Pipeline leak detection and complete measurement solutions from KROHNE

- PipePatrol – most sensitive internal leak detection system based on Extended Real-Time Transient Model (ERTM)
- PipeProtect – emergency shutdown system for high consequence areas
- New ALTOSONIC 5 – inline ultrasonic flowmeter with 7 measuring paths for custody transfer applications
- New OPTIMASS – straight tube Coriolis flowmeter with entrained gas management (EGM™)
- Enhanced pressure and temperature measuring devices
- Conductivity measurement using new SMARTSENS technology
- SUMMIT 8800 – digital flow computer with graphic display

Process automation: complete solutions from Phoenix Contact

- Reliable transmission of relevant process data via communication networks such as mobile communication and public telephone network, SHDSL, wired systems, and wireless systems
- Easy integration of measurement and control technology into the automation solution by means of pre-programmed function blocks
- Constant system overview, thanks to consistent visualization locally and in the control room
- Comprehensive solutions, from surge protection, power supplies, wireless products and automation technology through to visualization
- Solutions for the application in all Ex zones and in all gas and dust groups, thanks to MACX Analog Ex signal conditioners
- Consistent redundancy for maximum availability, from failsafe power supplies through to redundant control systems

Pipeline Inspection and Integrity Management Services from ROSEN

- Comprehensive services for detection, sizing and localization of geometric anomalies, metal loss and cracks in oil and gas pipelines
- Non-destructive testing technologies including magnetic flux leakage, ultrasonic and eddy current technology
- Providing optimized inspection solutions for onshore/offshore pipelines
- Complete services include pipeline cleaning, mapping, material identification and leak detection
- Comprehensive Pipeline Integrity Management Software packages for data management, data archiving, regulatory compliance procedures and documentation
- Wide range of cleaning tools and auxiliary products
This model represents an abstract version of an oil or gas pipeline with a length of up to 100 km, equipped with a leak detection, including all the necessary measuring and automation technology.

The model shows data transmission from remote locations with and without existing infrastructure also for harsh environments. Therefore signals from hazardous areas are collected, preprocessed and sent to a central visualization and evaluation system.

To ensure the secure transmission of oil and gas products, intelligent in-line inspection tools analyse the pipelines that transport oil, gas and other products. Several testing methods are used to identify and evaluate geometric errors, corrosion, cracks and leaks.

Depending on customer requirements and the nature of the supply network, various solutions are available which can be operated through the interaction of the individual components by KROHNE, Phoenix Contact and ROSEN.

**Leak detection and localization**
Internal leak detection system for oil and gas pipelines with an accuracy of 1% and zero false alarms.

**Measurement solutions**
Custody transfer measurement solutions for flow, pressure, temperature and conductivity.

**Visualization**
Next to the PC-based visualization in the control room, we also offer you an on-site visualization thanks to the VISU+ App (for iOS and Android) on tablets and smartphones.

**Data transmission**
Depending on the infrastructure on-site there are various technologies for data transmission available (SHDSL, GSM, Wireless).

**Redundant systems**
From power supplies and data transport to the control systems – thanks to redundant systems on all levels maximum availability is guaranteed.

**In-line inspection**
The model shows an ultrasonic tool for in-line inspections, utilized for metal loss surveys and corrosion inspection.

**Ultimate clean**
Cleaning tools are used for regular maintenance cleaning of pipelines and prior to in-line inspection.

**Abrasion-resistant inner coatings**
Polyurethane coatings protect the pipe wall from abrasive media.