Connecting Europe Facility - ENERGY

Detailed Engineering for Pipeline Security System (PSS)

7.1.1-0045-TR-S-M-15

Part of Project of Common Interest no 7.1.1

EXECUTIVE SUMMARY

The Action is composed of one main activity concerning the detailed engineering for the Pipeline Security System (PSS), covering 4 metering stations (including the pigging areas), 2 compressor stations (including offtake compressor station and pigging areas), 49 block valve stations, 5 pigging areas of future possible compressor stations and 2 pigging stations located at each side of Dardanelle Straight Crossing to ensure security of TANAP pipeline and associated facilities. The main function of the Pipeline Security System is to detect unauthorized intrusion, control access and digitally record voice:

- Intrusion Detection system (IDS): this system monitors the station fence and the surrounding area of all manned and unmanned stations of the pipeline;
- Access Control System (ACS): this system shall organize the controlled access to the stations and the different security zones in buildings;
- Digital Voice Recorder (DVR): this system will record essential voice communication, enabling the reconstruction of the timely sequence of events, in the unlikely case of incidents.

Functional Technical Design Specifications reflecting abovementioned functions peculiar to TANAP conditions were developed. Block Diagrams were tailor-made designed for the manned stations with drafting of field schematic diagrams. Besides under this scope operations and maintenance procedures were developed. Based on this technically sophisticated and specific desktop study, actual PSS system was designed.

The TANAP fibre optical backbone is the primary PSS Telecommunication transport medium and consists of two physically separated fibre optical cables configured in a ring formation. This has the advantage that if one part of the fibre optical cable is accidentally damaged, communication data is automatically re-routed around to the second (physically separated) fibre optical cable.

For additional network resilience, the TANAP system has two control centres, one at the Main Control Centre, another one at the Backup Control Centre. Alarms are duplicated so that if one centre fails, the other one automatically takes over. If there is a catastrophic fibre failure, communications are then re-routed via a VSAT (2Mbps) satellite link.

The completion of this Action will ensure the delivery and installation of a proper PSS package in accordance with international and local rules and standards and will enable the security operator to supervise all stations from the local security room or in a centralized manner from the control centres. It will enhance the security of gas transmission through the TANAP pipeline, ensuring the uninterrupted flow of gas to the European market by early warning and thus preventing unauthorized ingress to the right of way and associated facilities.