Victoria, BC
November, 2025

Real-Time Process Benchmarking:

Using Data More Effectively

Barriers To Innovation:

The Lack of Initiative Is Costing Millions

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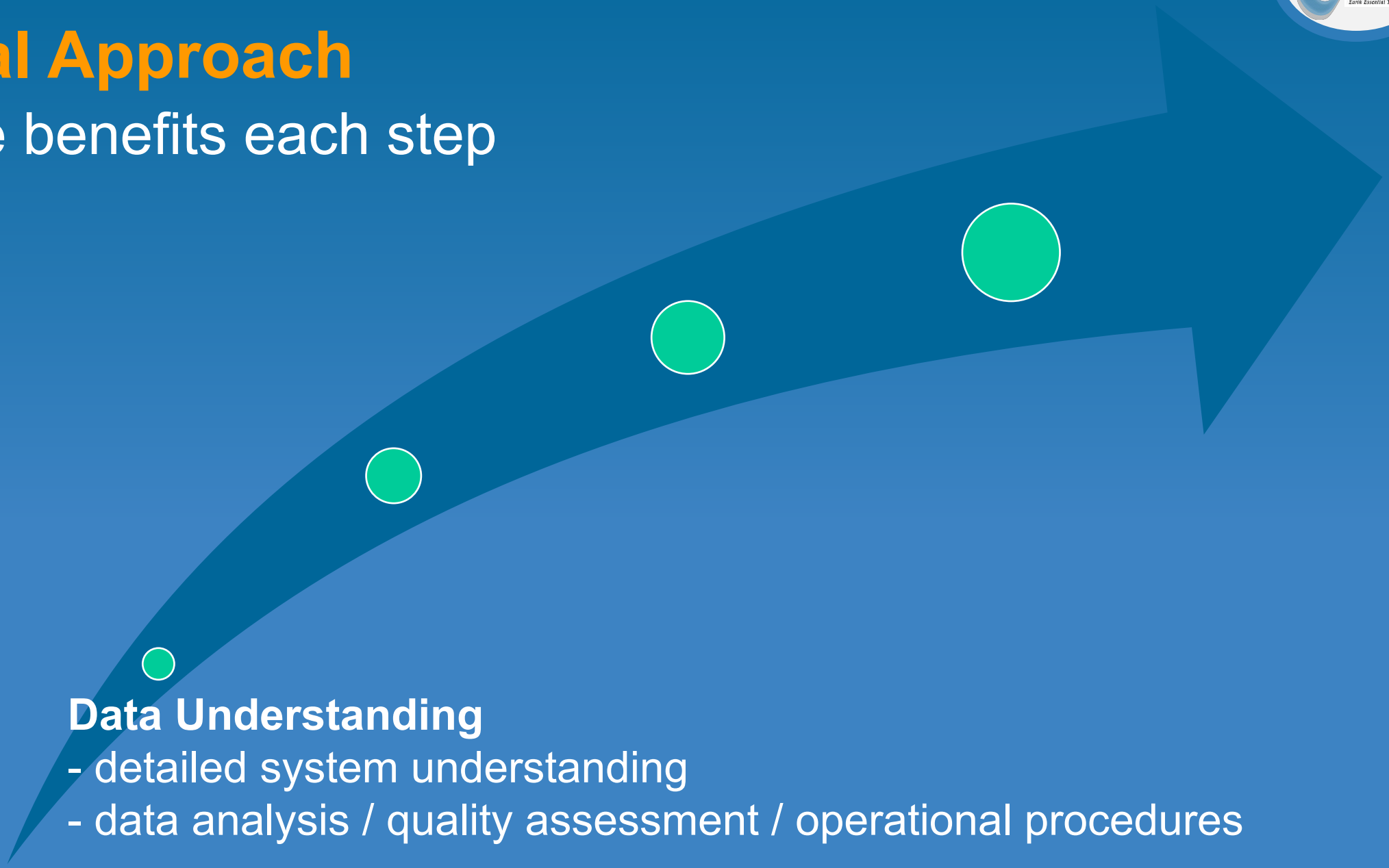
Towards a Digital Solution

General Approach

- Realise benefits each step



Data Understanding

- detailed system understanding
- data analysis / quality assessment / operational procedures

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  - what is this data telling me about my process

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  - **Digital Solution**
    - adoption

*Precision**Now*** Data Analytics *How?*

Manage Entire Data Life-Cycle

- Design, What data and why is it needed?
- Commissioning, Collection, Resource allocation, departments?
- Maintaining, Repairing, Data quality be assured?
- Modifying, Replacing Criteria for replacement?

*Precision**Now*** Digital Solution *Why?*

Numerous Unrealised Benefits

- Process insights; Risk assessments
- Day-to-day operations; Future operations; Situational awareness

Effort

- Already collecting the data
- Can be automated

*Precision**Now*** Digital Solution *Why?*

 95% of GenAI Projects Fail (MIT)

- Domain Knowledge Missing
- Generic Tools, Great Demos, Low Transformation

 Need for Context, Customisation => Domain Knowledge

*Precision**Now*** Data Analytics *Digital Solution*

- Plant Data
- Data Quality Assessment
- **High Quality Data**

Data Quality Solution

- Automated, goal-oriented
- Ease-of-Use data algorithms
- Standardised approaches
- Verifiable QA/QC

*Precision**Now*** Data Analytics *Digital Solution*

Data-Derived Outcomes

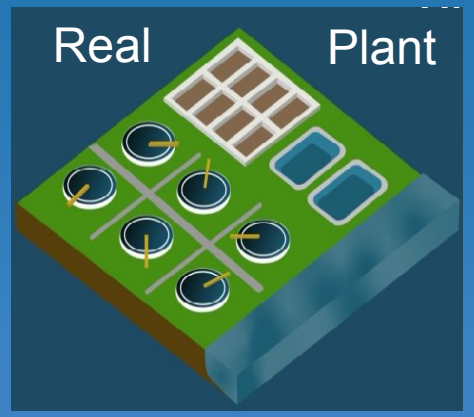
- Real-time process KPIs
- Digital twin output
- Operational parameters
- Risk assessment
- Situational awareness

- **Data / Model**
  - **Operations**
  - Process knowledge
  - **Engineering**
  - Data & design
  - **Control**
  - Control system design
  - **Lab**
  - Reference values
  - **Instrumentation**
  - Sensor info
  - **Management**
  - Decision metrics

PrecisionNow Digital Twin

Simulation Results

Raw Data
(sensors, lab, …)



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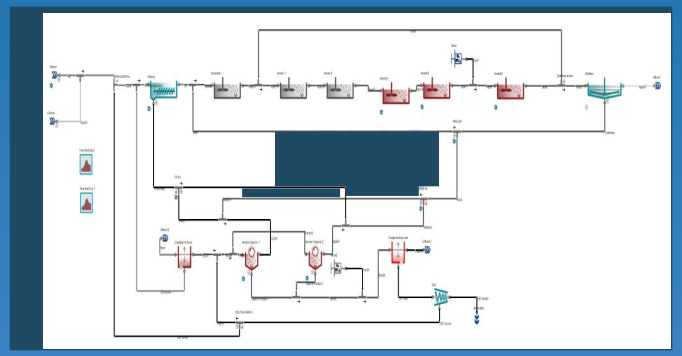

Analysis Results,
Actionable Information,
Situational Awareness

Quality Checked,
Simulation Input Data

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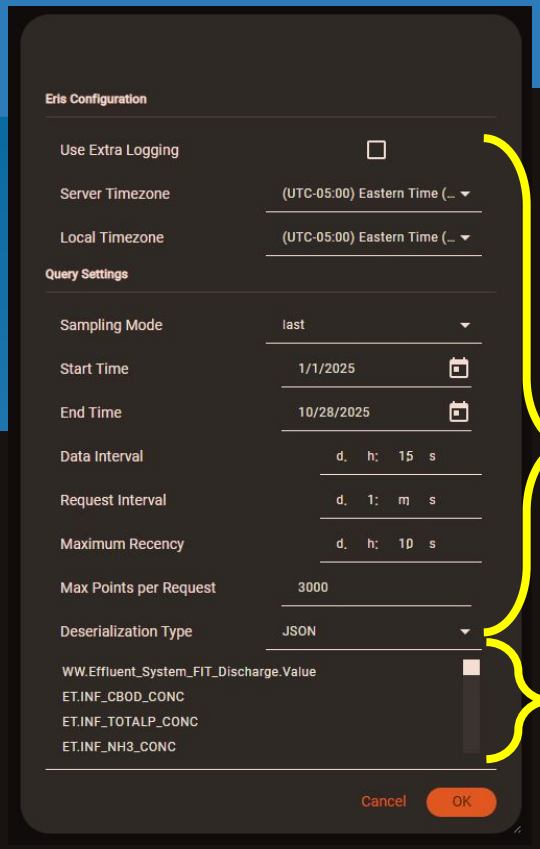
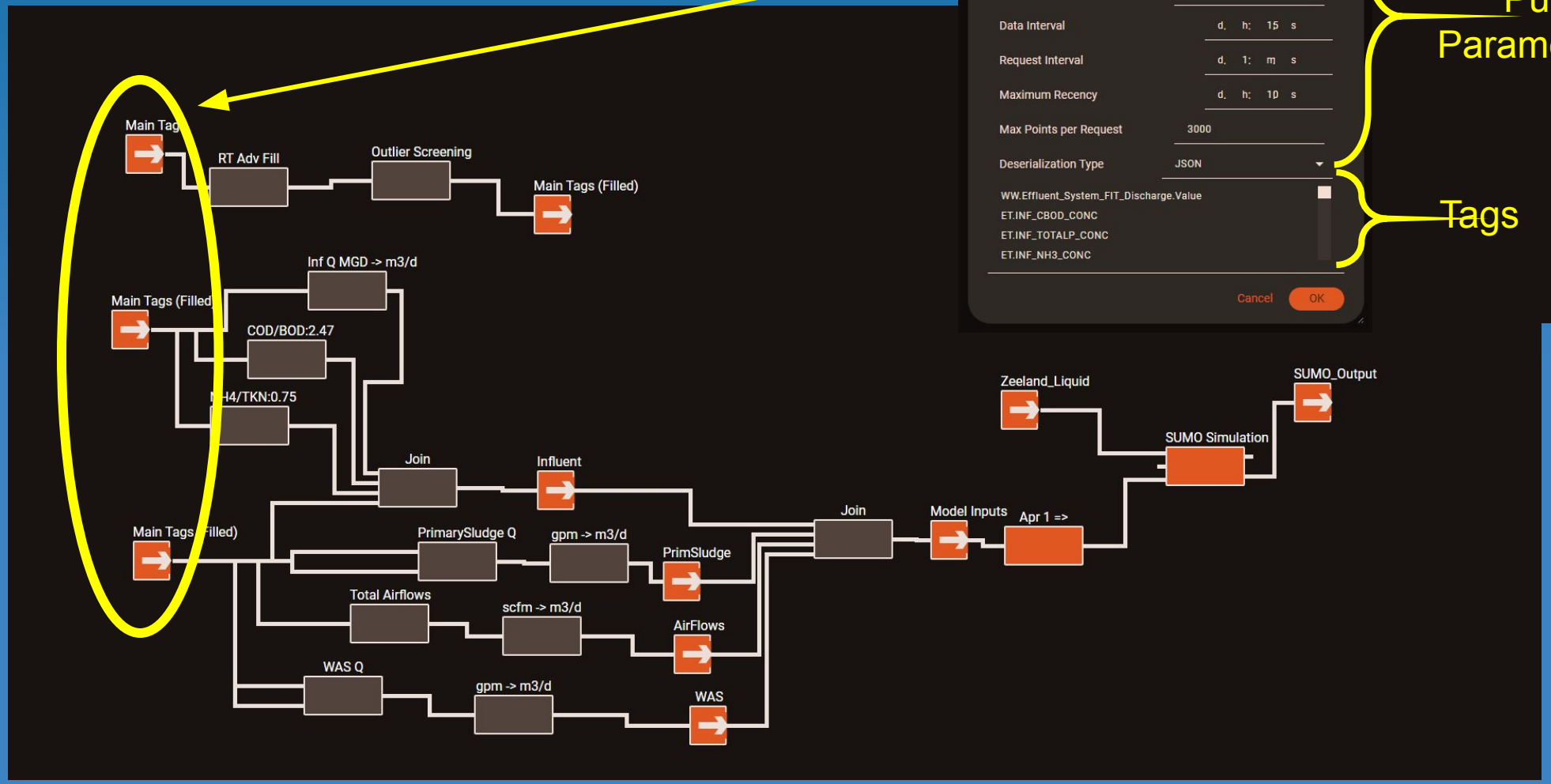


Raw Data Import

Pull Parameters

Tags



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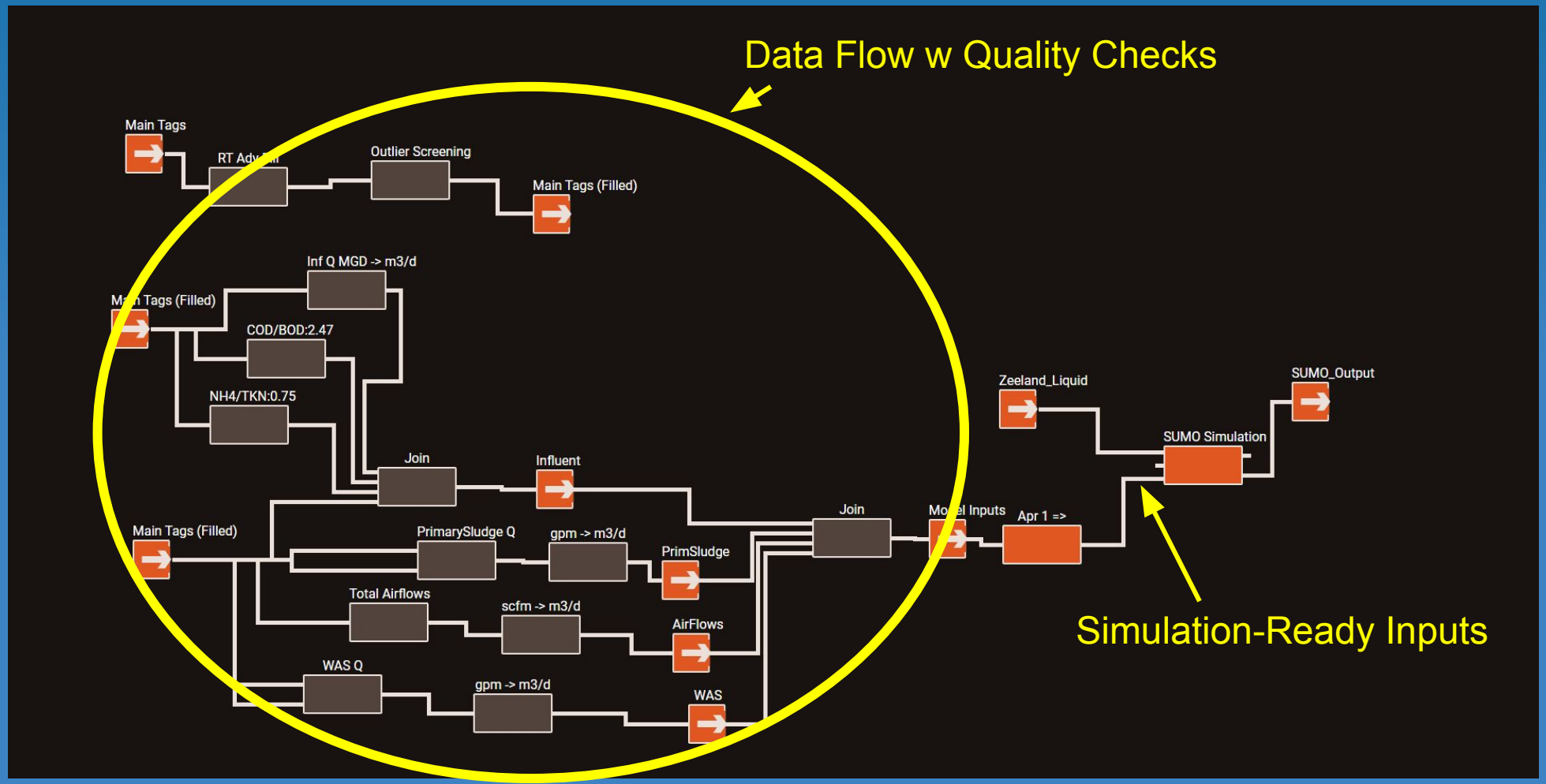

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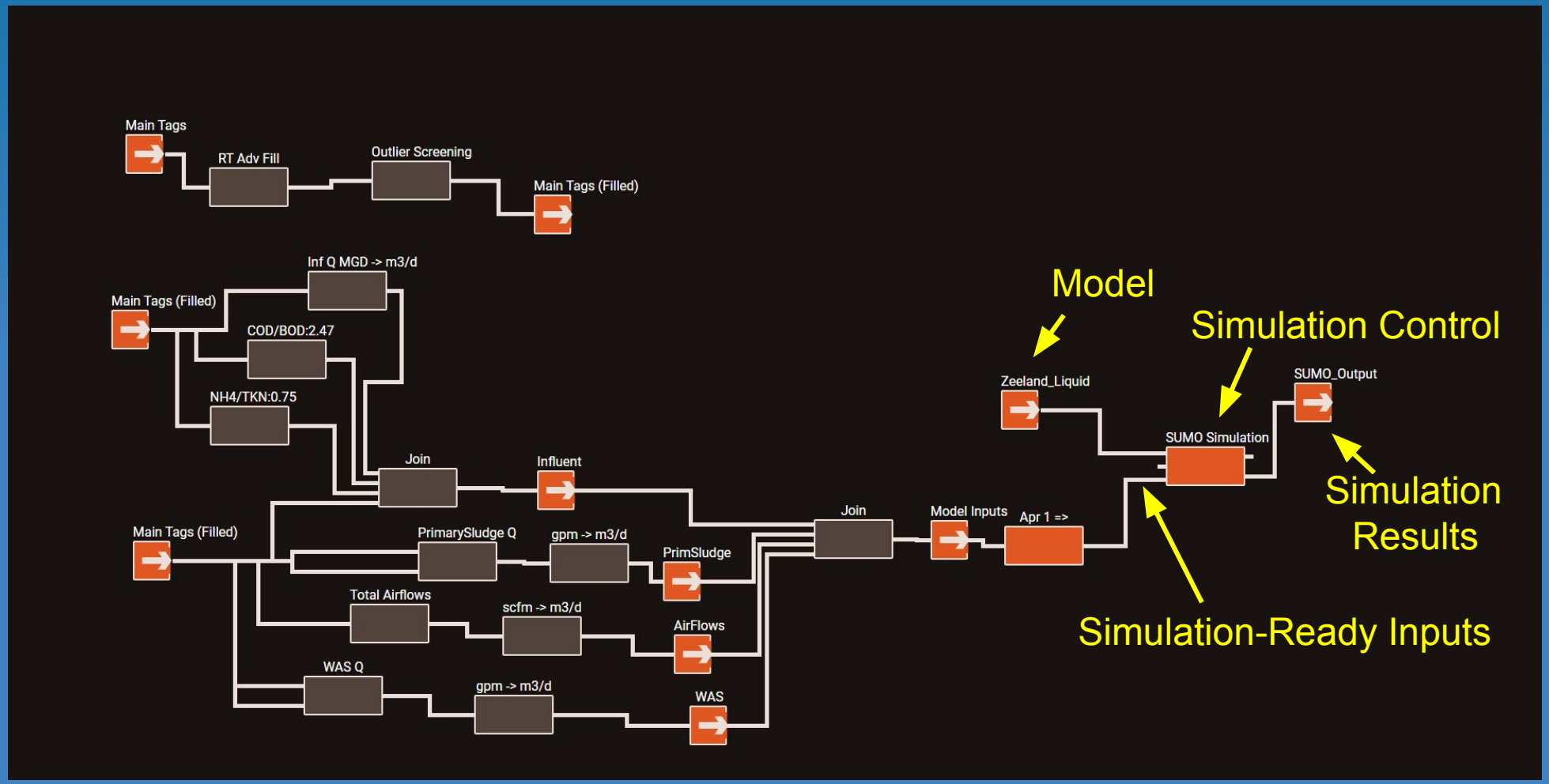

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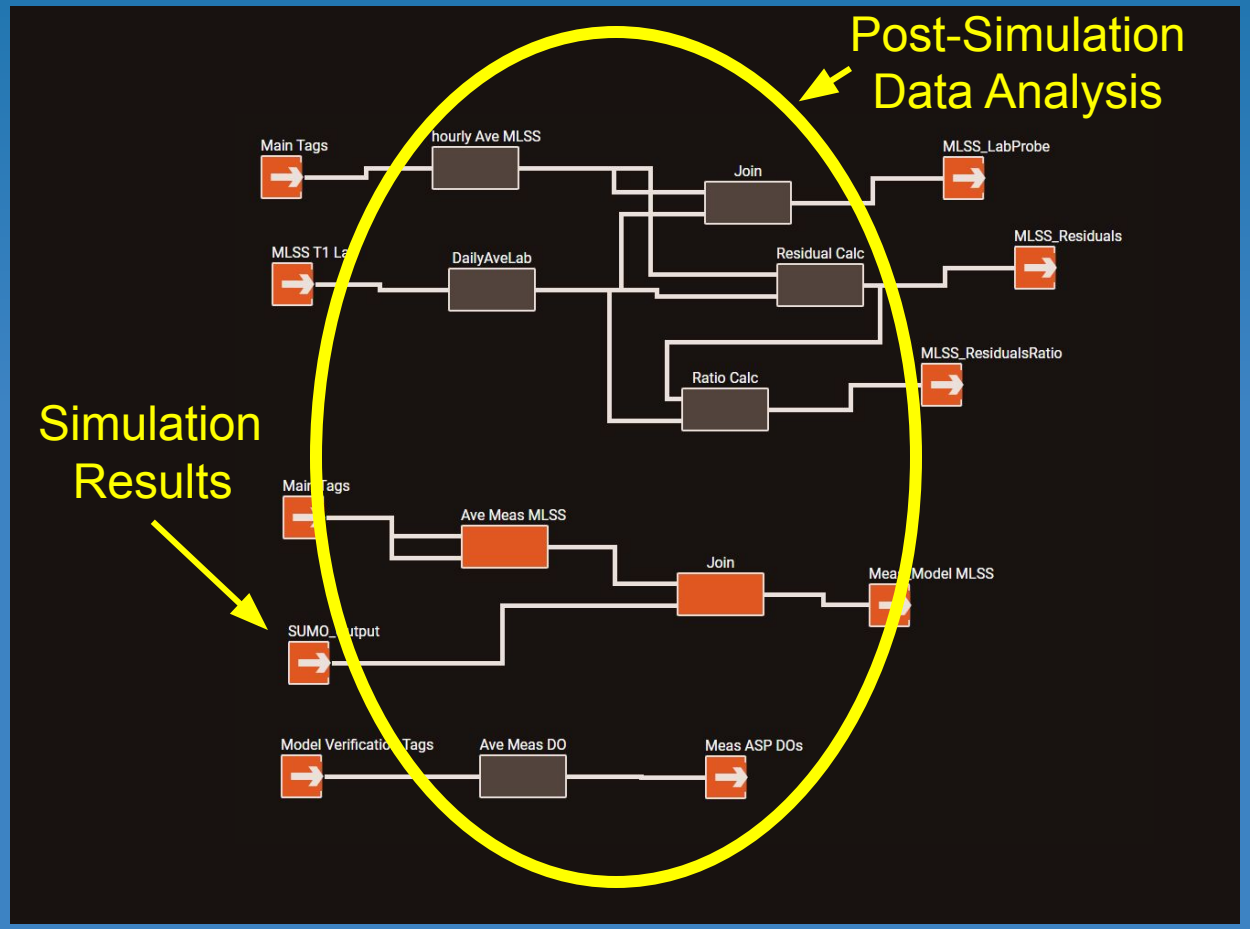

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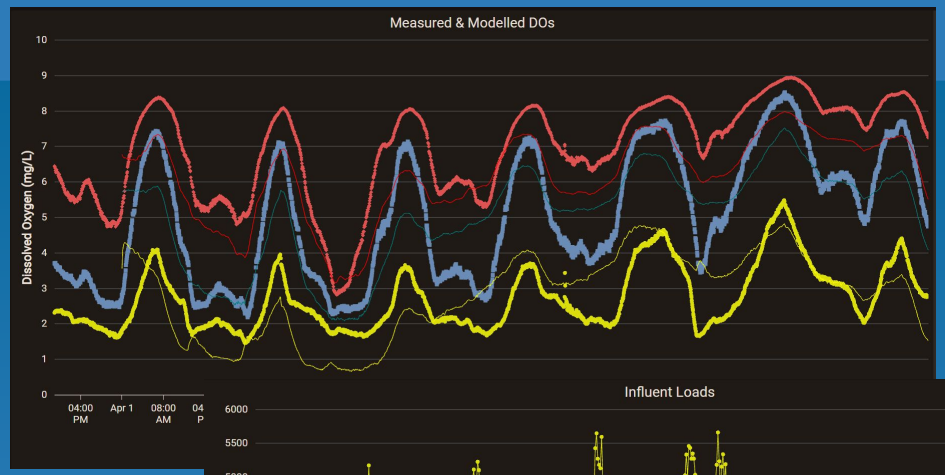

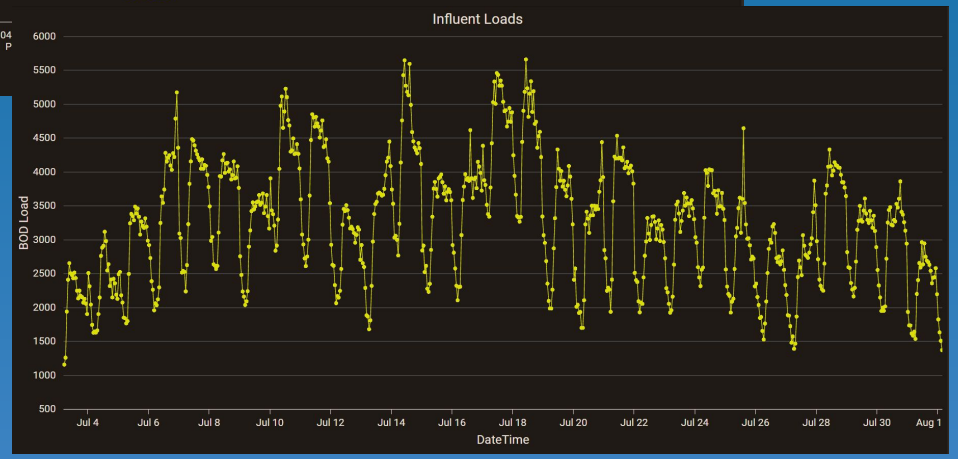

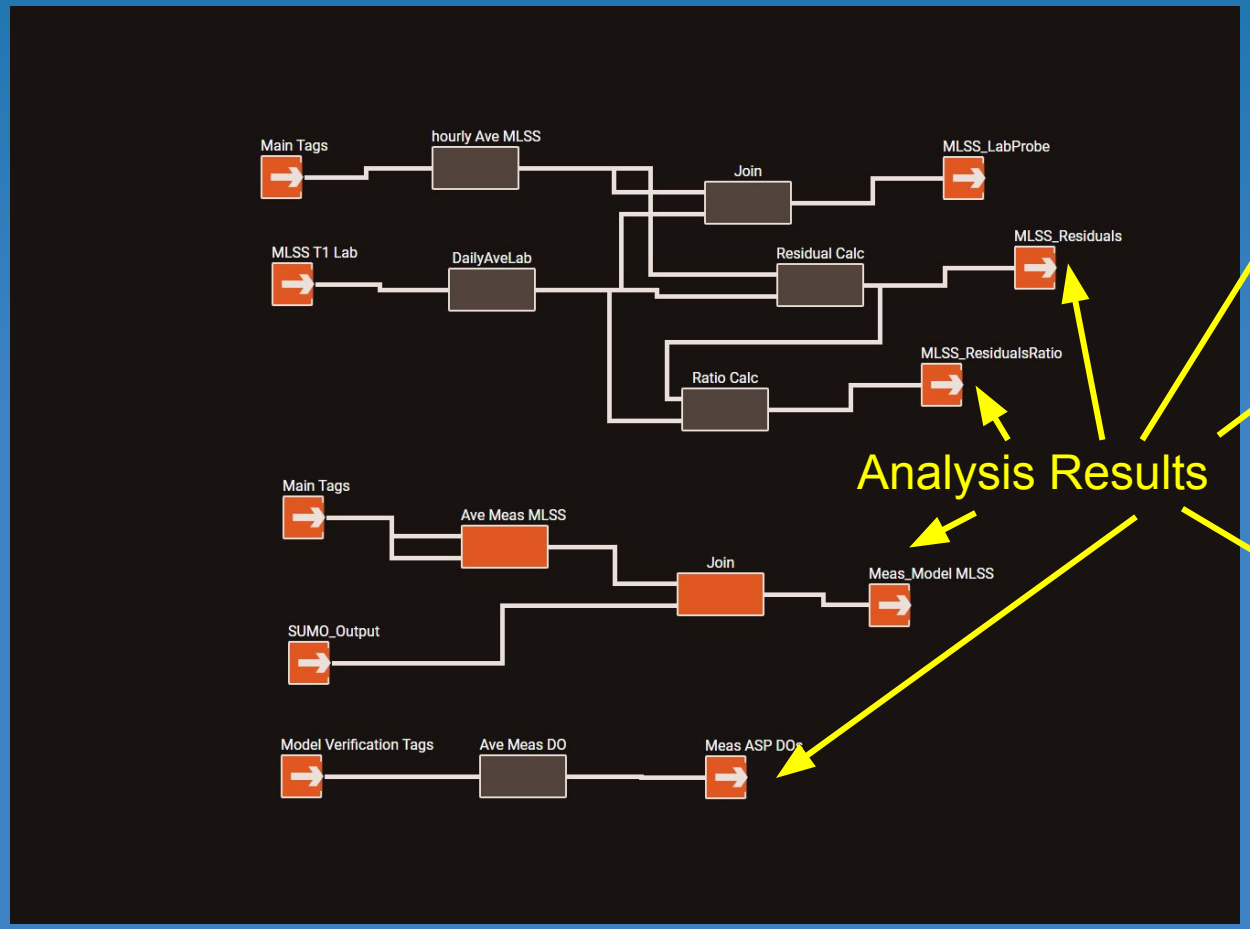

Real-Time KPIs

- MLSS Setpoints
- Fe Dosing Rates
- $/m^3 treated
- kWh / m^3
- m^3 gas / kg of solids, …

Solution Success

- **Data assisted operation**
  - **Operations**
  - Process monitoring assistance, SOPs
  - **Engineering**
  - Upgrade testing
  - **Control**
  - Control system design and testing
  - **Lab**
  - Optimised data collection, data quality
  - **Instrumentation**
  - Optimization of sensor maintenance
  - **Management**
  - Decision support

PrecisionNow Implementation

- User-Configurable DT technology
- Data scheduling to/from the model
- Real-time pre/post data analysis & preparation
- Multiple model capabilities (simple, AI, mechanistic, …)

PrecisionNow Advantage

- Assessment of data quality *is essential*

Barriers To Innovation

- IT Policies
  - Inflexible → incorrectly assume outcomes and risk
    → geared towards and only applicable to major tech companies (MS, Oracle, SAP, AWS …)
  - Risk → no mechanism/policy for assessing risk properly
    → unwilling to test, easier to just reject unknown
  - Approval → No roadmap for adoption approval, ‘passing the buck’ is common … ‘not our decision’

Barriers To Innovation

- IT Policies
  - Competencies
    - ‘Why are we talking to this guy ? This is a feature of our network and the software that we purchased from another vendor’
    - Questionnaires that equate oddly different risks or are simply not applicable *inflexible*

‘Does the organisation review its policies annually?’

||

‘Does the solution use strong encryption for transmission of confidential information?’

Barriers To Innovation

Policy Disconnect

- Institutional & Implementation

- No incentive for adoption of new ideas
- Buy Canadian, but reality is that acceptance geared to US giants
- International client appetite for risk based on the actual risk
  - Willingness to invest in and work with innovative companies

Costs to Canada

- Municipal clients paying 10x more for work
- Technology & expertise leaving the country

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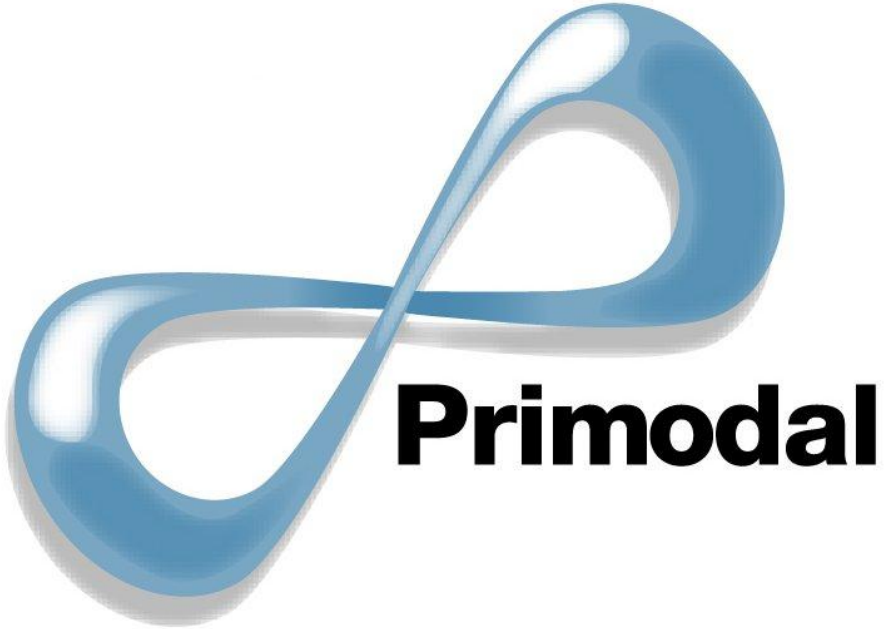
Thank-you !



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