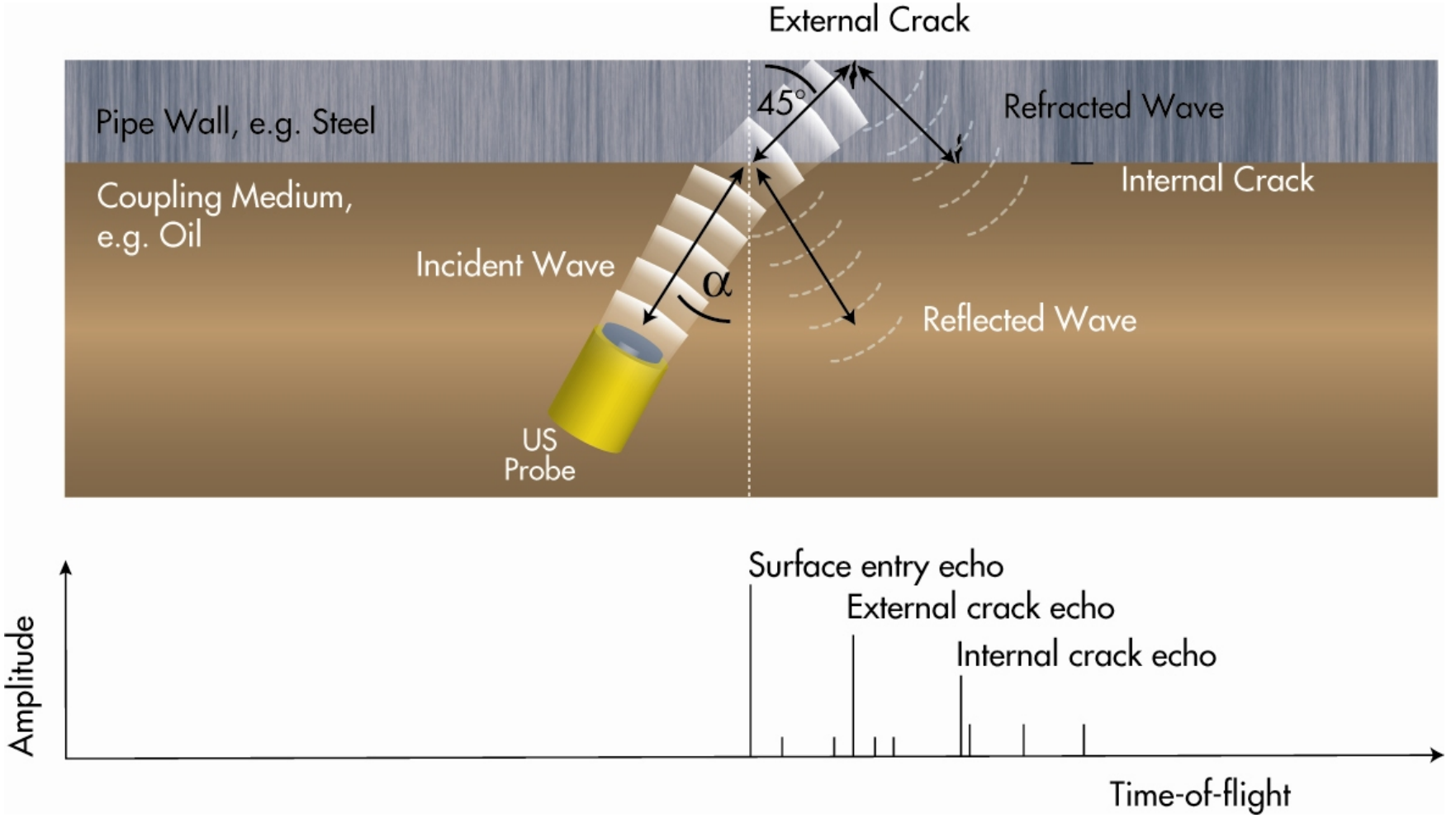
INSPECTION INTELLIGENCE NDT GLOBAL

PIPELINE CRACK DETECTION TECHNOLOGY DEVELOPMENTS

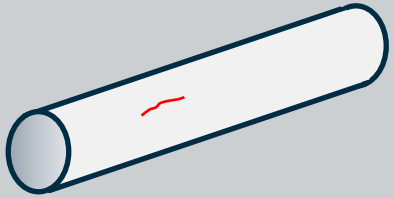
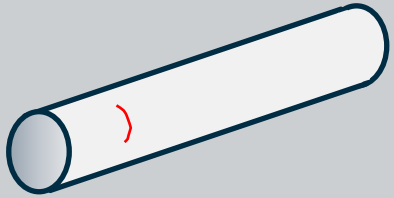
MEASUREMENT PRINCIPLE

Crack Detection – 45° Shear Wave



TOOL CAPABILITIES

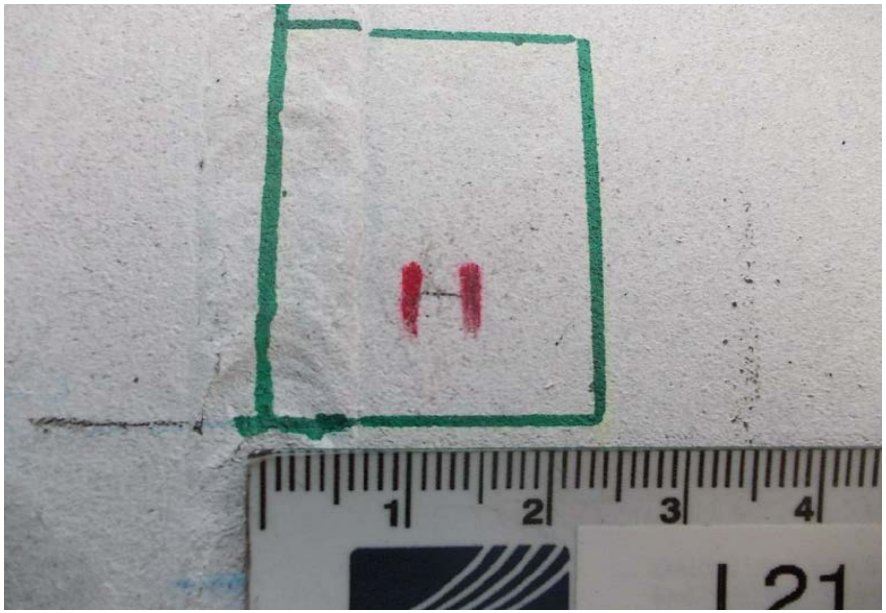
Feature Specification

	UC	UCc
		
Orientation	Axial cracks (±10°)	Circumferential cracks (±10°)
Anomaly types	SCC, fatigue cracks, long seam cracks and weld anomalies	SCC, fatigue cracks, girth weld cracks and weld anomalies
Min. Crack Size • in pipe body • in/at seam weld • in/at girth weld	30mm x 1mm (1.2” x 0.04”) 30mm x 2mm (1.2” x 0.08”)	30mm x 1mm (1.2” x 0.04”) 30mm x 2mm (1.2” x 0.04”)
Depth Sizing	Absolute values (up to 0.16”) ±1mm tolerance	Absolute values (up to 0.16”) ±1mm tolerance

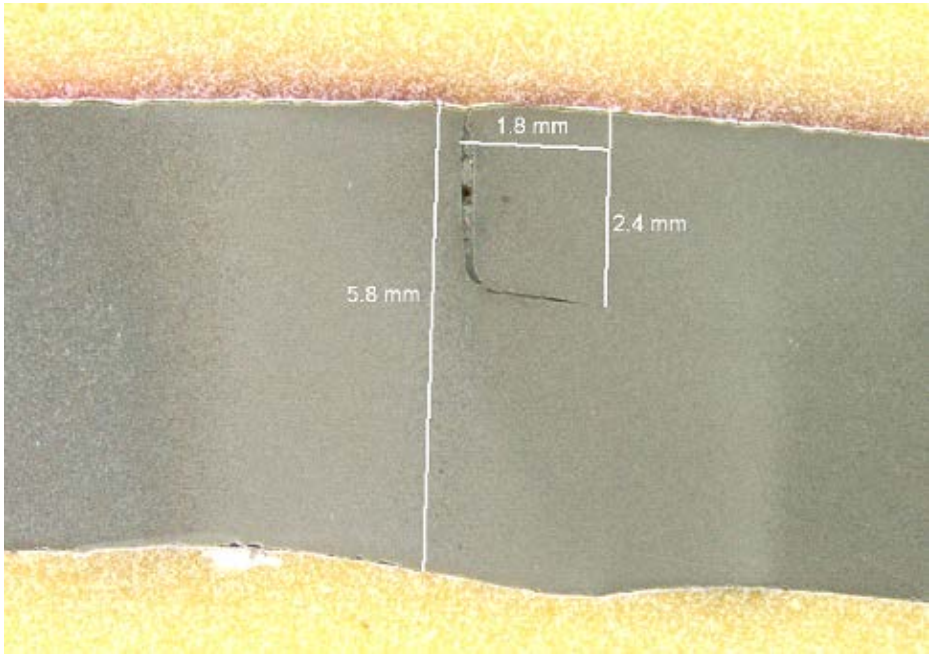
VERIFICATION RESULTS

Axial Cracks

19mm axial crack at girth weld



Hook crack in ERW



VERIFICATION RESULTS

Crack in Weld

w/o grinding

with grinding

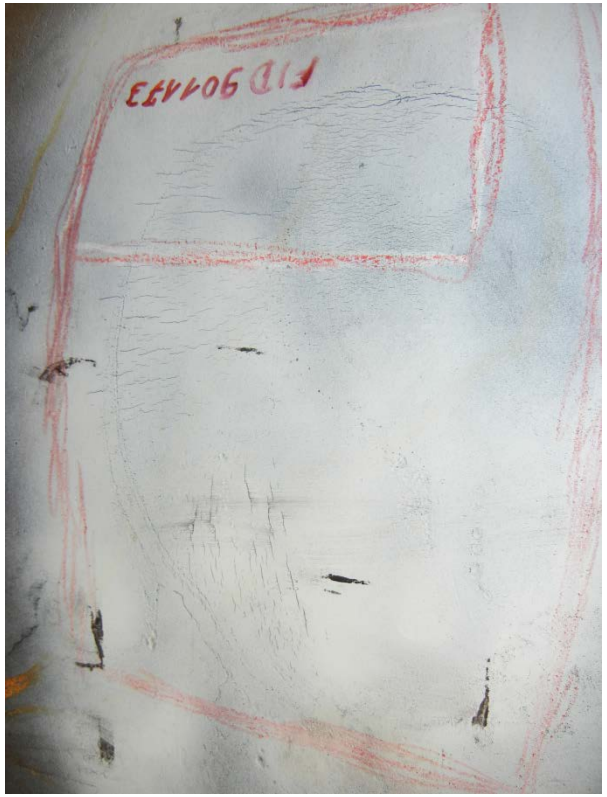
VERIFICATION RESULTS

Longitudinal Cracks

SCC at the girth weld

VERIFICATION RESULTS

Crack Field in Dent



VERIFICATION RESULTS

Circumferential Crack Field

FUTURE INVESTMENTS

Crack Detection Technology Advancement

Main development goals:

- Very high POD for significant defects
- Improved sizing and discrimination capabilities
- Continued enhancement of tool reliability to address challenging run conditions
- Greater implementation of automated processes and algorithms ensuring consistency of reported results

Implementation Strategy

- Leverage current experience and history to develop an advanced technology solution
- Comprehensive approach integrating advanced software, analysis processes, and new inspection tool hardware
- Targeted availability of next generation solution in short term, ~18 months

THANK YOU!

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