



PETRONAS

The EP Technical Data Quality Metrics Initiative

Architectural Considerations for Global Governance

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- Objectives
- Requirements for global governance
- Key supporting initiatives
- Architecture elements
- Global governance readiness
- Dashboard designs
- Concluding remarks

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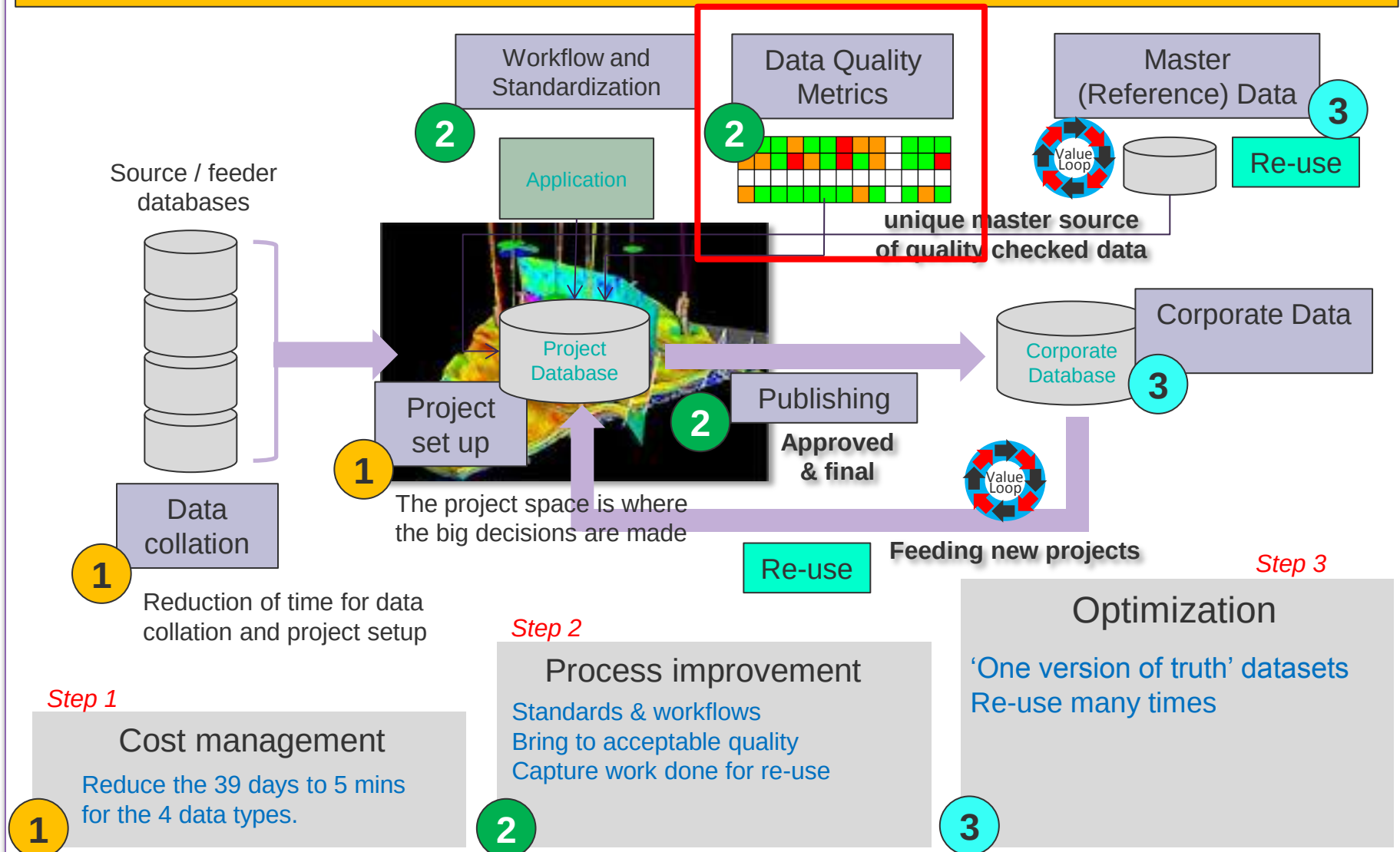
Objectives

- Show the relevance of architecture in addressing business problems
- Explain PETRONAS's Data Quality Metrics initiative within this context

The Role of Data Management in Value Creation

Previous industry studies : Geologists spend up to 60% of their time looking for & quality checking data for their projects

Recent PETRONAS study : Geologists spend 39 days looking for & quality checking basic data (well header, checkshots, deviation and well logs) for their projects. This is an estimated 20% of their time.



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Minimum Requirements for global governance

- Central data quality team
- DQ tool with global reach
- Ownership & accountability framework
- Standardized application and database portfolio

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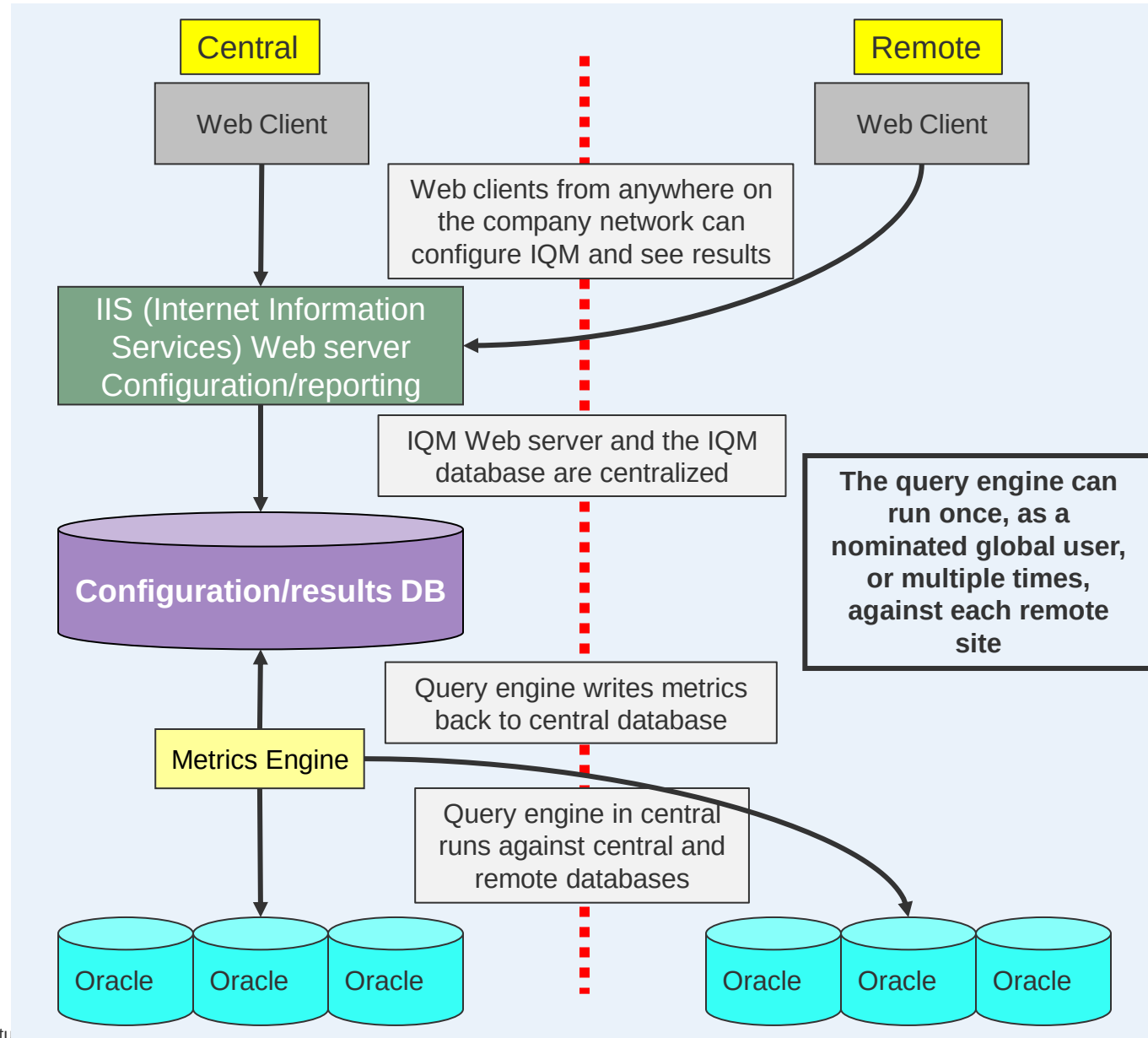
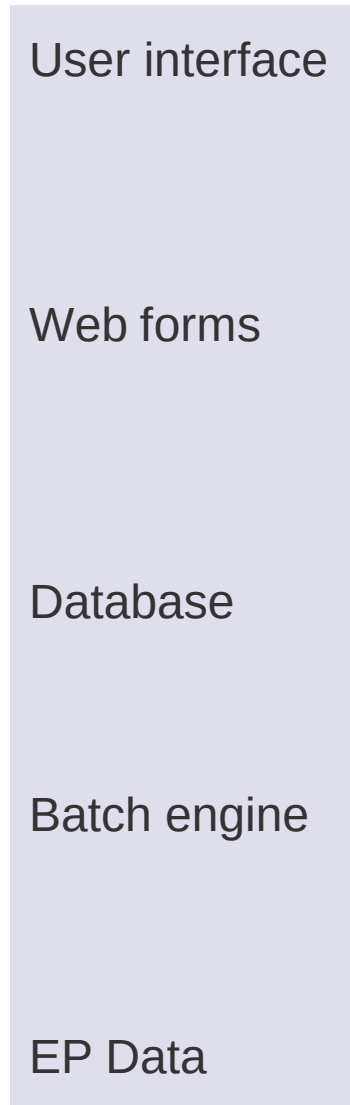
Key supporting initiatives

- Data standards program
 - Data type standards, databases, reference data etc
- Data quality metrics initiative
 - Business rules for - Data type (completeness, integrity, workflow), projects (structure), databases (footprint compliance), standards (compliance)
 - Governance dashboards for transparency
- Technical Data Framework (TDF) rollout
 - Guidelines, roles & responsibilities, accountability structure
- Application standardization
 - Technical Applications Portfolio Management

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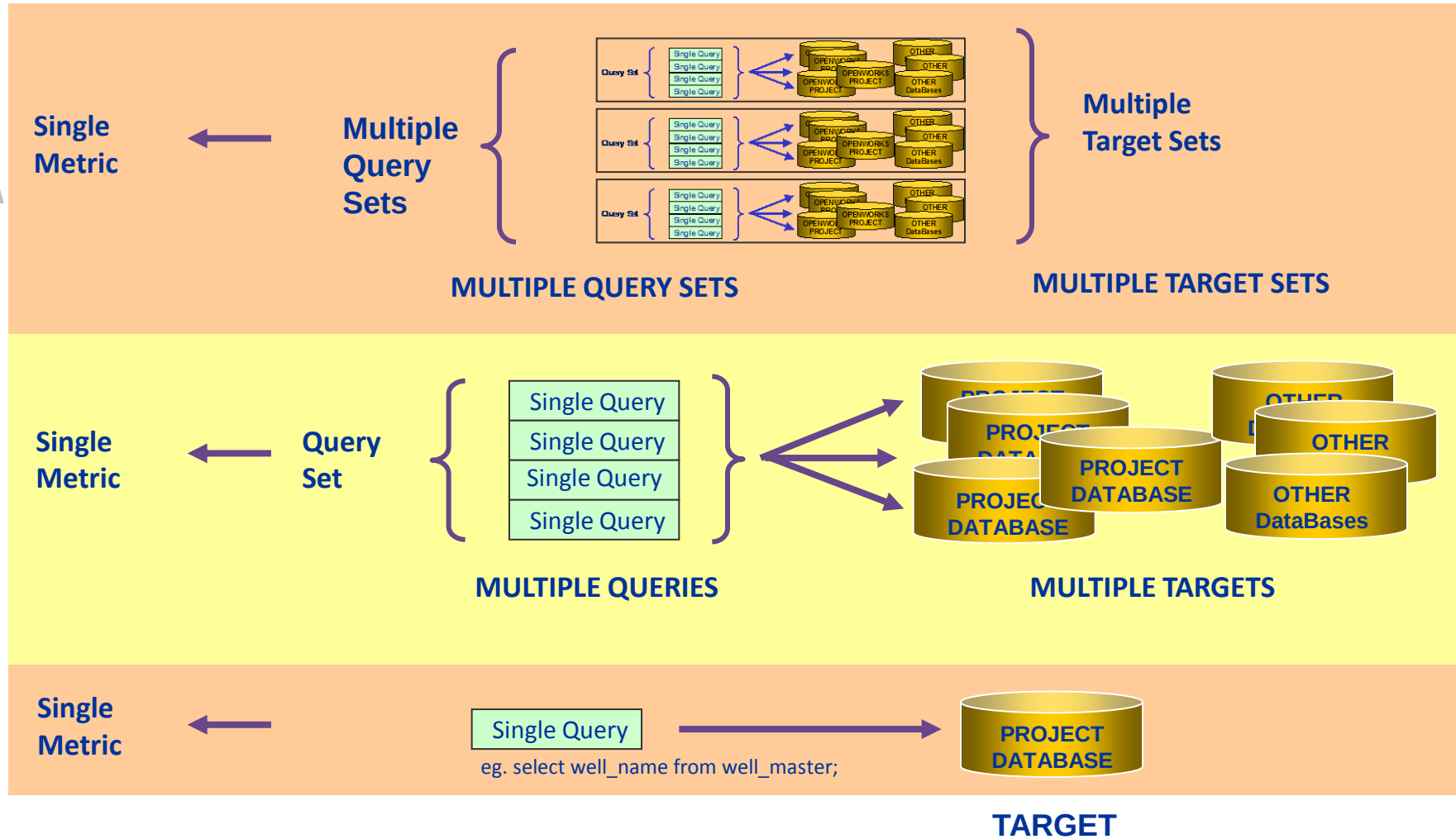
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- **Architecture elements**
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IQM - Architecture



Data Quality Metrics Aggregation (concept)

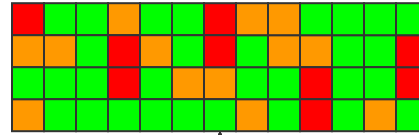
AGGREGATION



Data Quality Metrics Aggregation (practice)

The (Enterprise) Data Quality Trend

The (Enterprise) Dashboard



Business Focus

Regions of Interest

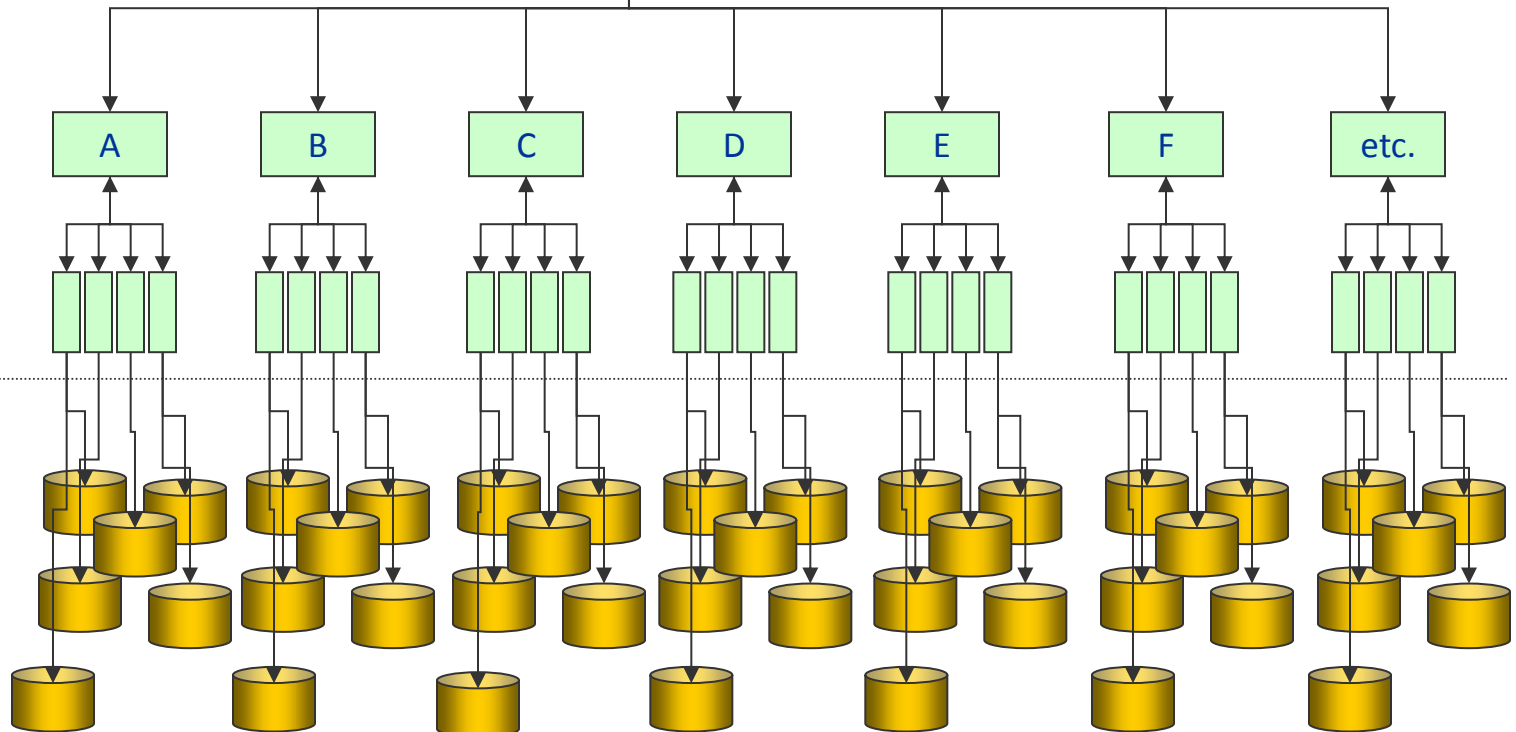
Assets of Interest

Data Focus

Databases of Interest

Data of Interest

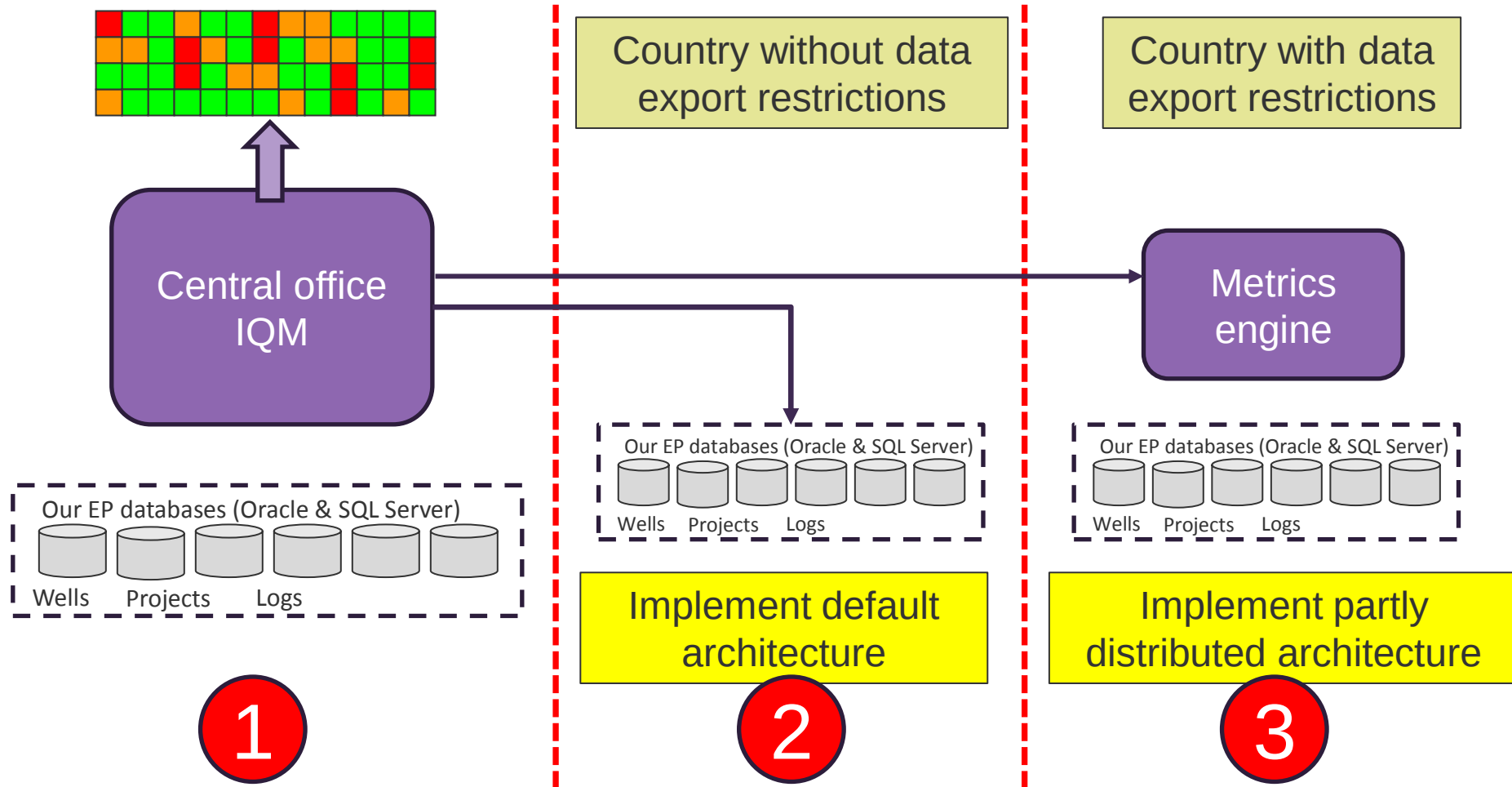
Data Element of Interest



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Global governance - scenarios



IQM – Architecture – Partly distributed

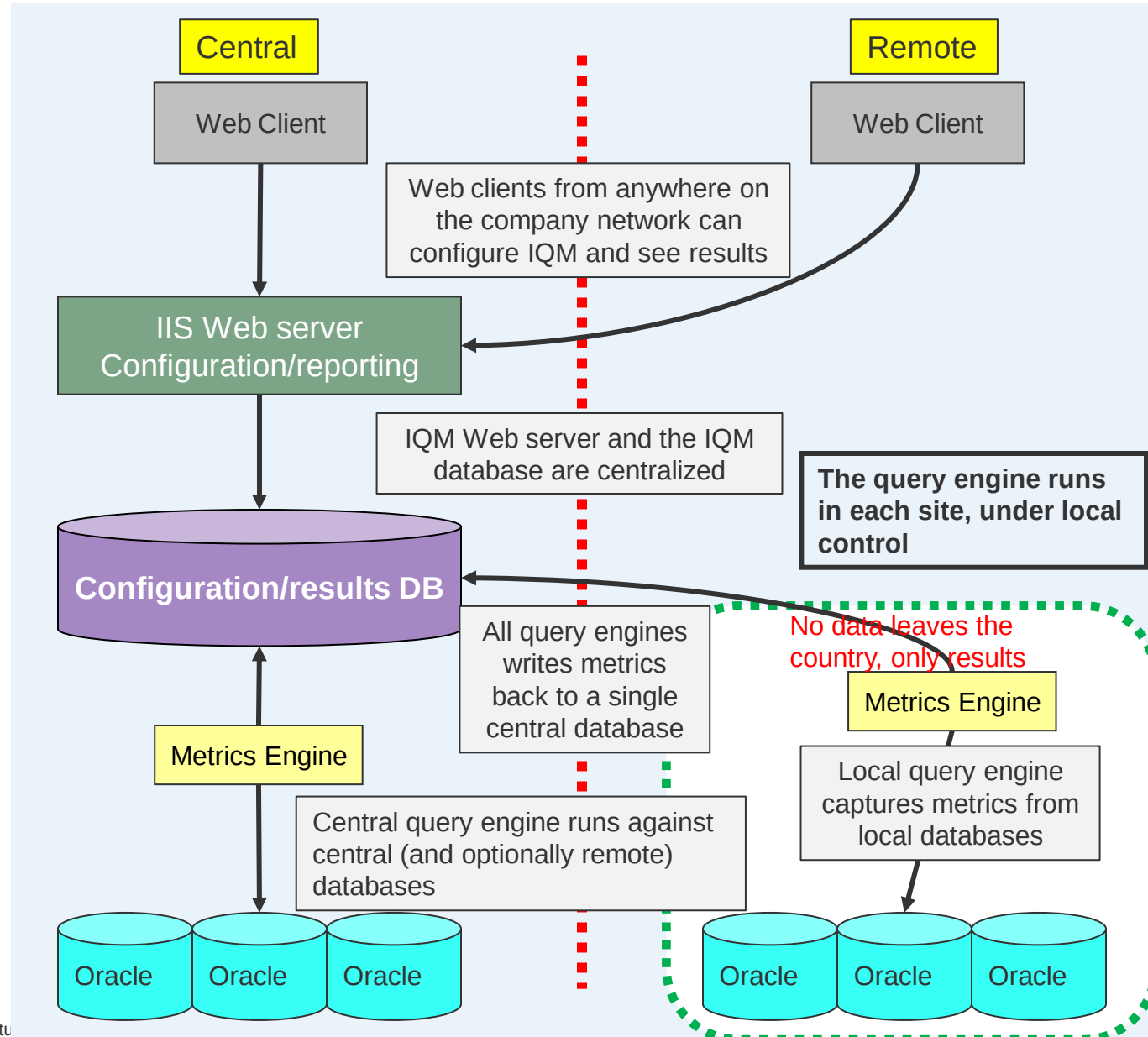
User interface

Web forms

Database

Batch engine

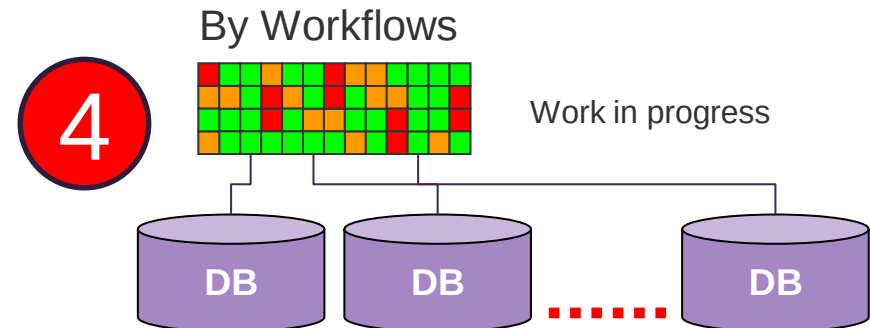
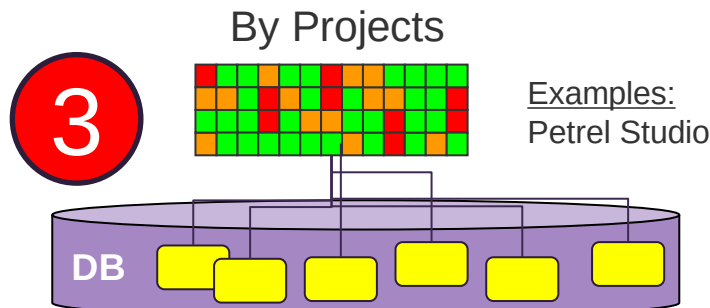
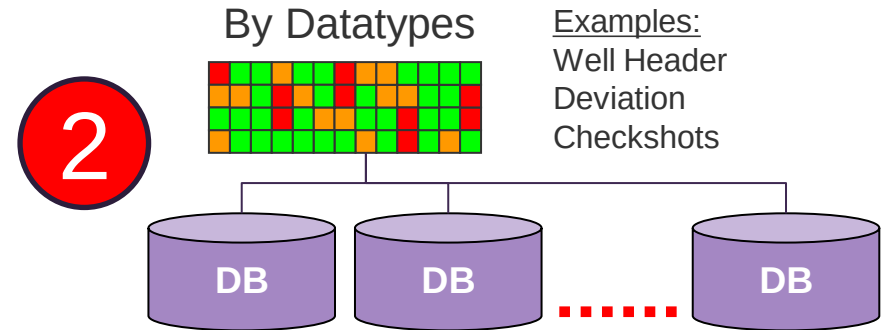
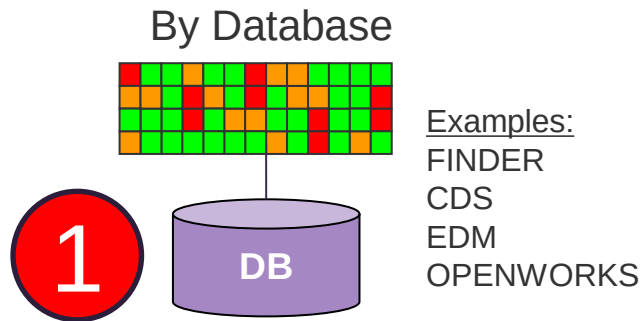
EP Data



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DQ Dashboard designs – 4 candidate structures



DQ Dashboard designs – Combination 1 & 2

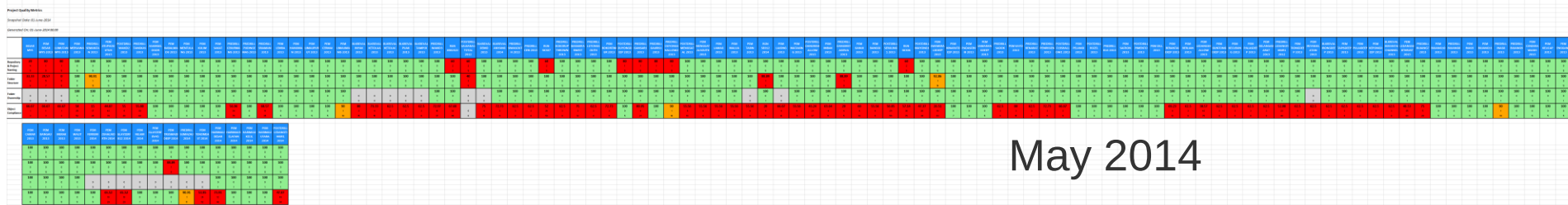
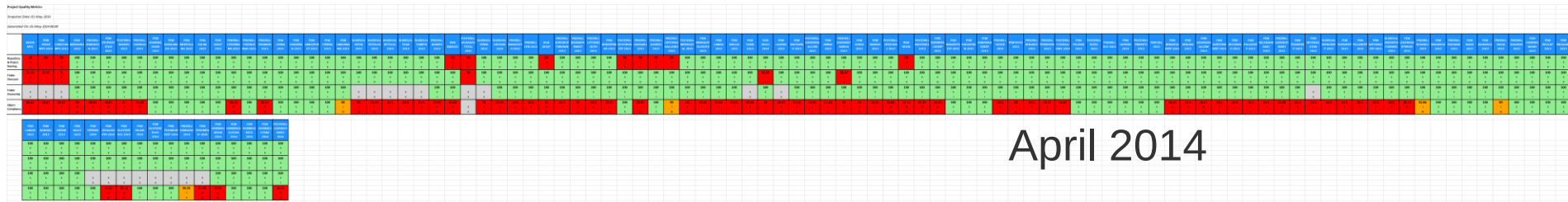
By Database & Datatypes

	A	B	C	D	E	F	G	H	I	J	K	L
PQM/DQM	96.34 214 5841											
Spatial Attributes		57.8 8373 19842	28.02 34950 48558		38.75 8970 14644			25.93 80 108				
Well Header	86.02 3994 28561	75.7 40827 167999	62.19 192633 509436	100.0 0 5550	45.54 106352 195280		61.34 259 670	85.0 8438 56355	74.74 10765 42620			
Well Top/Picks	74.03 87 335	88.13 26768 225490										
Well Synthetics												
Well Checkshots	76.42 29 123	99.84 124 78496										
Well Log Header				97.58 13334 552057								
Well Curve Header				98.91 5357 493119								
Well Deviation Header		95.46 300 6614			79.44 617871 3005199		80.28 4569 23169	56.52 1168 2686	82.24 529 2978			
Rig Operation					73.37 291913 1096235			0.65 8377 8432	77.86 2078 9385			

Datatypes

Databases

DQ Dashboard designs – 3, By projects



Concluding remarks

- **Architecture is an important aspect to consider in any implementation**
- **A data quality metrics initiative needs to be flexible and scalable**
- **Sustainability aspects of such an initiative must not be underestimated**
- **A data quality metrics program is not short term, therefore ensure there are short term deliverables to maintain credibility**



PETRONAS

Thank you