



Dynamic Risk

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PROJECT INSIGHT

Data Validation

A set of advanced analytic solutions and machine learning models to validate your integrated pipeline datasets.

Whatever your industry segment or business size, as a pipeline operator you need to trust the accuracy and completeness of data — so that you can ensure asset performance, while improving integrity management programs and optimization systems.

Historically, proper data validation required a time-consuming manual review by Subject Matter Expert (SMEs). Given how data has transformed in

complexity and source disparity, manual approaches have become unreliable and drifted off the radar in recent years. Values that might appear valid or reasonable when assessed in isolation can be nonsensical when viewed in context with other data (for instance, early vintage pipe with fabrication methods that have only recently become available).

Leveraging Predictive Analytics For Data Validation

The Data Validation solution leverages a comprehensive pool of data — ranging from large diameter/Transmission pipelines to small diameter and/or Distribution systems — augmented by Dynamic Risk’s extensive industry domain knowledge and expertise, to provide a process of reviewing and benchmarking the validity of pipeline integrity data without the need for a tedious manual review.

Using predictive analysis, your integrity data is compared against validated industry data and verified reference information to provide a thorough assessment of the data — including searching for incongruities and suggesting which values have the highest probabilities of matching with the rest of the data set.

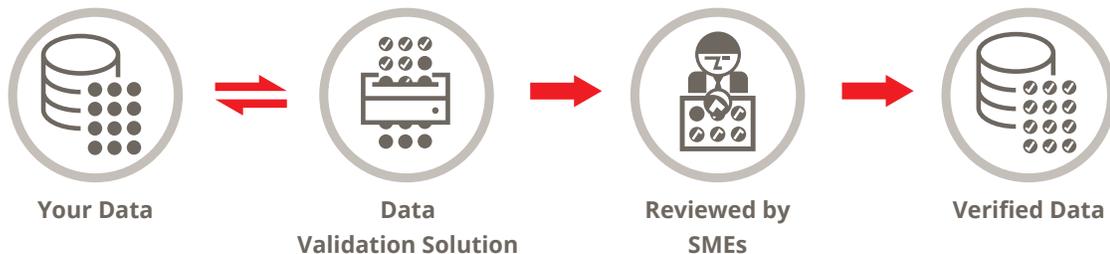
Dynamic Risk’s team of SMEs review the findings and provide the Integrity Management team with recommendations for verifying or updating the information, to ensure regulatory compliance and improve the safety and performance of your pipeline asset infrastructure.

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Projects: Test Projects 1a

Data Validation

Total Rows Ingested: 100,000
Total Columns Ingested: 92
Total Date Elements Ingested: 9,200,000
Unique Values Ingested: 25,000

Data Field	MFG		Pipe Spec		OD		WT	
	Count	%	Count	%	Count	%	Count	%
Data points ingested	5525		5525		5525		5525	
Unique Data Point Ingested	155		95		140		175	
Unknown Data Points	45	29%	20	21%	10	7%	40	23%
Blank Data Points	20	13%	10	11%	5	4%	15	9%
Invalid Data Points	10	6%	13	14%	5	4%	20	11%
Unknown Data Points with Predictions	45	29%	20	21%	10	7%	40	23%
Blank Data Points with Predictions	20	13%	10	11%	5	4%	15	9%
Invalid Data Points with Predictions	10	6%	45	47%	5	4%	20	11%
Total Features Predicted	75	48%	75	79%	20	14%	75	43%
Valid Features	80	52%	20	21%	120	86%	100	57%



Benefits



Resource Industry Expertise

Data analysis and validation performed by a team of pipeline integrity experts



Improved Reporting & Analysis

Trust and confidence in data and analysis for accurate reporting



Reduced Capital Spend

Decreased time and resources spent via automated processes to validate the quality of datasets



Improved Operational Safety

Access to consolidated, complete, and trustworthy data for risk-informed decision-making

About Project Insight

Dynamic Risk has partnered with a growing number of pipeline operators to compile the vast amount of their available pipeline asset data within our hub, which comprises pipeline and integrity data for over 140,000 km of pipe ranging from large diameter/Transmission pipelines to small diameter and/or Distribution systems from pipeline operators throughout North America. This wealth of data enables the development of advanced analytic solutions that leverage the Project Insight dataset to predict and quantify the expected performance of pipeline assets and the confidence of those predictions.

Project Insight participants benefit from access to quantitative and predictive analysis built on an anonymized data repository many times the size of any single pipeline system. Users can benchmark pipeline reliability and performance data against a collection of comprehensive integrity data that is unique in its size and scope.

Why Dynamic Risk?

Our team of industry experts, data scientists, and analytics specialists, supported by the industry's largest, most comprehensive pipeline data warehouse, together enable you to plan the best path forward for the health and safety of your pipeline infrastructure.

Contact us today to learn how Project Insight and our state-of-the-art Data Validation can maximize the value of your integrity budget by creating a thorough Asset Management Plan to measure performance, optimize risk reduction, and decrease operational spend.



Dynamic Risk is part of Previaan, a fast-growing, innovative, and private industrial technology group focused on advanced diagnostic technologies to monitor the world's infrastructure health. The Group serves asset owners, large engineering firms, and service companies globally in markets such as Aerospace, Civil Infrastructure, Energy, Mining, Power Generation, and Rail. Via sensors, hardware, robotics, and software, Previaan makes a safe and sustainable future possible, by pushing the limits of diagnostic technologies that preserve the integrity of our world's critical infrastructure and assets.

More information can be found on the company's website: www.previaan.com

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