POF specifications and requirements for intelligent pig inspection of pipelines.
In Line Inspection

In Line Inspection: One of the best means to detect features of a (buried) pipeline.

Pig propelled by product or other media (nitrogen, water) or self propelled (rare).

Main techniques: geometric tools, UT waves and MFL.

Different features can be detected:

- Dents or geometric anomalies,
- Metal loss (large defects or pittings),
- Cracks (axial, radial, SCC ... )

Limits:

- Probability of detection < 1,
- Features sizing and localisation accuracy,
- Costly verifications.

Specifications required
POF = Pipeline Operators Forum:

- 21 members:
  BP, Chevron, Conoco Phillips, Dong, Enagas, E.ON Ruhrugas, Exxon Mobil, Gassco, GDF – Suez, Gasunie, MOL, OMV, Petrobras, Qatar-Petroleum, Saudi Aramco, Shell, SMPR, SNAM-Retegas, Statoil-Hydro, TAL, Total.

- Goals of the POF:
  - Promote pipeline integrity management globally from an operators perspective
  - Work with industry to improve the services required to meet integrity objectives

- More informations ... See website www.pipelineoperators.org
POF specifications

POF specifications and requirements for intelligent pig inspection of pipelines:

- This document is intended to serve as a generic in-line inspection specification.
- Cannot cover all pipelines specific issues.
- Version 2009 available on website (free).
- Topics covered:
  - Anomalies and features,
  - Assessment methods,
  - Tools,
  - Personnal qualification,
  - Reports,
  - Verification dig ups,
- Topics not covered:
  - Commercial aspects,
  - Liabilities,
  - Insurance ...
In-Line inspection

To prepare an in-line inspection:

- Pipe tally, pipe design, pig launcher -receiver and in-line valves drawings, minimal radius bend, barred tees ...
- Features expected: pitting, cracks, general corrosion ... -> selection of the technique(s),
- Requirements,
- Prequalification of the providers,
- Call for tender and selection provider,
- Determination of the programme which should include:
  - Gauge plates,
  - Cleaning tools (importance of the cleaning for UT pig)
  - Geometric tools,
  - Intelligent pig(s),
- Pipeline modifications required (pig launcher, valves ...),
- ILI + field report,
- Data analysis,
- Report and assessment,
- Verification dig up,
- Final report,
- Action plan.
Specifications & requirements for an in-line inspection

- Technical requirements are covered by POF spec.
- Standardisation introduced by this document helps to compare different bids.
- HSE aspects (except ATEX), liabilities, payments conditions ... are not covered.

Shall be compiled with company’s specification

- Based new technology intelligent pigs are commonly arriving on the market.

POF members have to evaluate these tools and spec. has to be upgraded.

- Verification of the accuracy

Dig-ups required and statistical file used (still under development).