



# **INTRODUCTION TO NIMA ELEVATOR PITCH**

Michael Young, Paul Birkinshaw · The Future Subsea Digital Toolbox · Aberdeen · 31/10/2019

# NIMA

## A Powerful Asset Integrity Management Platform

### Origins

- Developed within ROSEN Integrity Solutions
- Next generation IM software framework
- Worldwide track record – ROAIMS, built and successfully used for onshore pipeline networks

# ROSEN Group

## Business Portfolio

### ASSET CARE



#### Diagnostic Solutions

- Field Products & Services
- Proficient Pipeline Diagnostics
- Advanced Pipeline Diagnostics
- Challenging Pipeline Diagnostics
- NDT Diagnostics
- Industrial Diagnostics



#### Monitoring Solutions

- Online Monitoring



#### Integrity Solutions

- Integrity Management Systems
- Integrity Management Services

#### UK Offices

- ❖ Aberdeen
- ❖ Edinburgh
- ❖ Newcastle

### PROCESS CONTROL



#### Flow Metering Solutions

- Steam Flow
- Multiphase Flow
- Advanced Gas Flow
- Standard Industrial Flow
- Commodity Flow
- Novel High End Flow Applications

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9 Queens Road, AB15 4YL  
(Next to the Dutch Mill!)



#### Plastic Solutions

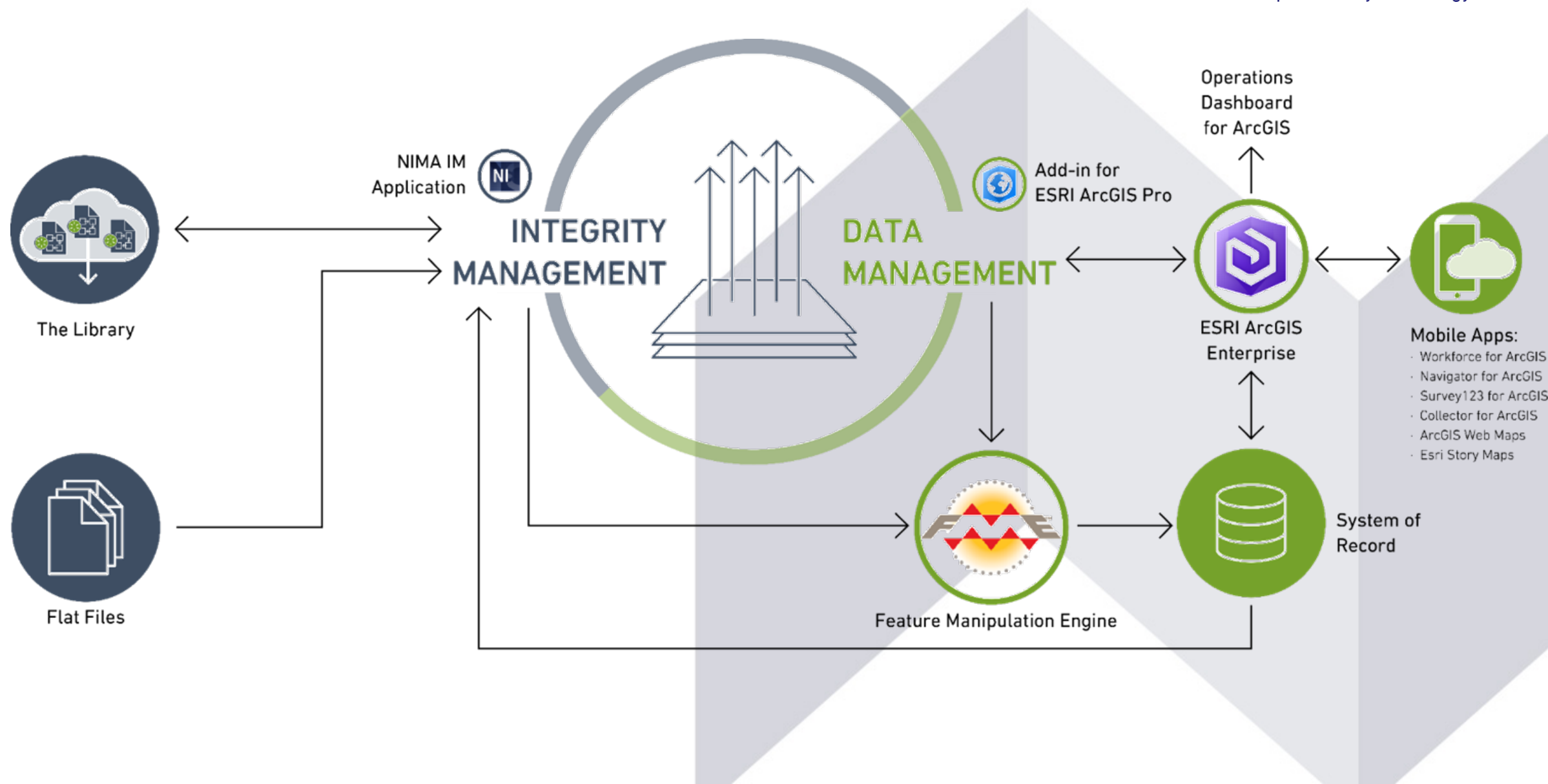
- Coatings
- High-performance Elastomers
- Smart Plastic Systems

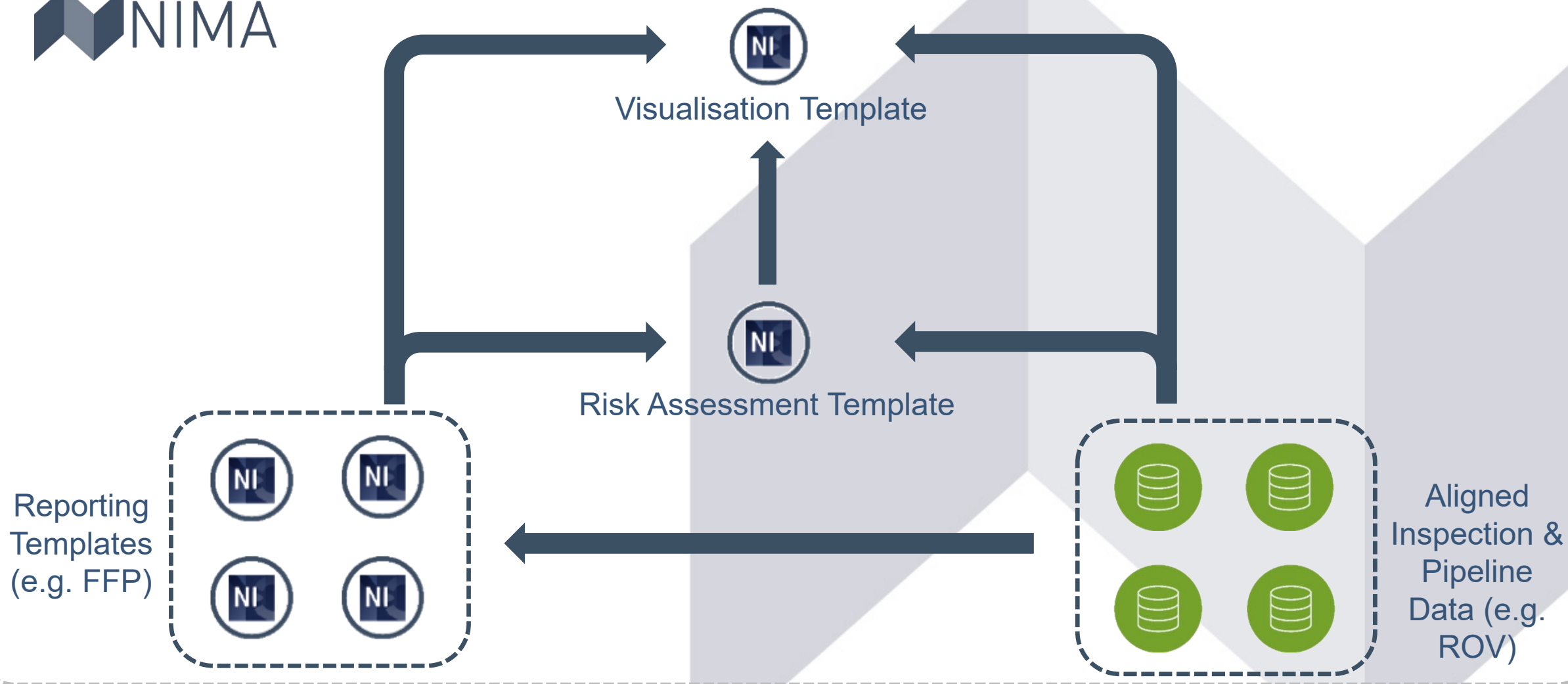
# NIMA

## A Powerful Asset Integrity Management Platform

### Goals

- Implementation for subsea pipelines (NIMO 😊)
- Deliver a 'dynamic' tool to undertake IM tasks and pipeline Risk Based Inspection (RBI)
- Harness > 20 years experience working with ABZ operators within a software package.





### Pipeline Risk Assessment

Engineering Route Name	Inspection Date	Description	Segment Identifier	Engineerin
PL_A	7/20/2018	Start of Exposure	Subsea pipeline PL_A	
PL_A	7/20/2018	End of Exposure	Subsea pipeline PL_A	
PL_A	7/20/2018	Start of Exposure	Subsea pipeline PL_A	
PL_A	7/20/2018	Coating Damage Weightcoat Cracking	Subsea pipeline PL_A	
PL_A	7/20/2018	Anode Bracelet	Subsea pipeline PL_A	
PL_A	7/20/2018	Fieldjoint	Subsea pipeline PL_A	
PL_A	7/20/2018	Coating Damage Weightcoat Loss	Subsea pipeline PL_A	
PL_A	7/20/2018	Coating Damage Weightcoat Loss	Subsea pipeline PL_A	
PL_A	7/20/2018	Coating Damage Weightcoat Loss	Subsea pipeline PL_A	

Segment Identifier	Description	Segment Length [m]	PS ON [mV]	Wear
Subsea pipeline PL_A		MINIMUM	MINIMUM	Null
		0.100	NaN	
		MAXIMUM	MAXIMUM	
		0.400	NaN	
		AVERAGE	AVERAGE	
		0.192	NaN	
Pipeline within the 50...	Coating Damage Wei...			24
23	24			
	Anode Bracelet			
1	0			



PROJECT

INPUT DATA

EXECUTE

SEGMENTATION

- INTERNAL CORROSION

SEGMENTATION

- EXTERNAL CORROSION

ADD DASHBOARD

PIPELINE DATA  
Alignment & Visualization

REPEAT ILLI | VISUAL  
COMPARISON

REPEAT ILLI | BOX  
MATCHING

BOX MATCHING  
RESULTS |  
SEGMENTATION

FFS | DATA  
VALIDATION

FFS | TOLERANCE  
APPLICATION

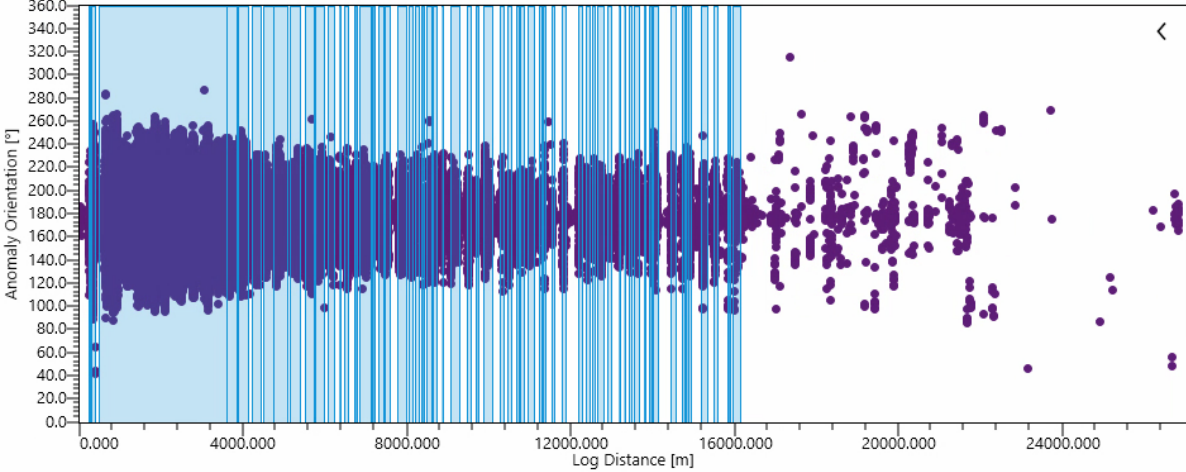
FFS | ASSESSMENT  
PARAMETERS

FFS | ASSESSMENT  
- REPORTING

FUTURE INTEGRITY  
ASSESSMENT |  
CORROSION

PIPELINE RISK  
ASSESSMENT

SEGMENTATION | INTERNAL CORROSION CONCENTRATIONS



SEGMENTATION | INTERNAL CORROSION GROWTH RATES



SEGMENTATION & PIPELINE INFORMATION

Concentration

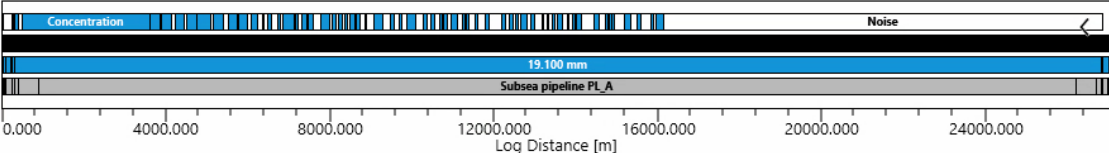
Joint Number

Wall Thickness

Pipe section

19.100 mm

Subsea pipeline PL\_A



SEGMENTATION SETTINGS [0 of 1]

Surface Location = 'Internal'

Search ...

Surface Location

Resolution

Calculation Methodology

Internal

Low

95th Percentile

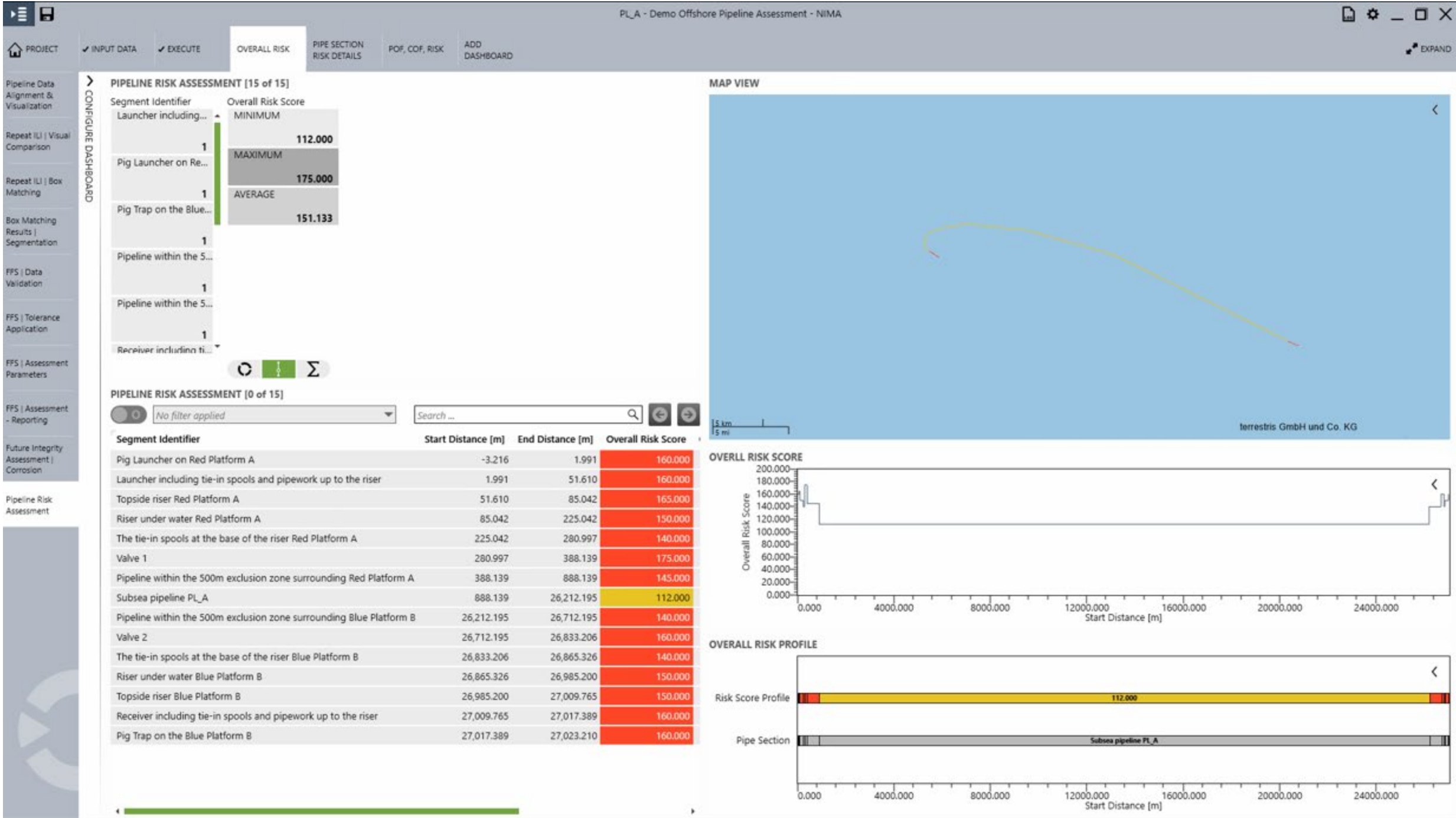
BOX MATCHING RESULTS | SEGMENTATION [0 of 119]

[Surface Location = 'Internal' AND Segment Iden...

Search ...

Segment Iden...	Log Distance Start [m]	Log Distance End [m]	Concentration Type	Feature Count	Calculation Methodology	Segment CGR [mm/year]
D1	15.936	231.896	Noise	78	95th Percentile	1.15
D2	231.896	257.301	Concentration	522	95th Percentile	0.78
D3	257.301	287.079	Noise	0		
D4	287.079	391.127	Concentration	2,497	95th Percentile	0.59
D5	391.127	460.293	Noise	0		
D6	460.293	3,582.621	Concentration	113,639	95th Percentile	0.54
D7	3,582.621	3,610.310	Noise	0		
D8	3,610.310	3,846.044	Concentration	8,515	95th Percentile	0.62
D9	3,846.044	3,869.396	Noise	57	95th Percentile	0.77
D10	3,869.396	4,117.088	Concentration	6,681	95th Percentile	0.62
D11	4,117.088	4,202.631	Noise	30	95th Percentile	0.72
D12	4,202.631	4,416.941	Concentration	6,458	95th Percentile	0.62
D13	4,416.941	4,500.095	Noise	17	Maximum	0.76
D14	4,500.095	4,733.586	Concentration	6,157	95th Percentile	0.62
D15	4,733.586	4,753.129	Noise	3	Maximum	0.53
D16	4,753.129	5,079.791	Concentration	6,568	95th Percentile	0.75
D17	5,079.791	5,138.015	Noise	35	95th Percentile	0.79
D18	5,138.015	5,380.995	Concentration	5,925	95th Percentile	0.77
D19	5,380.995	5,518.434	Noise	87	95th Percentile	0.81
D20	5,518.434	5,721.061	Concentration	2,264	95th Percentile	0.96
D21	5,721.061	5,771.121	Noise	6	Maximum	0.57
D22	5,771.121	5,985.659	Concentration	2,986	95th Percentile	0.91
D23	5,985.659	6,062.507	Noise	53	95th Percentile	0.78
D24	6,062.507	6,229.506	Concentration	1,003	95th Percentile	1.00
D25	6,229.506	6,329.901	Noise	4	Maximum	1.10
D26	6,329.901	6,371.530	Concentration	328	95th Percentile	1.05
D27	6,371.530	6,473.006	Noise	4	Maximum	0.53
D28	6,473.006	6,572.489	Concentration	1,570	95th Percentile	0.82







More information at:



11<sup>th</sup> to 13<sup>th</sup> February 2020, P&J Live, Aberdeen