, AQUIS Leakage Management System (LMS) has been chosen for leak detection and leak location on the 270 km long Sohar water transmission pipeline. The pipeline will supply water from a large desalination plant through three pipeline branches to a wide area of Oman.

### Project Objective

- Leak detection and location
- To perform extensive model-based supervision
- Pipeline planning to ensure that enough water is available at the offtakes of the pipeline

### LMS Features

LMS includes a state-of-the-art leak detection system. Furthermore, 7T supplies a full functioning offline simulator that enables the operators to run what-if scenarios to establish the validity of operational cases. Included in the 7T software delivery is an offline training system, which allows the operators to educate themselves in SCADA behavior by using the LMS model to generate "live" data. This enables the operator to use the SCADA system for simulating day-to-day operation as well as operational challenges.

LMS facilitates planning and management of pipeline operation within numerous areas, including:

- Leak detection
- Optimization of pump operation
- Optimization of pipeline planning and operation
- State estimation
- Surge analysis



### Project Specifications

# WATER NETWORK MANAGEMENT

Real-time monitoring and proactive decision making

WWW.7T.DK

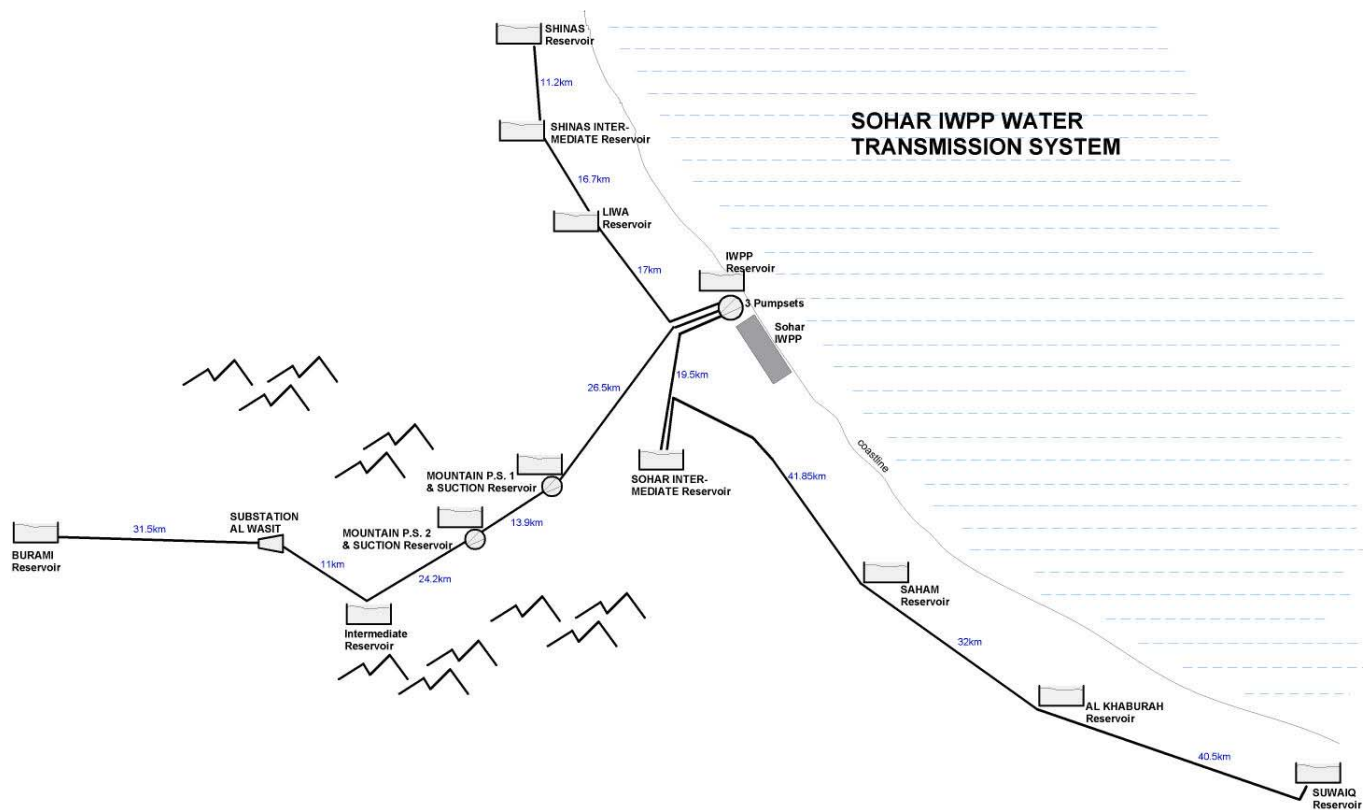
## CUSTOMER CASE

End user: Ministry of Housing, Electricity and Water – Sultanate of Oman

Pipeline length: 270 km

Total number of I/O: 2,000

- Sohar IWPP (Independent Water & Power Production) plant, including desalination plant for water production and two storage reservoirs (approx. 135,000 m<sup>3</sup> in total)
- Forwarding pumping station at Sohar IWPP comprising 3 pump sets for each transmission line
- Transmission line 1: 4 reservoirs and approx. 135 km of pipeline
- Transmission line 2: 4 reservoirs and approx. 107 km of pipeline, incl. 2 mountain pumping stations
- Transmission line 3: 4 reservoirs and approx. 45 kilometers of pipeline



The Sohar water transmission system in outline.

### System Integrator

On the Sohar Water Transmission project, 7T is the system integrator and a subcontractor to Yokogawa of Singapore, the provider of the pipeline SCADA system.