MODULAR INSPECTION TECHNOLOGY ENABLING COMBINED DIAGNOSTICS
COMBINED IN-LINE INSPECTION SERVICES

Pipeline integrity is affected by a multitude of anomalies, flaws and threats. No single inspection technology can detect, identify and size all combinations of features that may be present in a pipeline.

To increase the reliability and accuracy of integrity assessments, ROSEN combines the evaluation of two or more different in-line inspection (ILI) data sets. While these data sets may stem from different ILI tools, ROSEN is able to merge different inspection technologies on one in-line inspection tool.

THE SOLUTION

ROSEN provides a variety of different and well-established inspection technologies to address a multitude of threats. Our modular design allows different inspection services to be combined on one ILI tool. By performing two or more inspection tasks in one run involved efforts and risks can be significantly reduced. With an extensive list of possible combinations, there is a one-tool solution to suit every need. The modularity is supported by standardized mechanics and electronics interfaces (IEEE 1394, DSI, LVDS).

Multiple inspection data are input for our combined data analysis using synergy effects of the independent and complementary nature of the measurements to provide a more detailed "picture" of the pipeline's integrity. With this well-structured process, our analysts provide the required high-quality assessment on time.

ROSEN's reporting and data management software ensures easy data visualization and facilitates the broad use of inspection results.

KEY ADVANTAGES

- Improved sizing accuracy and probability of identification by combination of complementary inspection technologies and aligned data sets
- Improved characterization of complex features, e.g. gouging and denting
- Cost-effective approach to in-line inspection
- Reduction of operational risks by limiting onsite activities, e.g. launch, receive and tool tracking
- Reduced pipeline cleaning requirements and impact on pipeline operations
- Many proven combinations of inspection technologies to address a wide range of pipeline integrity threats

SERVICE OPTIONS

All aspects from the inspection request to the final report are covered with the flexibility to choose from various service options.

- Cleaning – operational and pre-inspection
- Speed Control – inspection at high flow rates
- Multi-Diameter – pipelines with varying diameter
- Offshore – long distance and high pressure
- Post-ILI – data alignment and combined evaluation
- Field Verification – MPI, phased array UT
- Integrity Assessments – RBI, FFP, CGA, dent strain and stress analysis
- NIMA – versatile asset integrity software suite

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TECHNICAL SPECIFICATIONS

Location and Orientation Capabilities

Axial position accuracy from reference marker 1 m on 1.000 m (3.2 ft on 0.62 mile) marker distance	1:1000
Axial position from closest weld	±0.1 m (±3.9")
Circumferential position accuracy	±5°

The axial positioning accuracy specified is based on following criteria:
- Distance between upstream and downstream marker/reference point < 2.000 m (1.2 miles)
- Actual above ground distance to both upstream and downstream marker/reference points to be measured and correlated
- Negligible difference between pipeline and soil contour

Modular Inspection Combinations

	RoCorr MFL-A	RoCorr MFL-A Ultra	RoCorr MFL-C	RoCorr UTWM	RoCorr IEC	RoGeo XYZ	RoGeo XT	RoGeo MD	RoMat PGS	RoMat DMG
RoCorr MFL-A			✓*	✓*	✓*	✓	✓	✓	✓	✓
RoCorr MFL-A Ultra			○	✓	✓	✓	✓			
RoCorr MFL-C	✓*	○		✓	✓	✓	✓	✓	○	○
RoCorr UTWM	✓*	✓	✓		✓	✓	✓	✓	✓	
RoCorr IEC	✓*	✓	✓	✓		✓	✓		✓	✓
RoGeo XYZ	✓	✓	✓	✓	✓		✓		✓	✓
RoGeo XT	✓	✓*	✓*	✓	✓	✓			✓	
RoGeo MD	✓		✓	✓					✓	
RoMat PGS	✓	○	✓	✓	✓	✓	✓	✓		✓
RoMat DMG	✓	○		✓	✓	✓	✓		✓	

✓ = available; ○ = on request; ✓* = available performance specification for combined diagnostics

Remarks and Features

- API 1163 compliant services
- CE and ATEX certification available
- Tailored solutions with different specifications upon request:
  multiple tool sizes or multi-diameter tools, higher pressure rating
- Specifications are subject to change based on
  specific requirements or tool configurations

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