Bug Prediction Model - Maxwell QA Lab

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Schlumberger

About Schlumberger

- Schlumberger is the world's leading provider of technology for reservoir characterization, drilling, production, and processing to the oil and gas industry.
- Working in more than 85 countries and employing approximately 100,000 people who represent over 140 nationalities.
- Schlumberger supplies the industry's most comprehensive range of products and services, from exploration through production and integrated pore-to-pipeline solutions for hydrocarbon recovery that optimize reservoir performance
- Our mission is to provide integrated workflows and solutions that give our stakeholders competitive advantages to serve our clients.

Schlumberger

Services & Products

- Seismic
- Drilling
- Characterization
- Completions
- Subsea Production
- Production
- Processing & Separation
- Well Intervention
- Technical Challenges
- Business Solutions
- Software

Schlumberger Software - BGC

BGC Beijing GeoScience Center

Schlumberger Center of Excellence for Real-Time Software

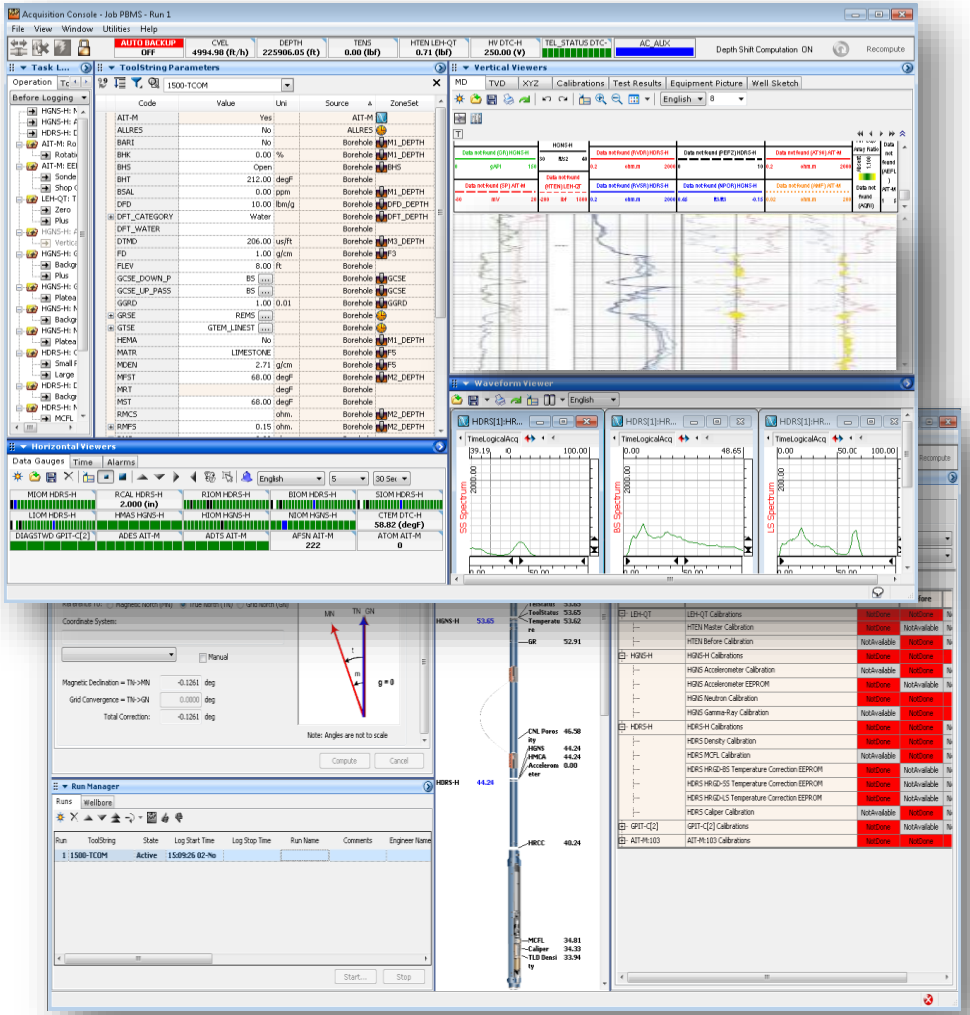
Our mission is to provide integrated workflows and solutions that give our stakeholders competitive advantages to serve our clients.

BGC Product Lines

Drilling	Maxwell	InterACT	Interpretation Engineering
Well Construction Planning Platform	Acquisition Platform	Infrastructure Platform	Formation Testing, Geomechanics
TDI/PTK, DOX, Shared Component, IDEAS	Maxwell, WinchSafe	InterACT	Techlog, Microseismic, Well Placement, Mistral, Toucan, IE Services
D&M, M-I SWACO, DT&R, B&AT, SIS, GSS, IPM	*WL, D&M, WIS*	*RCG, D&M, RPG, IPM, SIS*	*WL, D&M, PTS*

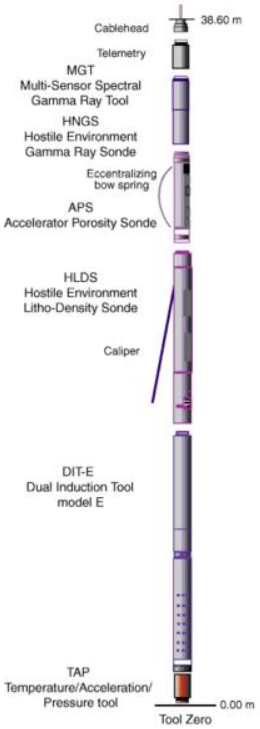
What is Maxwell?

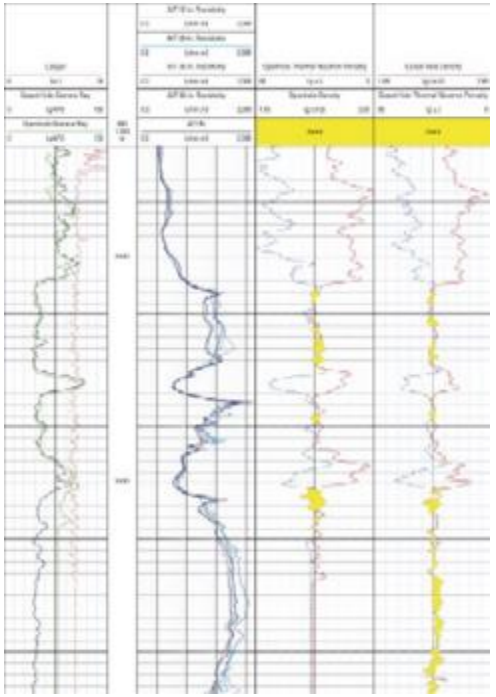
Real time acquisition software acquiring data from downhole sensors. Maxwell **processes, computes, and delivers** the data to provide well site answer products to Schlumberger's Clients.



Maxwell Wireline Logging

Data sending

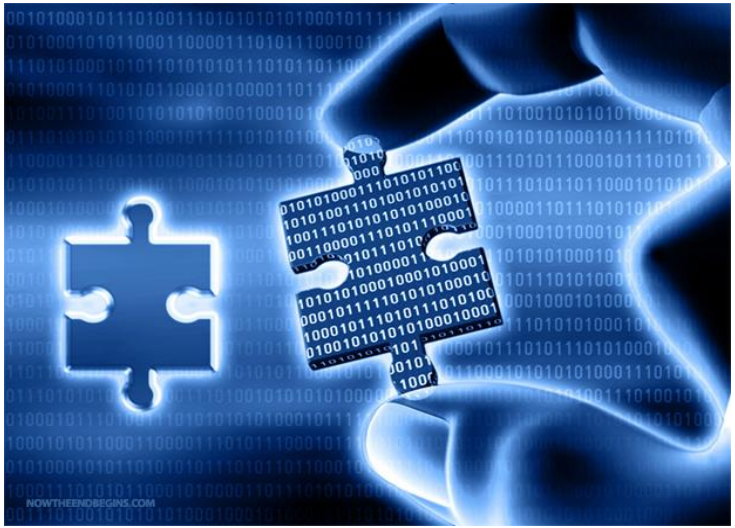


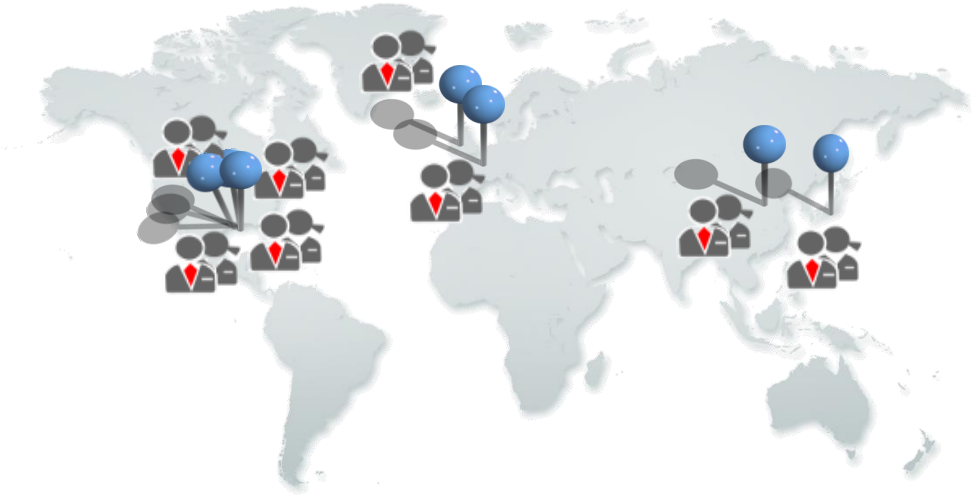


Setup | Acquisition and Control | Deliverables

Maxwell by the numbers

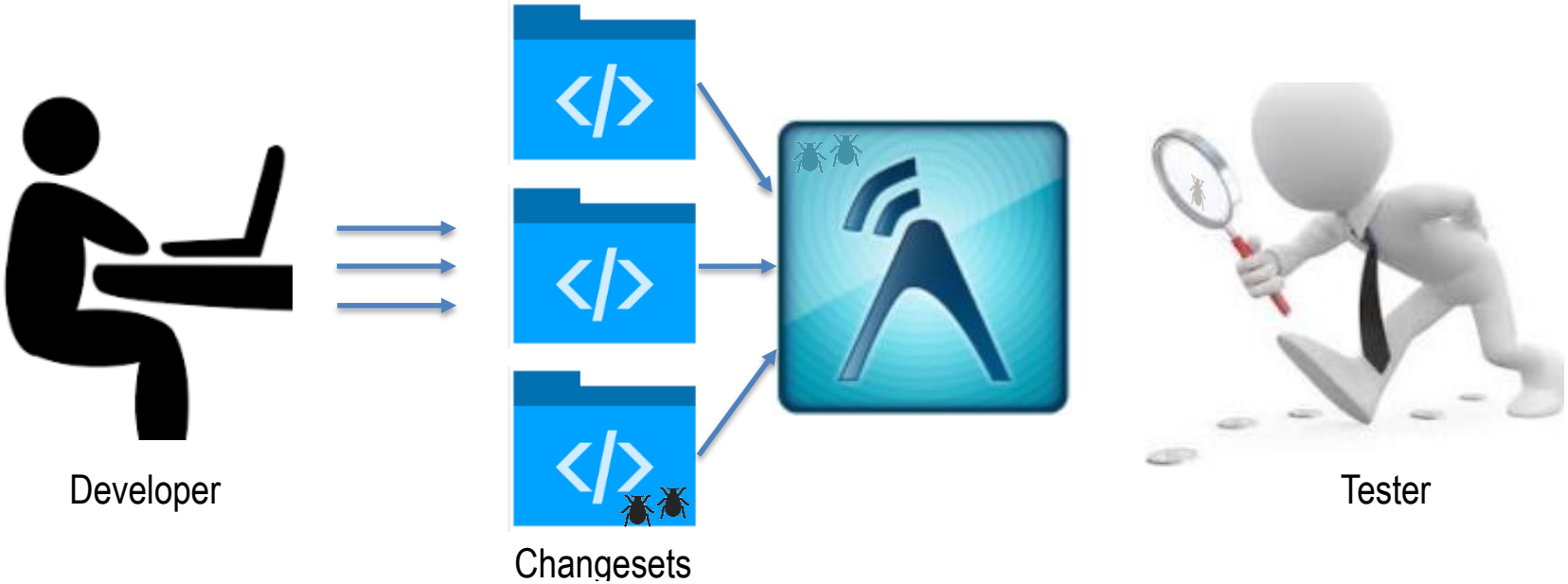
	LOC (M)	Statements (M)
Framework	3.81	1.73
Applications	8.82	2.92



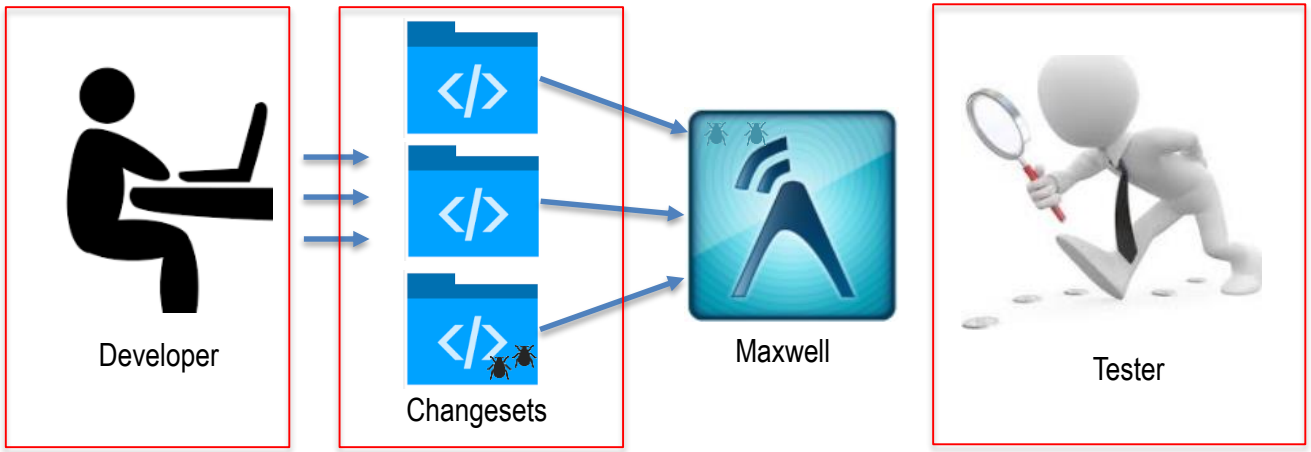


> 100 Contributors in 9 Centers

Maxwell and Bugs



Maxwell Bug Prediction - Problem



12 Million Lines of Code, Single developer does not know full details of code interaction / dependencies

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> 100 changesets per week, requires significant testing and analysis

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Maxwell automation test coverage low, ~50%

Manual test limited and time consuming

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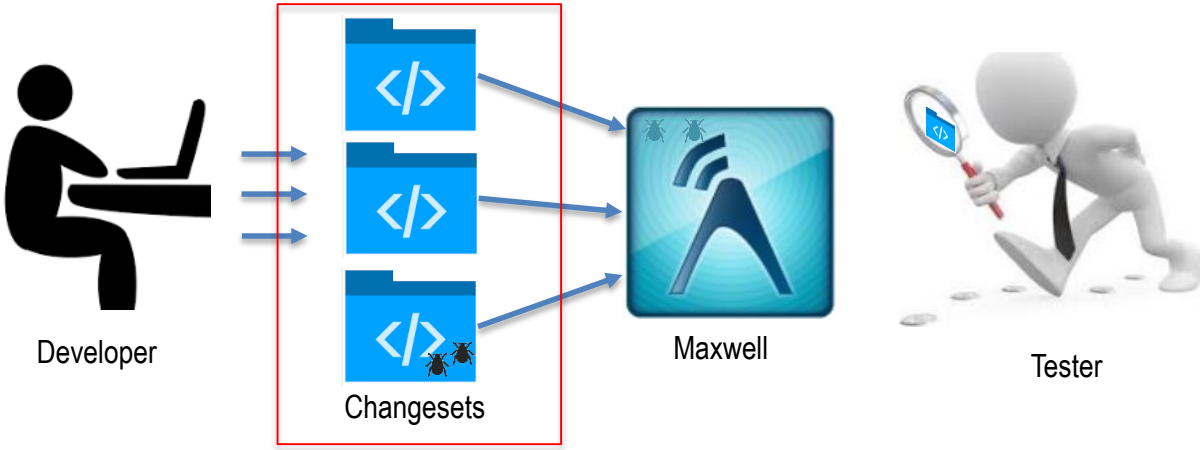
Maxwell Bug Prediction - Solution



Bug Prediction Model:

- Predict which change sets are more likely to cause a bug so we can focus our testing efforts on these.