### Competence in Pipeline Asset Care

### Integrity Services

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Property</th>
<th>Coating</th>
<th>Cracks</th>
<th>Repair</th>
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<tbody>
<tr>
<td>Geomrtry</td>
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<td>Metal Loss</td>
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<td>Crack</td>
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<td>Filled</td>
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<td>Defects</td>
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| Inspection Services

- Liquid Medium
- Gas / Multiphase Medium
- High Flow Velocity
- Low Flow / Low Pressure
- Multi-Purpose
- Balanced
- Heavy Wall
- ODA-Oud

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<thead>
<tr>
<th>Parameter</th>
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<tbody>
<tr>
<td>GeoHazard / Depth of Cover Assessment</td>
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<tr>
<td>Crack Growth Assessment</td>
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<td>Fatigue Life Assessment</td>
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<td>Dent Strain / Stress / Fitness for Purpose Assessment</td>
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<td>Corrosion Growth Assessment</td>
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<td>Inline hard spot and material analysis</td>
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### ROSEN Technology

- **RoMat DMG**: Inline high-resolution pipe grade determination
- **RoMat MTS**: Inline high-resolution circumferential crack detection and sizing
- **RoMat PGS**: Inline high-resolution circumferential crack detection and sizing (available on request)
- **RoCD UT-A**: Inline high-resolution axial crack detection and sizing
- **RoCD UT-C**: Crack detection and sizing (available on request)
- **RoCD EMAT-A**: Inline high-resolution metal loss detection and sizing
- **RoCD EMAT-C**: Inline high-resolution metal loss detection and sizing
- **RoCorr UTWM**: Ultra-high-resolution metal loss and narrow axial feature detection and sizing
- **RoCorr IEC**: Inline ultra-high-resolution metal loss detection and sizing
- **RoGeo XYZ Mapping**: Inline precision pipeline route mapping and curvature measurement
- **RoGeo MD**: Inline geometry measurement
- **RoGeo XT**: Inline precision pipeline route mapping and curvature measurement

### Detection and Sorting

- Detection: only available
- Sorting: preferred
Pipelines are exposed to a wide range of potential damage mechanisms, which may eventually result in leakage or worse if not identified at the right time. While single threats may severely compromise the operational safety of a given pipeline, combined threats pose an even higher risk to the asset’s overall integrity.

There is no single inspection technology that can detect and size all combinations of features that may be present in your pipeline. So how can you be sure to reliably detect and correctly assess every anomaly type?

ROSEN offers a variety of modular inspection technologies that can be merged on one tool to comprehensively assess various types of threats in one ILI run, ultimately reducing inspection-related costs and efforts. Each technology is strong on its own. However, the combination of multiple technologies provides significant added value as the combined evaluation of various data sets leads to more accurate and reliable integrity assessments, reducing operational risk.

Combined Diagnostic Solutions

Want to benefit from Combined Diagnostic Solutions?

High-resolution detection and sizing of internal, mid-wall and external metal loss defects, wall-thickness variations and milling anomalies with improved POD and PDI compared to stand-alone inspections.

High-resolution detection of metal loss and geometry defects, e.g. corrosion, dents, wrinkles, dents with re-rounding and metal loss, and determination of material properties like pipe grade and hard spots.

High-resolution detection and sizing of all kinds of metal loss and narrow axial features, e.g. corrosion, channeling, top-of-line corrosion, girth weld anomalies, spiral weld anomalies and seam weld anomalies.

Accurate detection and sizing of internal, external and mid-wall metal loss anomalies and geometry features within heavy-walled or CRA clad pipelines, e.g. general thinning, dents with metal loss or internal coating damage.

Combined Diagnostic Solutions