



# 3rd Annual INCOSE TGCC Systems Engineering Conference

bp



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Hosted by BP

## 'Digitalization Across The Life Cycle'

Start Time	Speakers	Presentation	Organization
8:00 AM		Breakfast	
8:30 AM	Chris Bellows, Jason Baker	Welcoming and Introductions & O&G WG	INCOSE
9:00 AM	Rob Kelly	Keynote: Digital Transformation in BP's Upstream	bp
9:50 AM	Mike Sprawls	Chevron's Journey to Digitize the Engineering Lifecycle	Chevron human energy
10:25 AM		Break	
10:45 AM	Jonathan Harker	Requirements Digitization - The Global Wells Organization Journey	bp
11:20 AM	Don Gelosh	In the Complex Age of Digitalization, Professional Development is Crucial	WPI
11:55 AM	Javier Canon	Dynamic Integration of Knowledge: Bridging the New Digital Divide	MAANA
12:30 PM		Lunch	
1:50 PM	Dan Hartman	Keynote: Gateway Program, Phase I	NASA
2:40 PM	Tami Katz	Challenges Addressed During the First Time Trying to Apply MBSE	SNC SIERRA NEVADA CORPORATION
3:15 PM		Break	
3:35 PM	Michele Reed	Requirements Management Implementation: Overcoming Challenges	Shell
4:10 PM	Jenny Devolites, Tony Williams	Benefits of a Digital Collaboration Environment on the Orion Ascent Abort 2 Test	NASA JACOBS
4:45 PM	Anthony Bullion	Closing Statements	INCOSE

Start Time	Demonstrations
9:50 AM	IBM: Room 210 Applying IBM Watson to Requirements
2:40 PM	Siemens: Room 210 Polarion and Rulestream: Automate RM and Design
2:40 PM	QRA: Room 220 QVscribe: Automate the INCOSE Requirements Guide
Start Time	CSEP Exam
10:00 AM	Room 220

**Reception: 5:00PM**



14656 Grisby Rd, Houston TX

Date: October 10th, 2019

Location: BP Helios Plaza

Tickets: [www.tinyurl.com/TGCC2019](http://www.tinyurl.com/TGCC2019)

### Special Thanks to Our Sponsors

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## MANAGING COMPLEXITY IN LARGE TECHNICAL ECOSYSTEMS

"The complexity for minimum component costs has increased at a rate of roughly a factor of two per year."

~ Gordon Moore, Co Founder Intel, Author of Moore's Law

### Siemens INCOSE SE Conference Presentation 2019

In an environment with continual market volatility, Companies must rethink their entire asset lifecycle by reducing cost of operations, redesigning and simplifying projects, mitigating risk, increasing predictability, and maintaining compliance. This all begins in the project planning phase with requirements and specification management.

#### Companies struggle with managing complexity and efficiency.

Engineers are managing documents alongside of their other daily tasks. This takes the focus away from the work that is mission critical. It becomes difficult to search and find specific data that is current and unique to a specific revision.

**Polarion** provides a way to replace the use of MS Office documents that lack the flexibility for efficient data utilization. Using Word or Excel, traceability can only be achieved at the 'referential' level. Thus making research and association lengthy, tedious and inefficient. This approach also limits the scope of traceability throughout the entire asset lifecycle.

Projects are at risk – There are higher safety and reliability expectations, multiple agencies and jurisdictions, and regulations are evolving with growing regularity. Polarion helps to manage specifications by bringing all data into one place for effective project management.

**Rulestream** allows product/process experts to capture the rules, best practices, and processes on how to engineer, design, manufacture and quote on jobs quickly and efficiently. Designed specifically to address the challenges facing companies that need to reduce the time to value on assets.

Rulestream automatically generates new designs from the functional requirements. Through its easily configurable integrations with computer-aided design (CAD) and desktop systems, it can be used to accelerate bid-and-order engineering processes by automatically generating engineering outputs, including bills-of-material (BOMs), 3D models, drawings, visualizations, work instructions and technical documentation.

Of course, These are only a few of the challenges disrupting industry, today...

So how can we help? Come and see Siemens Solutions at the **2:40 demo** to find out.



## Better requirements management benefits all

### What are the challenges?

Customers are demanding increasingly interconnected, feature- and experience-rich, intelligent products. But how can you successfully compete in this highly demanding marketplace? And how can you remain competitive while managing product development with traditional tools such as email, Microsoft® Word, Excel, and Visio?

With today's rapid pace of product design and delivery, it's absolutely paramount that you understand your stakeholders' expectations. Then, your ability to incorporate and integrate disparate data to enhance user experience—while efficiently meeting user and regulatory requirements—can separate the winners from the rest of the pack.

In this brutally demanding environment, product teams need a *single source of truth* to help streamline their engineering development, rather than the complexity of multiple tools and formats.

**Superior requirements management is the cornerstone of every complex product.** Requirements management is the starting point in the development lifecycle. Efficiently managing requirements from inception, design, and test through to product introduction ensures that your product delivers the results for which it was designed.

With proper requirements management enablement, companies have **significantly reduced development time, total cost, quality rework, and overall time spent on requirements.**

### How IBM IoT can help

Capture, trace, analyze, and manage variants and changes to requirements while maintaining compliance to regulations and standards and business needs. The scalable IBM Engineering Requirements Management solution helps optimize the creation, communication, collaboration and verification of requirements. Now it's available with Watson AI extension so that engineering teams can more easily flag poorly written requirements and receive real-time coaching on how to improve them. Requirements Management is available on premises and in the cloud, it allows you to get up and running quickly.

IBM also offers a complete standards based Engineering Lifecycle Management platform that extends our requirements management product with seamlessly integrated engineering test, workflow management and architecture management.

The IBM Engineering Test Management solution provides teams with the tools they need to seamlessly share information across product stakeholders and across the enterprise. It uses automation to speed project schedules and to report on metrics for informed release decisions.

IBM Engineering Workflow Management administers plans, tasks, project status, as the critical link between required and delivered work. It provides flexibility to adapt to any process, which enables companies to adopt faster release cycles and manage dependencies across both small and complex development projects. This solution provides no-charge server software and flexible pricing models.

### Outcomes

**High quality requirements and good engineering management practices in the development process (agile, iterative, or waterfall) lead to better outcomes.** Engaging stakeholders—early and often—in defining and validating requirements improves the likelihood that projects will deliver what customers want and need.

Improve the management of project scope and cost throughout your organization and supply chain by understanding what changes have been made, who made them, when they were made and what they affect. Improve product quality and development efficiency by building the right product the first time.

Delivering a quality product to your stakeholders on time doesn't have to be stressful. To explore how the right tools are helping organizations simplify requirements management and accelerate time to market, **visit our website at:** [ibm.co/requirements](https://ibm.co/requirements).



# QVscribe

qracorp.com



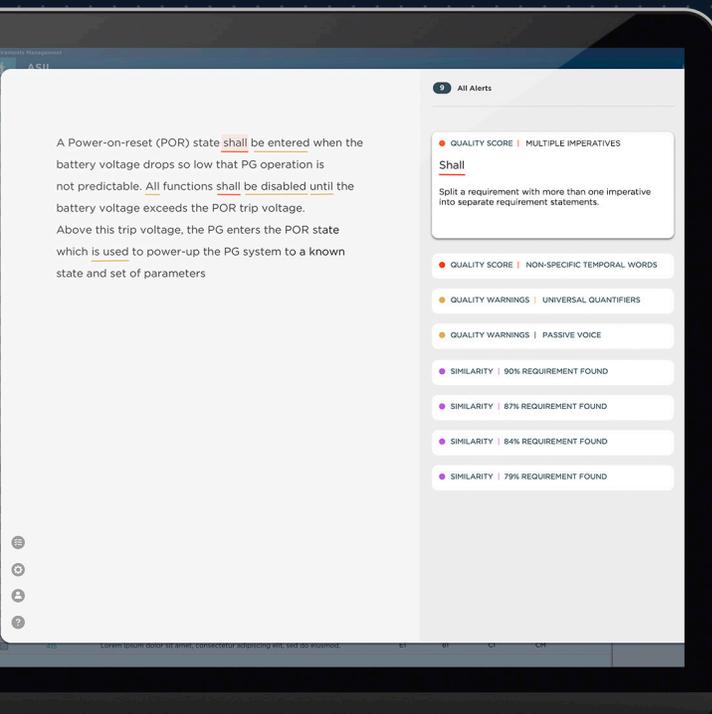
## Rethink Requirements

**Live Demo - 2:40-4:40pm - Room 220:  
“QVscribe: How to Automate the INCOSE  
Guide for Writing Requirements”**

**For more information visit James Carr at  
our booth in the lobby next to the snack  
table or message [james@qracorp.com](mailto:james@qracorp.com)**

See QVscribe in action today with MS Word and Excel and get an exclusive sneak peek at QVscribe 3.0 with new features and direct integrations with dedicated management tools.

Learn how to reduce risk and costly rework by automatically enforcing INCOSE best practices. Eliminate ambiguities, find inconsistencies, and generate actionable reports to reduce your quality review times by 75% or more.



### QVscribe Capabilities

#### Analysis Type

Natural Language Processing of requirements for quality and consistency analyses.

#### Key Quality Indicators

- Vague Language
- Optional Escape Clauses
- Indefinite Pronouns
- Immeasurable Quantifications
- Excessive Combinators
- Improper use of Imperatives
- Incomplete Sentences
- Passive Voice
- Justification

#### Terminology & Unit Consistency Analysis

Assistance to verify that only correct terminology and measurement units are present in the document.

#### Requirements Similarity Analysis

Assessment of requirements similarity to assist in eliminating redundant or contradictory requirements.

#### Analysis Reports

Configurable analysis report generation - including full quality analysis, document summary, unit consistency results, analysis configurations, and recommendations.

#### Requirements Export

Export of individual requirements from MS-Word into CSV formats.

#### Enterprise & Team Customizations

Shared analysis configurations ensure each author is writing requirements consistently across the entire organization.

#### Automate INCOSE Conformance

Automatically check for compliance with 75% of the rules listed in the INCOSE Guide for Writing Requirements