

# InnerLogix Data Quality Management

### ADVANTAGES

- Automates continuous data quality improvement
- Scalable to any size business
- Addresses multiple data repositories
- Tracks data quality metrics
- Provides global support network

**ACHIEVING RELIABLE DATA** is a continuous process, not a one-time event

### DATA CONFIDENCE

The importance of data quality management (DQM) cannot be underestimated. For example, a 10% inaccuracy in the data provides poor-quality information for the decision-making process that will impact the accuracy of the decision. Geoscientists and engineers frequently reinterpret data rather than reusing preexisting results because they simply do not trust the determinations of other people.

The Six Sigma® process was originally developed as a set of practices designed to improve manufacturing processes and eliminate defects. In Six Sigma, a defect is defined as anything that could lead to customer dissatisfaction. The Six Sigma process was subsequently extended to other types of business processes.

It is an established fact that geological, geophysical, and engineering data managed using traditional manual data quality processes will achieve 3 Sigma at best. This means that from a sample of 10 data items (e.g., elevation or total depth), there is a 50:50 chance of selecting one or more defective items. The impact this inaccuracy has on decisions has enormous financial implications. Most oil companies are 1–3 Sigma, based on traditional manual quality initiatives.

Given today’s data volumes, manual intervention is impractical. Petabytes of data require repeatable processes in an automated solution with measurable results. InnerLogix\* Data Quality Management was developed by Schlumberger Information Solutions (SIS) for the E&P industry to address both processes and data, with a methodology that provides a systematic approach to assessing, improving, and controlling data. With DQM products and methodology, you can now have quality metrics and confidence in your data.

Quality Score (% Correct)	Sigma	Selection Size †	Resource Cost
30%	1	-	>50%
69%	2	-	40%
93.3%	3	10	30%
99.38%	4	112	20%
99.98%	5	3,466	15%
99.9997%	6	231,049	<10%

† The number of data items that must be selected before there is a 50:50 chance of one or more defective items.

*Most oil companies are 1–3 Sigma based on traditional manual quality initiatives.*

### DOMAIN EXPERTISE

The DQM solution is a combination of technology and process. Design and implementation require expertise and a collaborative approach. A custom DQM model must be designed for each unique environment. Schlumberger consultants design scalable DQM models to address the most obscure quality defects in a workflow, working with you to identify problem areas that are impeding the ability to make business decisions with trusted data.

Trust in your data means less time is needed to reach a decision. The DQM process generates trust in the data by establishing rules for its management. Our consultants are experienced in identifying the high-value items and quickly designing a process to manage them through the InnerLogix defect-tracking and resolution applications.





The InnerLogix DQM solution can help with all your ongoing data issues:

- creating and/or maintaining corporate repositories
- improving data quality continuously
- populating a corporate data store with enhanced project data
- integrating data of known value into the asset team
- maintaining consistency between data stores
- defining business rules for data quality improvement
- measuring and reporting data quality metrics
- data loading
- data migration
- merging data stores
- removing duplicate data
- performing a data health check for a newly acquired asset
- replacing internal data quality processes.

The incorporation of a DQM process ensures that the company receives the maximum return on investment, and it builds confidence in the quality of data.

## SERVICES ENGAGEMENT

Our consultants will work with you to design business rules for the assessment of data based on identified problems across one or more data sources. Next, an initial assessment is performed to establish project baselines for quality measurement. Business rules are then designed for the correction of data, and consistent, measurable data quality is established. Finally, automated, ongoing data quality check processes are implemented.

Consultants can help take the first step toward reliable data by working to create business rules based on seven primary measurement categories:

- **Completeness:** Does the data attribute (e.g., elevation) exist?
- **Consistency:** Do the attributes of each item agree between data sources?
- **Content:** Is the data item (e.g., well header) missing?
- **Validity:** Does the data make sense—does it honor science and your standards?
- **Uniqueness:** Do you have duplicate items in your datastore?
- **Audit:** Has the item (e.g., well header) been modified, added, or deleted?
- **Data changed:** Has the attribute (e.g., elevation) been modified?

The DQM from SIS is scalable to any size business. It addresses multiple data repositories, tracks data quality metrics, and provides a global support network. The incorporation of a DQM process from SIS will not only build confidence in the quality of the data, it will ensure that the company receives the maximum return on investment and makes better exploration and production decisions.

## SCHLUMBERGER INFORMATION SOLUTIONS

Schlumberger Information Solutions (SIS) is an operating unit of Schlumberger that provides software, information management, IT, and related services. SIS collaborates closely with oil and gas companies to solve today's tough reservoir challenges with an open business approach and comprehensive solution deployment. Through our technologies and services, oil and gas companies empower their people to improve business performance by reducing exploration and development risk and optimizing operational efficiencies.

**E-mail [sisinfo@slb.com](mailto:sisinfo@slb.com) or contact your local Schlumberger representative to learn more.**

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