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ACCELERATE INDUSTRIAL INTELLIGENCE

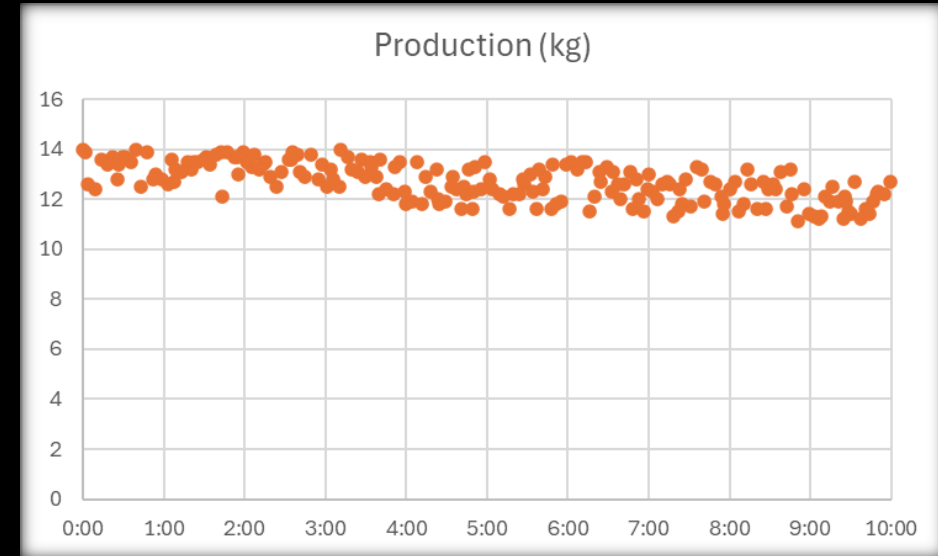
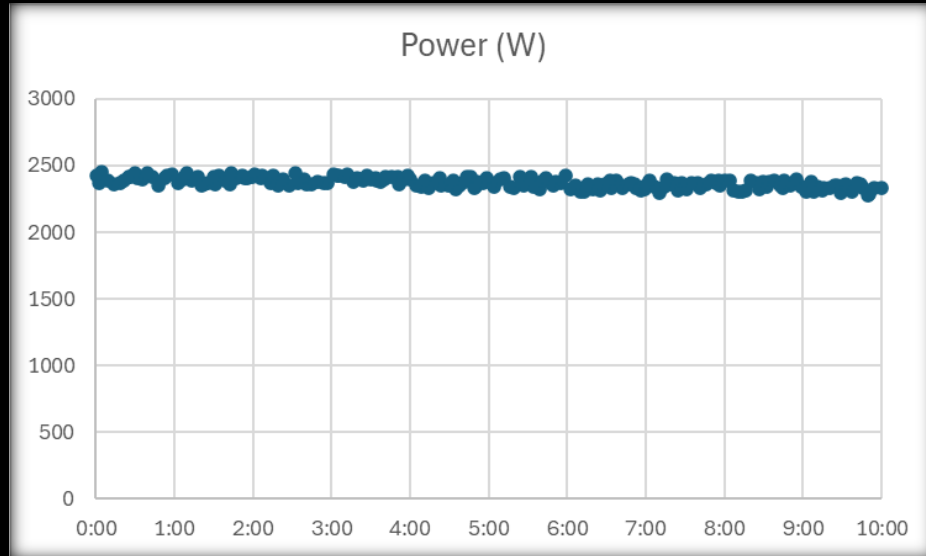
MAY 20, 2026

Aggregated Calculations: From Raw Data to Real Insights in CONNECT

Presented by: Christian-Marc Pouyez

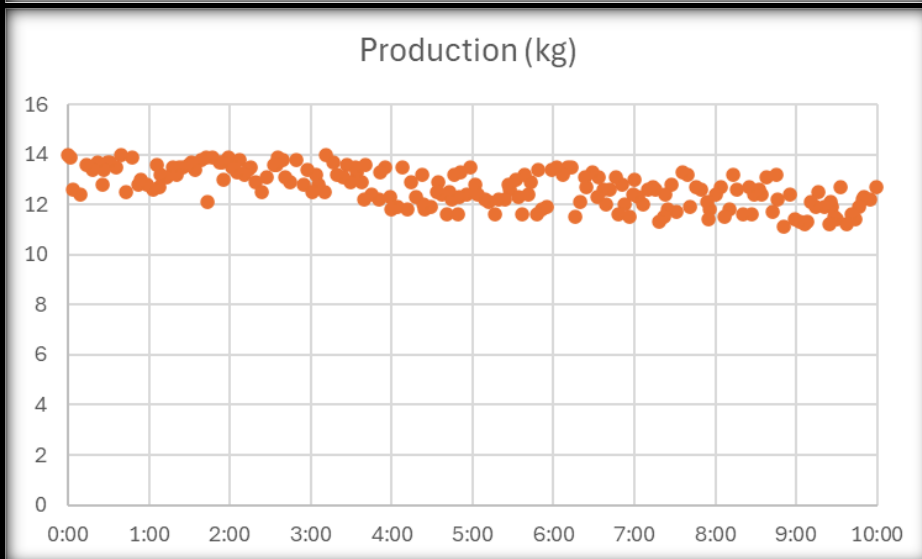
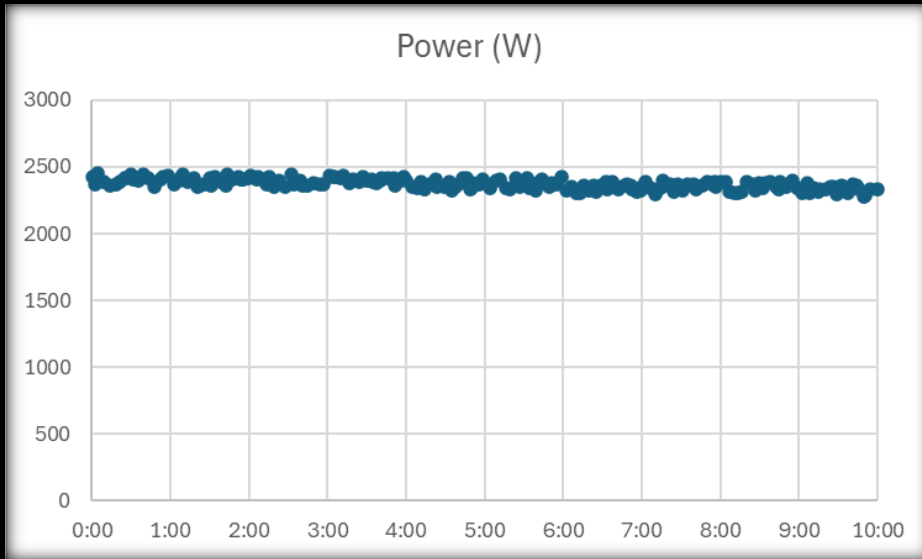
CONNECT

Calculations – Why?



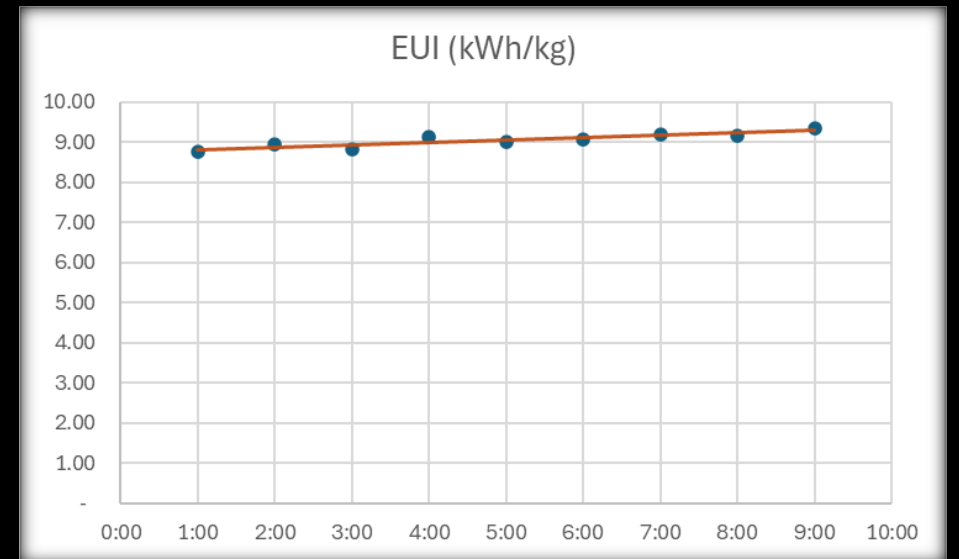
Is the Power used by kg of production increasing or decreasing?

Calculations – Why?



Energy Use Intensity (EUI)

$$\frac{TOTAL(Energy\ Used)}{TOTAL(Production\ Output)}$$



EUI is slightly increasing!
Aggregations help smooth out variations

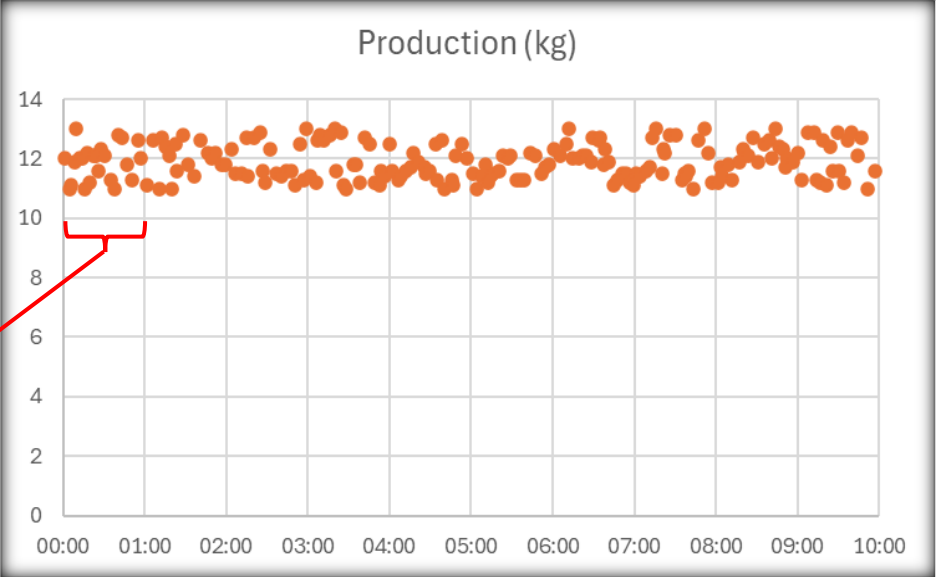
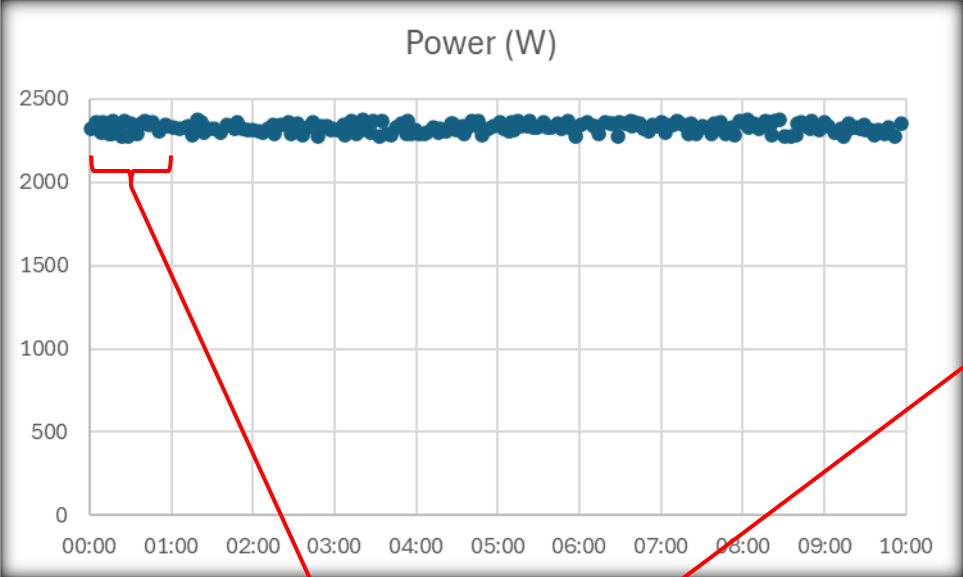
CONNECT Aggregated Calculations

Approach

- Compute Calculation based on CONNECT Summaries at periodic intervals.
 - Stream Summaries: Total, Mean, Min, Max, Range, Weighted Mean, Standard Deviation , etc.
- Calculation results are stored in streams for each period.

$$\text{Energy Use Intensity (EUI)} = \frac{\text{TOTAL}(\text{Energy Used})}{\text{TOTAL}(\text{Production Output})}$$

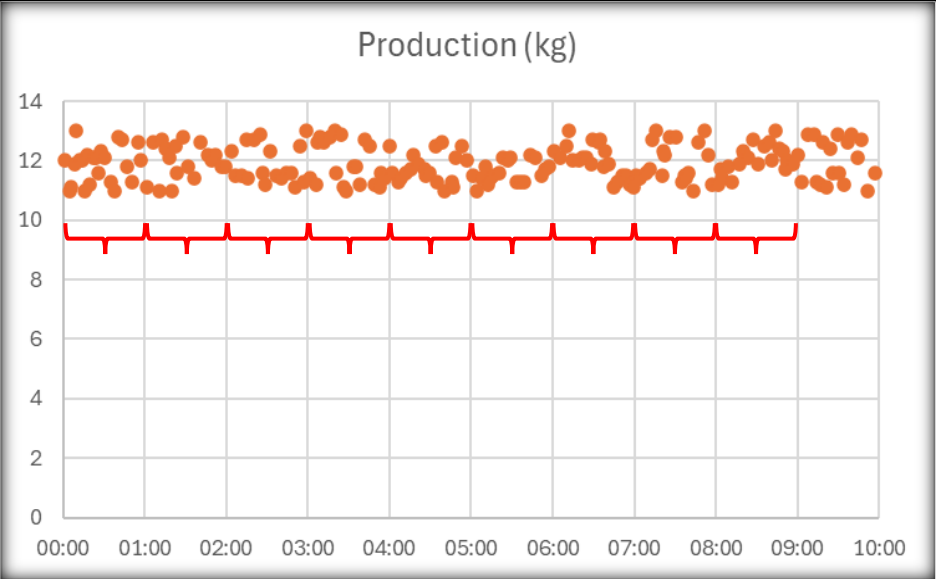
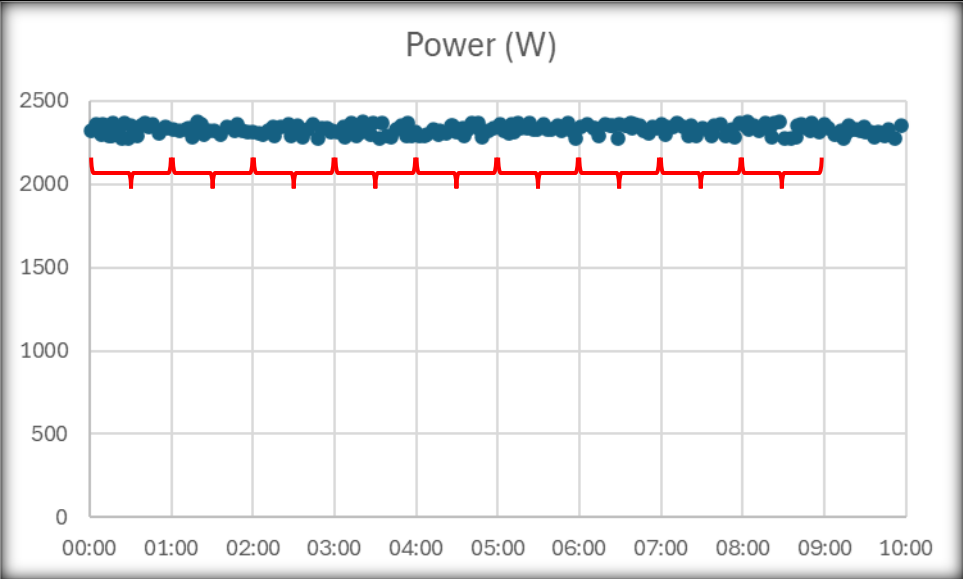
Example



	00:00 → 01:00
Electricity (kWh)	2295
Production (kg)	262
EUI (kWh/kg)	8.76

$$\text{Energy Use Intensity (EUI)} = \frac{\text{TOTAL(} \textit{Energy Used} \text{)}}{\text{TOTAL (} \textit{Production Output} \text{)}}$$

Example



	00:00 → 01:00	01:00 → 02:00	02:00 → 03:00	03:00 → 04:00	04:00 → 05:00	05:00 → 06:00	06:00 → 07:00	07:00 → 08:00	08:00 → 09:00
Electricity (kWh)	2295	2346	2379	2281	2342	2238	2270	2221	2385
Production (kg)	262	228	302	248	234	283	243	302	291
$Energy\ Use\ Intensity\ (EUI) = \frac{TOTAL(energy\ Used)}{TOTAL\ (Production\ Output)}$									
EUI (kWh/kg)	8.76	10.29	7.88	9.20	10.01	7.91	9.34	7.35	8.20

Calculation results are stored in SDS



- Home
- Applications
- Browse
- Create
- Data management
 - Data connections
 - Data stores
 - Data modeling
- Administration
 - Access
 - Account
 - Developer tools
- Marketplace

Welcome to CONNECT
Last sign-in: 4/21/26, 3:58 PM

Search for streams, assets, visualizations, or unknown

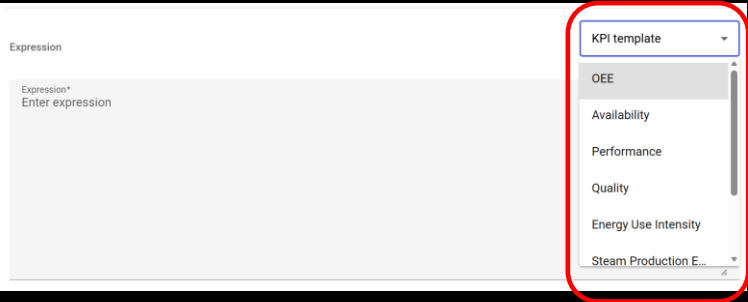
Recently accessed

	Calc-Demo	Calculations	a few seconds ago
	CMP-Test01	Visualization	3 minutes ago
	Windtopia	Data stores	44 minutes ago

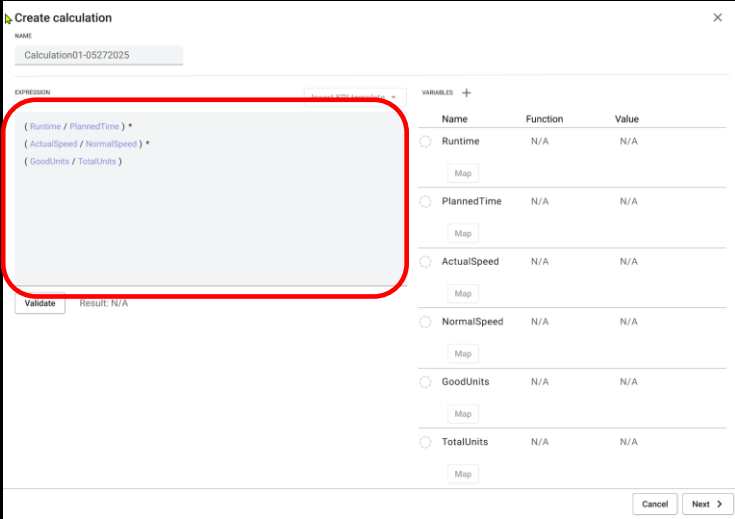
Creating a calculation

Choose your preferred path

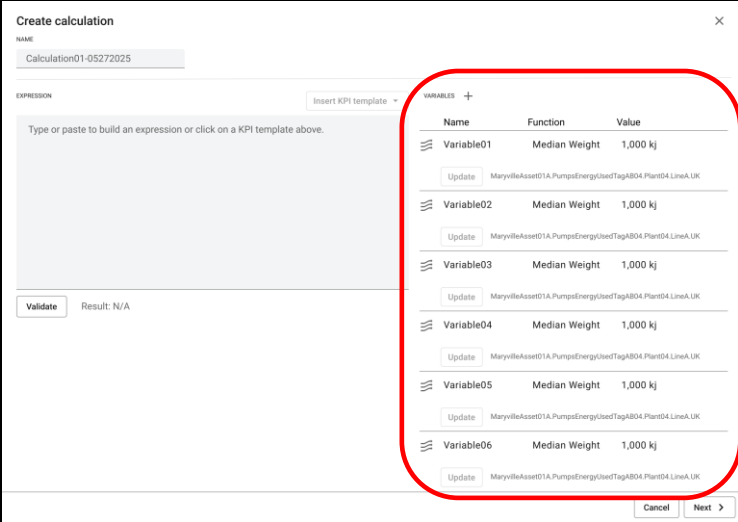
Use a KPI Template



Enter (or paste in) an expression

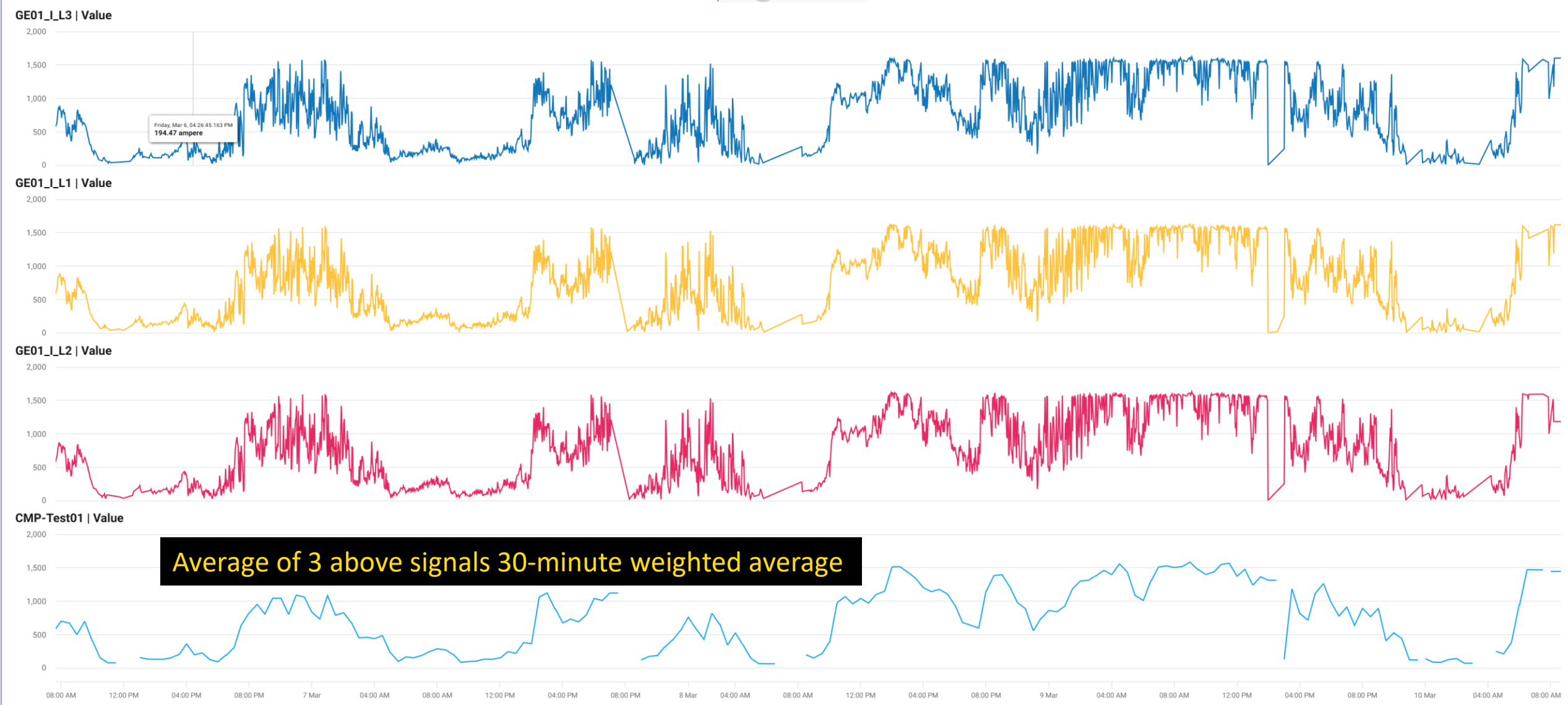


Identify input streams



Line Chart

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Expressions operators and functions

Operator	Description
+	Addition or unary plus
-	Subtraction or unary negative
*	Multiplication
/	Division
%	Modulo (remainder)
^	Exponentiation (power)
==	Comparison equal to
!=	Comparison not equal to
>	Greater than
<	Less than
>=	Greater than or equal to
<=	Smaller than or equal to
&&	Logical AND
	Logical OR

Syntax	Example
IF(condition, value_if_true, value_if_false) Note: Nested if are valid	IF(current_temp > threshold_temp, 1.0, 0.0)
SWITCH (expression, match1, result1, match2, result2, ..., default_result)	SWITCH(alarm_code + active_alerts, 5, 1.5, 7, 2.6, 10)

Security

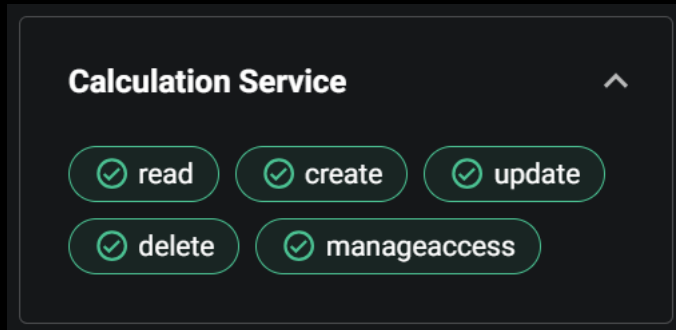
Permission and security tag-based authorization

Permissions:

- Create
- Read
- Update
- Delete
- Manage Access (ownership and security tags)

Security tags:

- Create security tags
- Assign security tag to relevant calculations
- Grant access to security tags in roles
- Assign role to targeted users/groups



Calculations Manage calculation resources. These endpoints support creating, retrieving, updating, and deleting calculations. A calculation represents a formula or expression with inputs and outputs that can be evaluated on demand with provided parameter values.			^
GET	/api/account/{accountId}/calculationMgmt/{instanceId}/v1/calculations	Queries calculations using user-specified filter criteria	🔒 ▼
POST	/api/account/{accountId}/calculationMgmt/{instanceId}/v1/calculations	Creates a new calculation	🔒 ▼
GET	/api/account/{accountId}/calculationMgmt/{instanceId}/v1/calculations/{id}	Gets a calculation by its ID	🔒 ▼
PUT	/api/account/{accountId}/calculationMgmt/{instanceId}/v1/calculations/{id}	Creates a new calculation or updates the name or description of existing an calculation	🔒 ▼
DELETE	/api/account/{accountId}/calculationMgmt/{instanceId}/v1/calculations/{id}	Deletes a calculation	🔒 ▼
POST	/api/account/{accountId}/calculationMgmt/{instanceId}/v1/calculations/validate	Validates a Calculation.	🔒 ▼
POST	/api/account/{accountId}/calculationMgmt/{instanceId}/v1/calculations/expressionDetails	Returns Expression Details.	🔒 ▼
POST	/api/account/{accountId}/calculationMgmt/{instanceId}/v1/bulk/calculations/create	Create calculations in bulk	🔒 ▼
POST	/api/account/{accountId}/calculationMgmt/{instanceId}/v1/bulk/calculations/delete	Delete calculations in bulk	🔒 ▼
AllowedActions			^
GET	/api/account/{accountId}/calculationMgmt/{instanceId}/v1/AllowedActions/Calculations	Gets the allowed actions for calculations.	🔒 ▼
GET	/api/account/{accountId}/calculationMgmt/{instanceId}/v1/AllowedActions/Calculations/{id}	Gets the allowed actions for a calculation with Id.	🔒 ▼
Owners			^
GET	/api/account/{accountId}/calculationMgmt/{instanceId}/v1/calculations/{id}/owner	Gets a calculation owner by calculation ID	🔒 ▼
PUT	/api/account/{accountId}/calculationMgmt/{instanceId}/v1/calculations/{id}/owner	Updates calculation owner	🔒 ▼
SecurityTags			^
GET	/api/account/{accountId}/calculationMgmt/{instanceId}/v1/calculations/{id}/securityTags	Get security tags for a calculation	🔒 ▼
PUT	/api/account/{accountId}/calculationMgmt/{instanceId}/v1/calculations/{id}/securityTags	Update security tags for a calculation	🔒 ▼

Next steps

Major features in development

- Support for other input resources: Events
- Calculation groups, ability to use the output of one calc as the input of another calc in that group
- Map calculation groups to entity properties, entity types
- Time slice according to event(s) periods
- Editing of calculations, with basic versioning

Documentation

docs.aveva.com

Calculations



SDS Summaries



API reference



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and experience some of the new
capabilities coming this year.

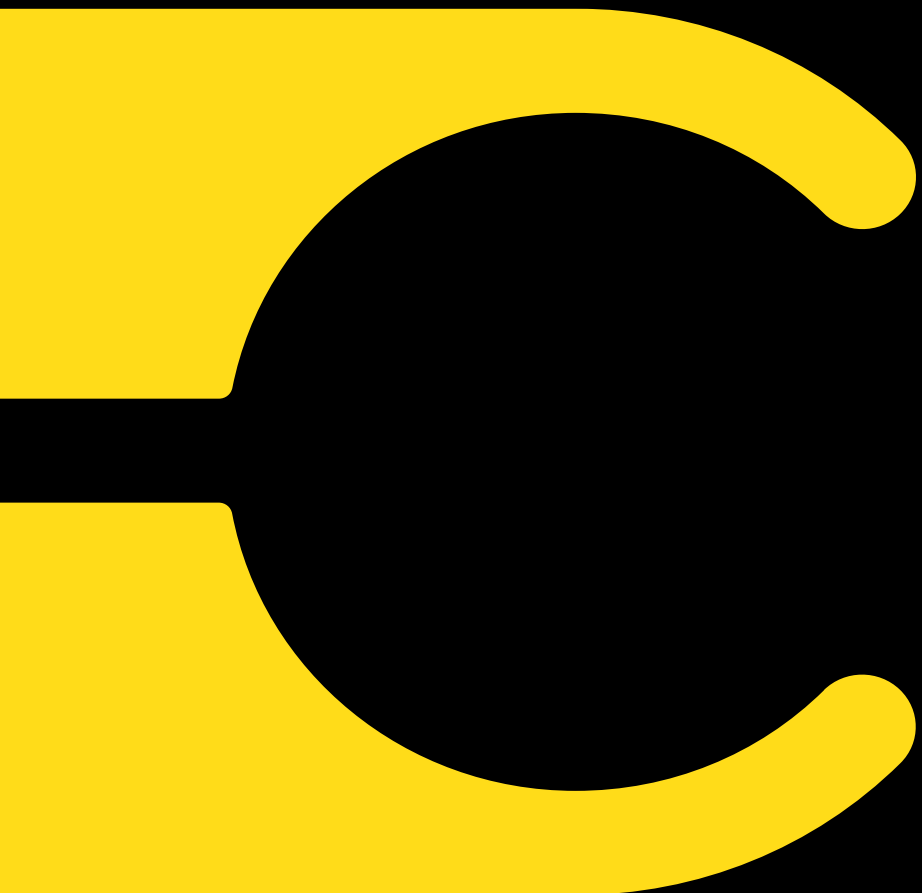
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