geoconvention
Calgary • Canada • May 15-19 2017

Regulatory Data Standards

Sean Udell (Regulatory Data Standards committee member)
Vice President, Operations & Technology, geoLOGIC systems ltd.

Summary

Today's legacy of legislative and technical regulatory architecture was developed specifically to fit the needs and purposes of each region; in many cases, rules of primacy determine where regulatory authority resides. This practice allows each regulator to develop legislation tuned to the specific social, economic and environmental needs of their constituency.

While this is locally efficient, the cross regional impact creates profoundly difficult consequences. Regional vocabularies, unclear or conflicting expectations about data and information to be collected and shared, and proprietary management systems have resulted in disparate, complex, contradictory, and often confusing global regulatory climates. Current social and economic constraints are driving regulators to work cooperatively to resolve these problems. Regulators from around the world are working together to identify key areas in which mutually agreed data standards or best practices can make regulators more efficient, and relationships between regulators and industry more effective.

Introduction

Typically, a governmental authority distributes the necessary functions of approving and overseeing the complex E&P life cycle processes among one or more agencies who develop a series of technical systems for receiving, processing and managing the information that moves between themselves and industry. While the E&P life cycle processes tend to have commonality between regions, the systems developed within the various agencies are unique to each agency.

At the same time, operators must address the complexities of managing applications and compliance processes for every agency in each government under whose authority they do business. Developing policies and procedures to conduct operations in each region, training staff and developing the systems to respond appropriately to each regulator is costly and time consuming.

There is now a growing movement for much greater scrutiny of all E&P operations by stakeholders including Operators, land owners and NGOs. This scrutiny requires increased consistency in responses from multiple government bodies within a jurisdiction as well as cross jurisdictional boundaries. There is an expectation today of transparency and global access to timely and integrated information and analysis which is unprecedented and a challenge to regulator reputation and trust.

The regulatory expense of altering the many bespoke legacy systems implemented and the cost of developing new bespoke solutions independently is not affordable in today's economic environment. Reducing the regulatory burden for managing the cost of compliance for regulators and operators is essential.

Industry and Regulators around the world are facing complex social issues. They must answer to their stakeholders in the areas of: water quality, waste management, air quality, public safety and transparency. They must increase efficiency and effectiveness and develop mechanisms to enable transparent access to information. These issues are the "Tipping Point" for regulator collaboration in addressing the lack of standard definitions and taxonomy.

Ensuring that relevant data is collected, and fit for purpose is critical to all regulatory agencies. Improving interoperability and the clarity of data across jurisdictions is in the best interests of all stakeholders. Co-locating diverse information types allows stakeholders to increase transparency and the usefulness of the data to various agencies who may share data resources.

Theory and/or Method

The Professional Petroleum Data Management Association has formed a standing Regulatory Data Standards Committee comprised of representatives from international Regulators, Operators and Data Vendors that comes to consensus and prioritize challenges in the areas of disambiguation semantics, data quality, and data storage. As challenges and opportunities are identified and prioritized, industry work groups are formed to create products and information that are needed to resolve the challenges. Industry experts support each recommendation with specific guidance on adoption by regulators, industry, consulting companies and others.

- Semantics – to disambiguate key terms and phrases in regional vocabularies
- Quality – define what it means for data to be measurably complete, consistent and cohesive
- Data model – develop a mechanism to manage data through the life cycle without attenuation or corruption

Examples

PPDM members have employed the disambiguation methodolody to create two vocabularies. *What is a Well* clarifies and describes the existence of the components of a well configuration that are important to different stakeholders through the life cycle. *Well Status and Classification* decompiles and standardizes descriptions of the many kinds of information typically contained in “well status” or “well type” value lists. Onging in 2016, a work group is analyzing the contextual framework around the term “completion”, and will deliver a disambiguation mechanism early in 2017.

Publishing clear expectations that define and describe “good” data throughout the life cycle helps all stakeholders create and manage data that is not only fit for their own purposes, but that will be suitable for stakeholder functions that follow on from the complex life cycle processes in our industry. A growing library of clear, testable criterial for key data types has been under development at the Professional Petroleum Data Management Association for several years. This library will continue to evolve to support regulator – industry information exchanges through the endorsement and participation of the Regulatory Data Standards Committee.

Conclusions

Developing industry standards and best practices is indeed difficult! However, with patience and determination, a collective approach that is pragmatic and specific can deliver useful results. The process of regulatory convergence will not be swift, but if we are to be successful, the foundation must be set now.

Acknowledgements

Professional Petroleum Data Management Association web site (www.PPDM.org)

Foundations, the Journal of the PPDM Association, Volume 3, Issue 3,