Mimer: A scientific data management solution

…and how to (semi)-automate analysis of structured datasets in JMP

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2023

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moved by you

Mimer

- **Mimer is an in-house developed Microsoft Azure / Databricks cloud-based scientific data management solution**
- A tradition at Symphogen is to name our systems according to Nordic mythology
- Mimer was a giant renowned for his knowledge and wisdom
- Mimer was beheaded during the Æsir-Vanir war
- The god Odin carried around Mimer's head , who recited secret knowledge and counsel to him
- The English word 'memory' is derived from Mimer

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Mimer goals

Goal 1

- Reduce scientific data handling difficulty

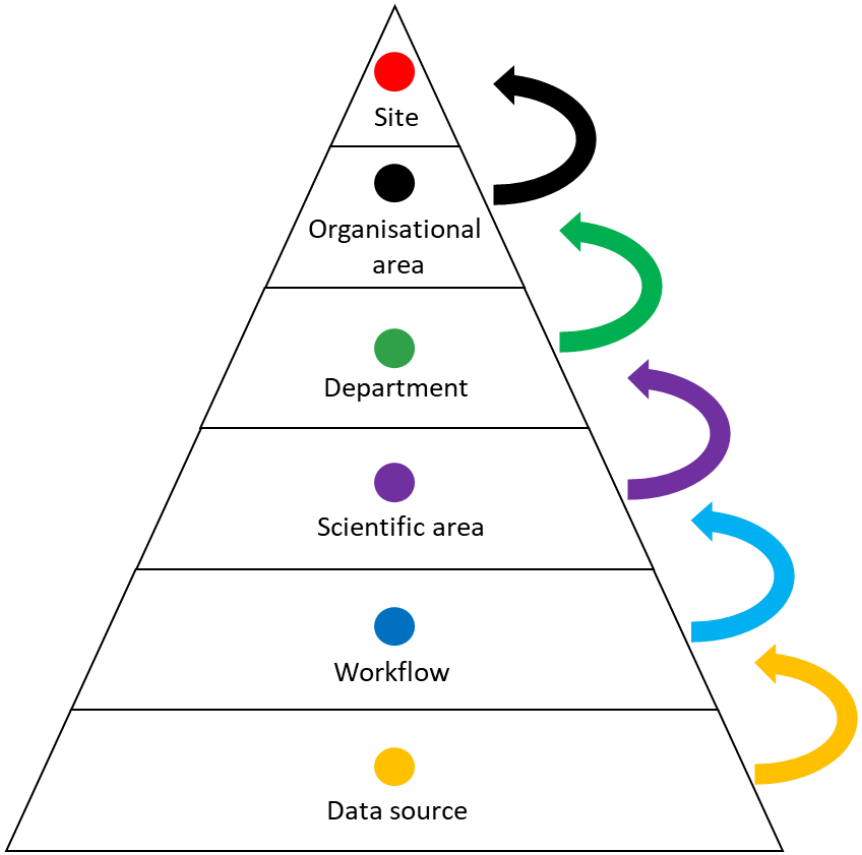
Goal 2

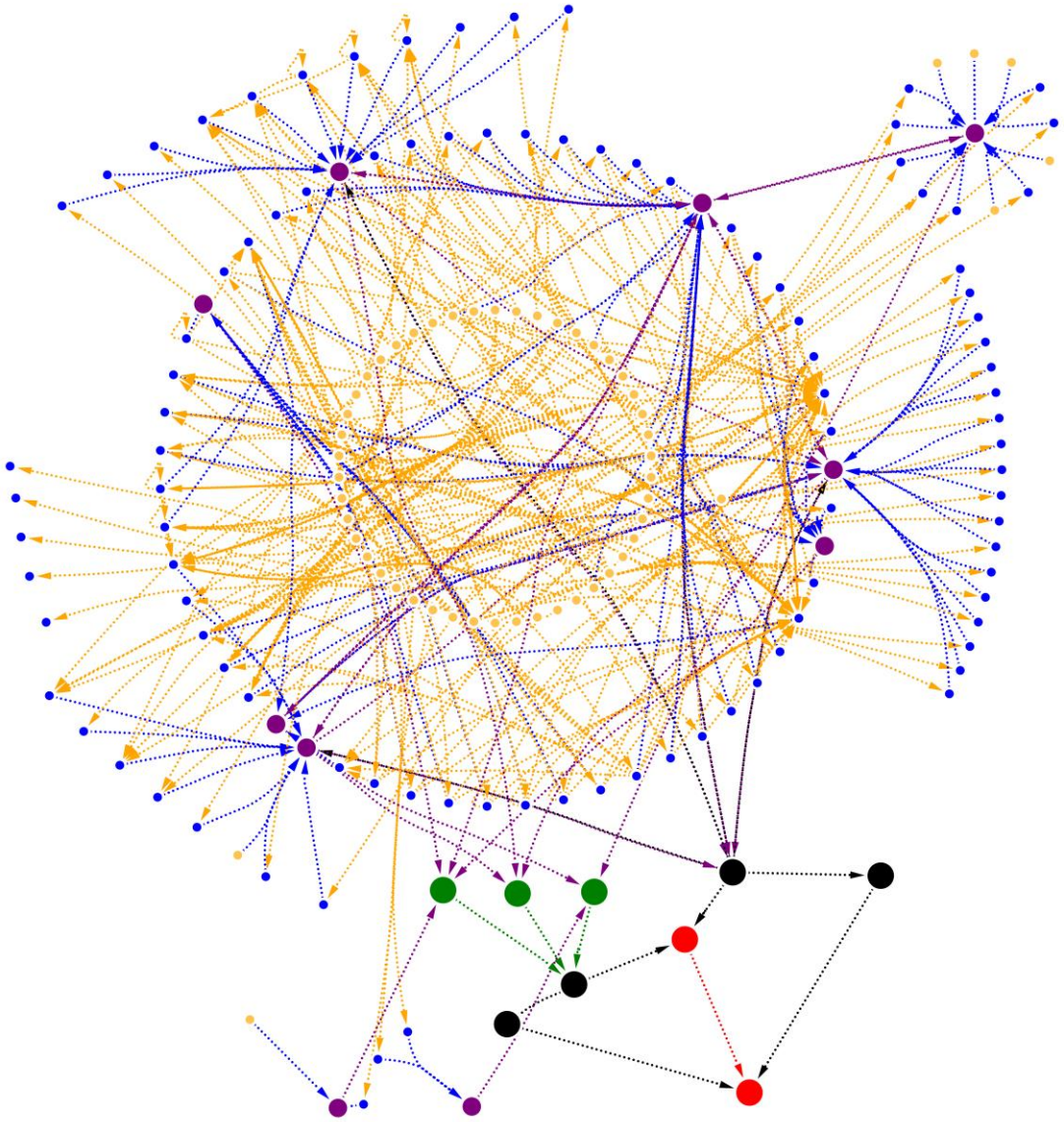
- Improve scientific data quality

Monitor

- Time used on scientific data management

Data flows in the CMC area





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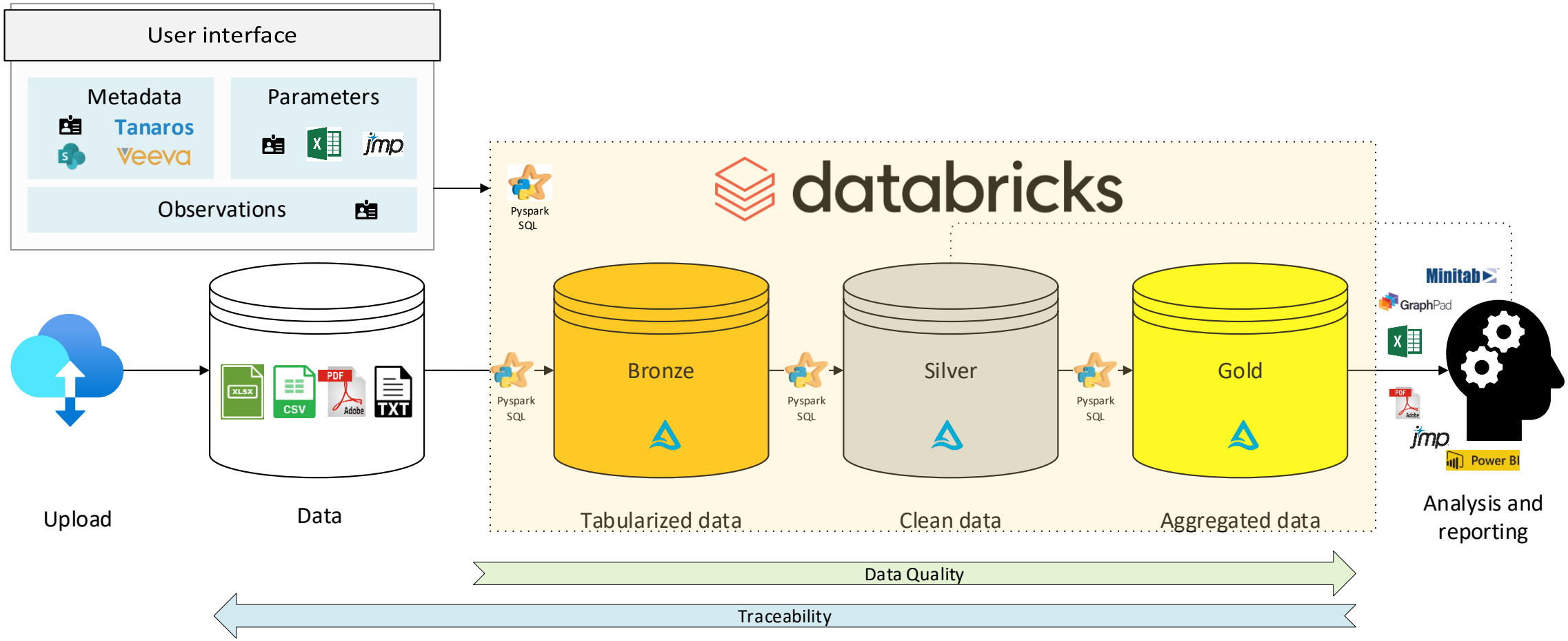
How a dataset is generated and saved to Mimer database



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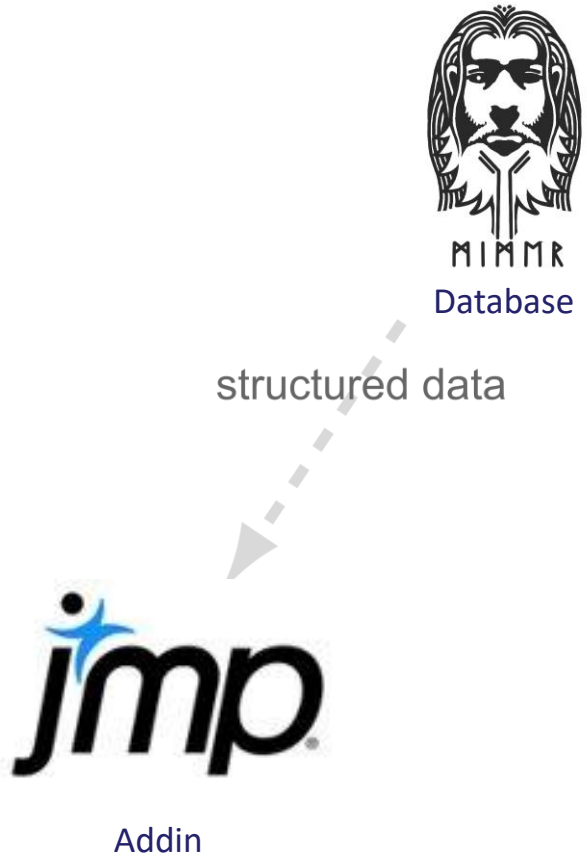
JMP addin handles data from Mimer

Simplicity is key
- One JMP addin for all scientific areas
- One button to get your dataset

Mission
- User-specified, dynamically generated structured datasets
- Automated visualization and basic analysis

Input
- Workflow id(s)

Output
- Structured dataset
- Basic analysis (scripts)
- Basis for advanced predictive modelling (scientist)



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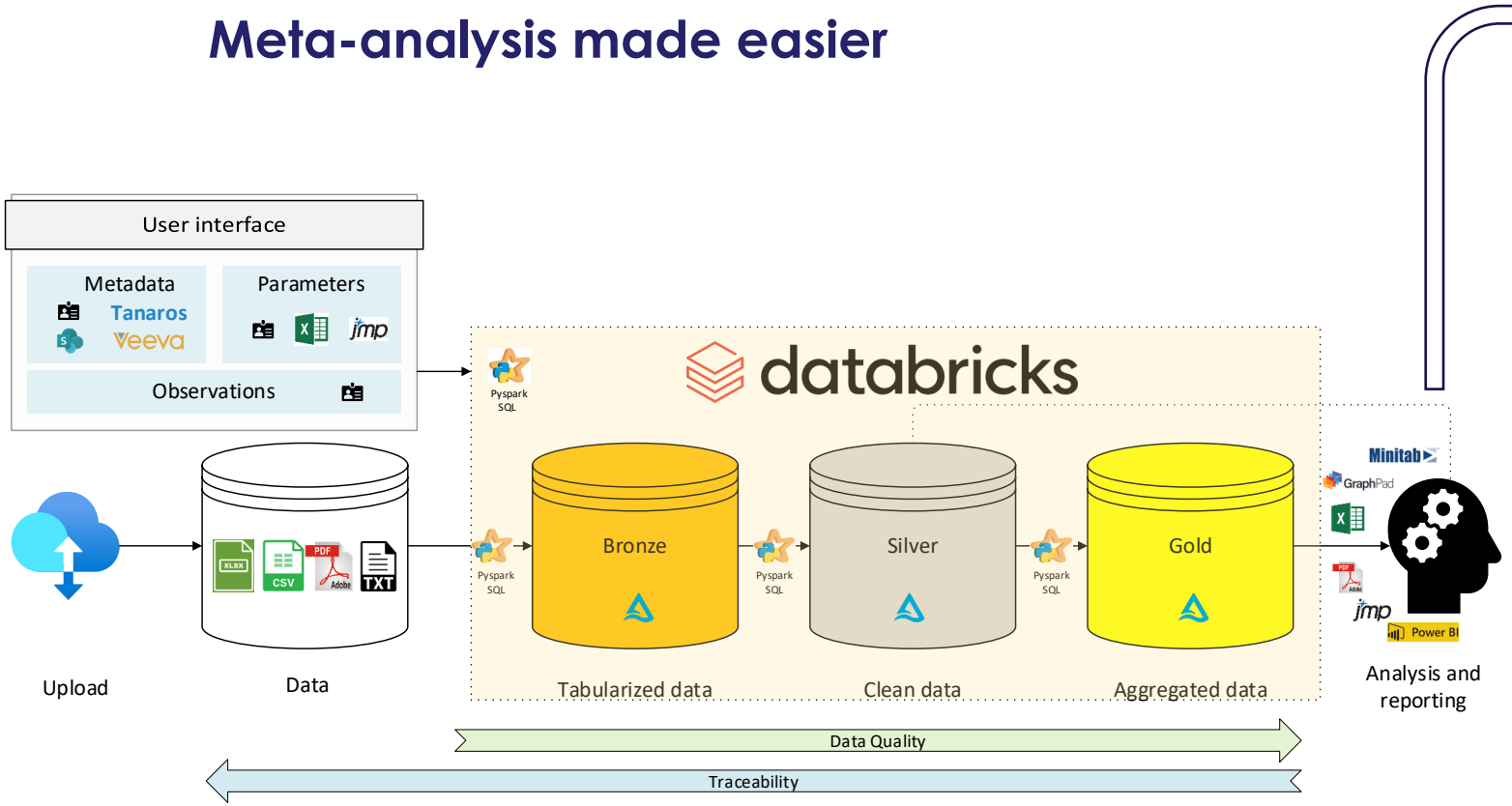
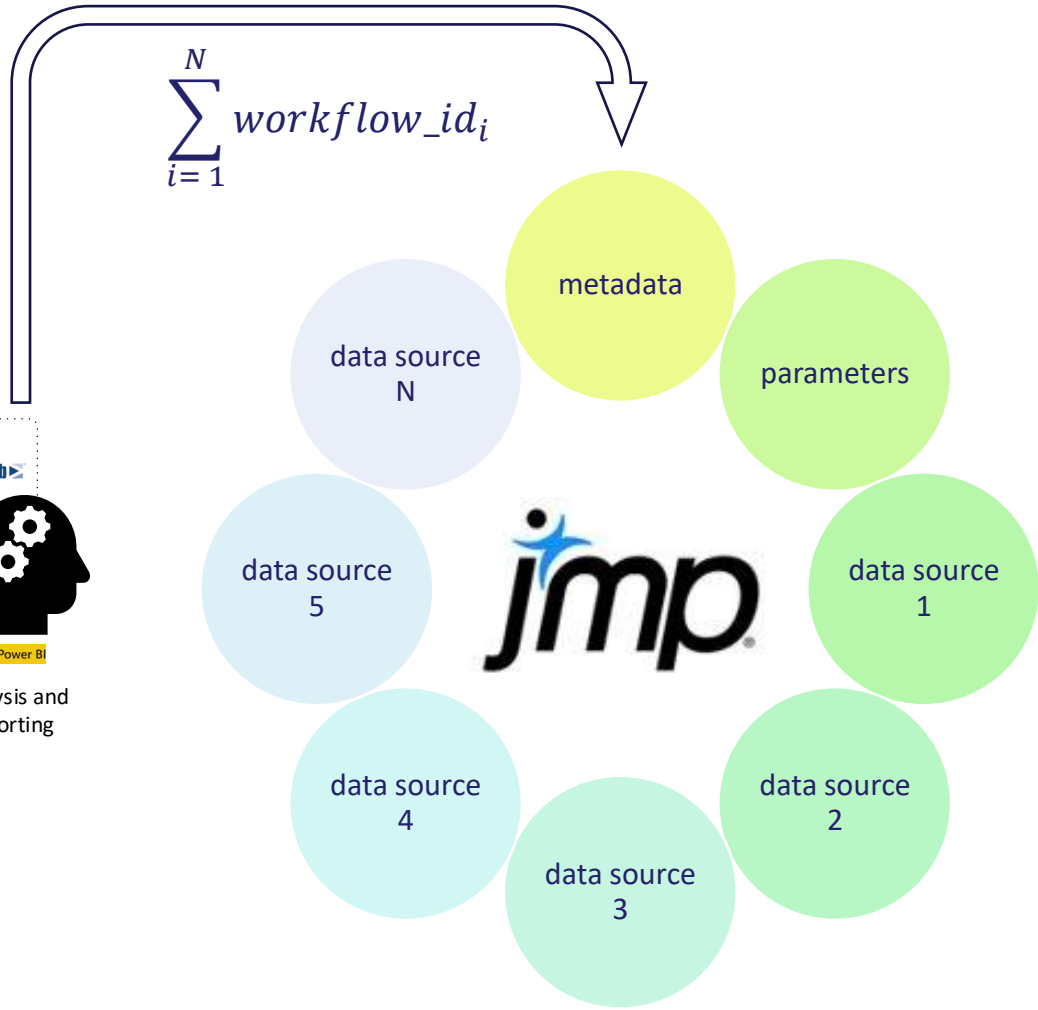
Dynamically generated datasets via JMP addin

Meta-analysis made easier





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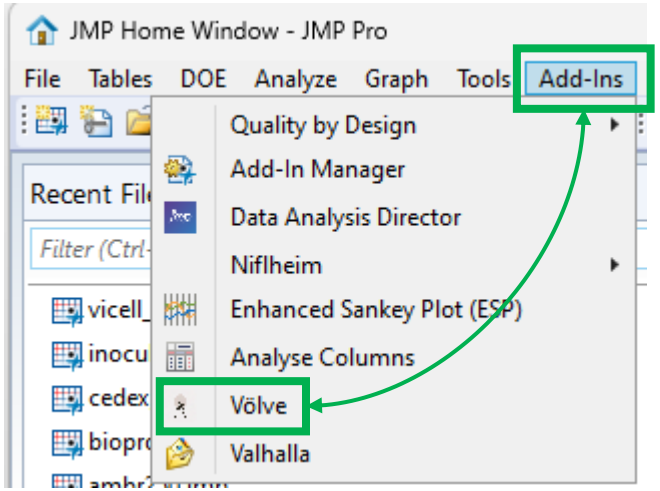
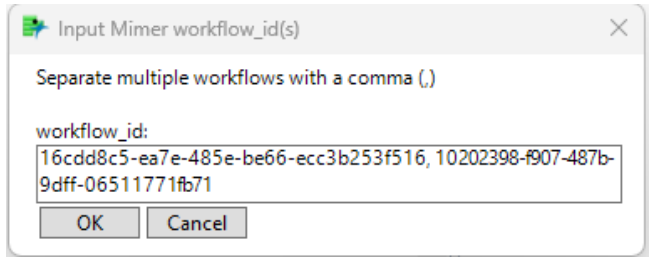
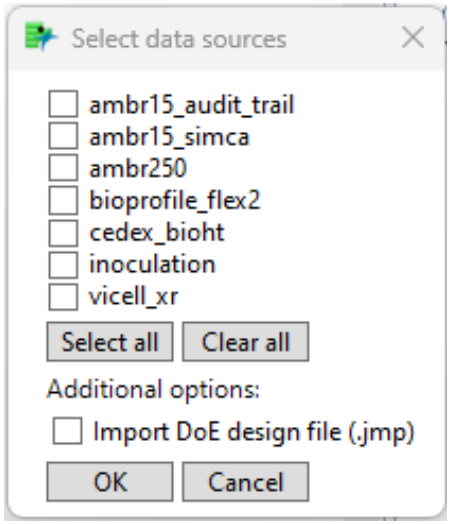
Getting data from Mimer into JMP







Success!
The following actions were taken in 46.9 s (96.4 s incl. user handling)
1. Data was imported from Mimer
2. Routine analyses were performed on the data
3: Data was saved in your Documents folder

Workflows in this dataset
{"16cdd8c5-ea7e-485e-be66-ecc3b253f516", "10202398-f907-487b-9dff-06511771fb71"}

Data sources in this dataset
{"ambr15_audit_trail", "ambr15_simca", "ambr250", "bioprofile_flex2", "cedex_bioht", "inoculation", "vicell_xr"}

Find your data here:
$DOCUMENTS_Mimer\16cdd8c5-ea7e-485e-be66-ecc3b253f516 and more\2023-09-26 10-03

My results

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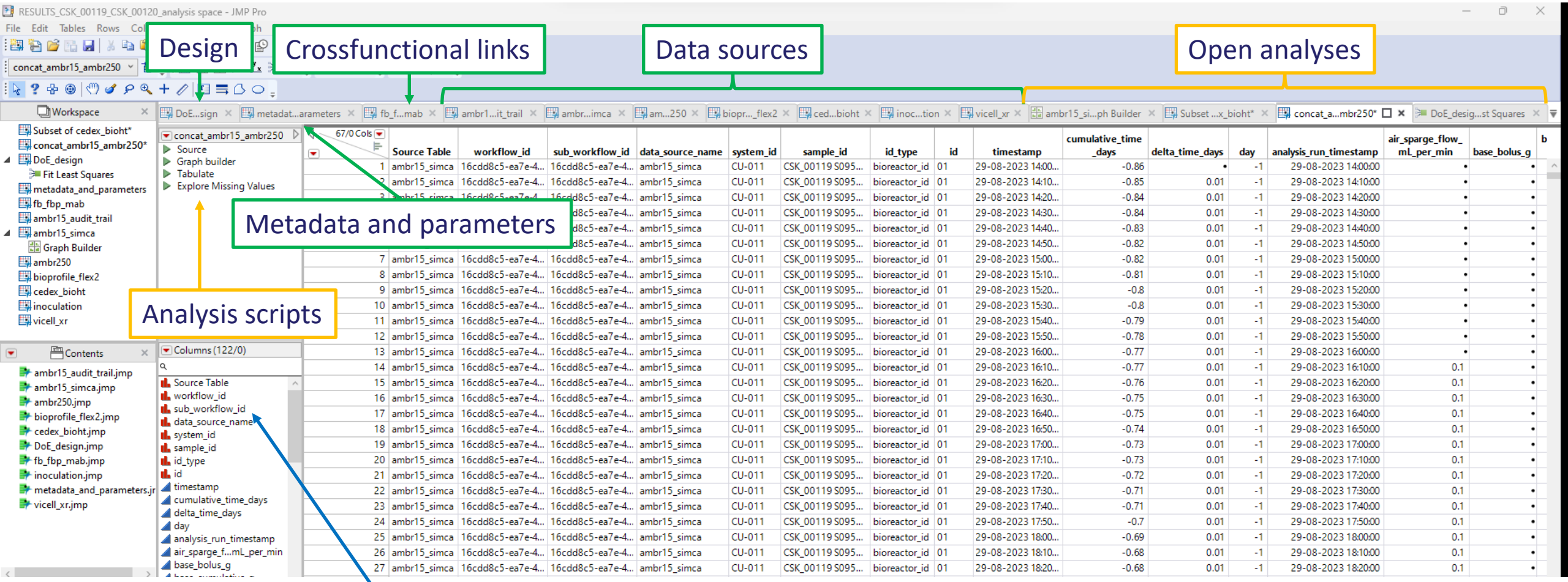
The full dataset is collected in a JMP project

Each data table is a data source with data concatenated across workflows



	Source Table	workflow_id	sub_workflow_id	data_source_name	system_id	sample_id	id_type	id	timestamp	cumulative_time_days	delta_time_days	day	analysis_run_timestamp	air_sparge_flow_ml_per_min	base_bolus_g
1	ambr15_simca	16cdd8c5-ea7e-4...	16cdd8c5-ea7e-4...	ambr15_simca	CU-011	CSK_00119 S095...	bioreactor_id	01	29-08-2023 14:00...	-0.86	•	-1	29-08-2023 14:00:00	•	•
2	ambr15_simca	16cdd8c5-ea7e-4...	16cdd8c5-ea7e-4...	ambr15_simca	CU-011	CSK_00119 S095...	bioreactor_id	01	29-08-2023 14:10...	-0.85	0.01	-1	29-08-2023 14:10:00	•	•
3	ambr15_simca	16cdd8c5-ea7e-4...	16cdd8c5-ea7e-4...	ambr15_simca	CU-011	CSK_00119 S095...	bioreactor_id	01	29-08-2023 14:20...	-0.84	0.01	-1	29-08-2023 14:20:00	•	•
4	ambr15_simca	16cdd8c5-ea7e-4...	16cdd8c5-ea7e-4...	ambr15_simca	CU-011	CSK_00119 S095...	bioreactor_id	01	29-08-2023 14:30...	-0.84	0.01	-1	29-08-2023 14:30:00	•	•
5	ambr15_simca	16cdd8c5-ea7e-4...	16cdd8c5-ea7e-4...	ambr15_simca	CU-011	CSK_00119 S095...	bioreactor_id	01	29-08-2023 14:40...	-0.83	0.01	-1	29-08-2023 14:40:00	•	•
6	ambr15_simca	16cdd8c5-ea7e-4...	16cdd8c5-ea7e-4...	ambr15_simca	CU-011	CSK_00119 S095...	bioreactor_id	01	29-08-2023 14:50...	-0.82	0.01	-1	29-08-2023 14:50:00	•	•
7	ambr15_simca	16cdd8c5-ea7e-4...	16cdd8c5-ea7e-4...	ambr15_simca	CU-011	CSK_00119 S095...	bioreactor_id	01	29-08-2023 15:00...	-0.82	0.01	-1	29-08-2023 15:00:00	•	•
8	ambr15_simca	16cdd8c5-ea7e-4...	16cdd8c5-ea7e-4...	ambr15_simca	CU-011	CSK_00119 S095...	bioreactor_id	01	29-08-2023 15:10...	-0.81	0.01	-1	29-08-2023 15:10:00	•	•
9	ambr15_simca	16cdd8c5-ea7e-4...	16cdd8c5-ea7e-4...	ambr15_simca	CU-011	CSK_00119 S095...	bioreactor_id	01	29-08-2023 15:20...	-0.8	0.01	-1	29-08-2023 15:20:00	•	•
10	ambr15_simca	16cdd8c5-ea7e-4...	16cdd8c5-ea7e-4...	ambr15_simca	CU-011	CSK_00119 S095...	bioreactor_id	01	29-08-2023 15:30...	-0.8	0.01	-1	29-08-2023 15:30:00	•	•
11	ambr15_simca	16cdd8c5-ea7e-4...	16cdd8c5-ea7e-4...	ambr15_simca	CU-011	CSK_00119 S095...	bioreactor_id	01	29-08-2023 15:40...	-0.79	0.01	-1	29-08-2023 15:40:00	•	•
12	ambr15_simca	16cdd8c5-ea7e-4...	16cdd8c5-ea7e-4...	ambr15_simca	CU-011	CSK_00119 S095...	bioreactor_id	01	29-08-2023 15:50...	-0.78	0.01	-1	29-08-2023 15:50:00	•	•
13	ambr15_simca	16cdd8c5-ea7e-4...	16cdd8c5-ea7e-4...	ambr15_simca	CU-011	CSK_00119 S095...	bioreactor_id	01	29-08-2023 16:00...	-0.77	0.01	-1	29-08-2023 16:00:00	•	•
14	ambr15_simca	16cdd8c5-ea7e-4...	16cdd8c5-ea7e-4...	ambr15_simca	CU-011	CSK_00119 S095...	bioreactor_id	01	29-08-2023 16:10...	-0.77	0.01	-1	29-08-2023 16:10:00	0.1	•
15	ambr15_simca	16cdd8c5-ea7e-4...	16cdd8c5-ea7e-4...	ambr15_simca	CU-011	CSK_00119 S095...	bioreactor_id	01	29-08-2023 16:20...	-0.76	0.01	-1	29-08-2023 16:20:00	0.1	•
16	ambr15_simca	16cdd8c5-ea7e-4...	16cdd8c5-ea7e-4...	ambr15_simca	CU-011	CSK_00119 S095...	bioreactor_id	01	29-08-2023 16:30...	-0.75	0.01	-1	29-08-2023 16:30:00	0.1	•
17	ambr15_simca	16cdd8c5-ea7e-4...	16cdd8c5-ea7e-4...	ambr15_simca	CU-011	CSK_00119 S095...	bioreactor_id	01	29-08-2023 16:40...	-0.75	0.01	-1	29-08-2023 16:40:00	0.1	•
18	ambr15_simca	16cdd8c5-ea7e-4...	16cdd8c5-ea7e-4...	ambr15_simca	CU-011	CSK_00119 S095...	bioreactor_id	01	29-08-2023 16:50...	-0.74	0.01	-1	29-08-2023 16:50:00	0.1	•
19	ambr15_simca	16cdd8c5-ea7e-4...	16cdd8c5-ea7e-4...	ambr15_simca	CU-011	CSK_00119 S095...	bioreactor_id	01	29-08-2023 17:00...	-0.73	0.01	-1	29-08-2023 17:00:00	0.1	•
20	ambr15_simca	16cdd8c5-ea7e-4...	16cdd8c5-ea7e-4...	ambr15_simca	CU-011	CSK_00119 S095...	bioreactor_id	01	29-08-2023 17:10...	-0.73	0.01	-1	29-08-2023 17:10:00	0.1	•
21	ambr15_simca	16cdd8c5-ea7e-4...	16cdd8c5-ea7e-4...	ambr15_simca	CU-011	CSK_00119 S095...	bioreactor_id	01	29-08-2023 17:20...	-0.72	0.01	-1	29-08-2023 17:20:00	0.1	•
22	ambr15_simca	16cdd8c5-ea7e-4...	16cdd8c5-ea7e-4...	ambr15_simca	CU-011	CSK_00119 S095...	bioreactor_id	01	29-08-2023 17:30...	-0.71	0.01	-1	29-08-2023 17:30:00	0.1	•
23	ambr15_simca	16cdd8c5-ea7e-4...	16cdd8c5-ea7e-4...	ambr15_simca	CU-011	CSK_00119 S095...	bioreactor_id	01	29-08-2023 17:40...	-0.71	0.01	-1	29-08-2023 17:40:00	0.1	•
24	ambr15_simca	16cdd8c5-ea7e-4...	16cdd8c5-ea7e-4...	ambr15_simca	CU-011	CSK_00119 S095...	bioreactor_id	01	29-08-2023 17:50...	-0.7	0.01	-1	29-08-2023 17:50:00	0.1	•
25	ambr15_simca	16cdd8c5-ea7e-4...	16cdd8c5-ea7e-4...	ambr15_simca	CU-011	CSK_00119 S095...	bioreactor_id	01	29-08-2023 18:00...	-0.69	0.01	-1	29-08-2023 18:00:00	0.1	•
26	ambr15_simca	16cdd8c5-ea7e-4...	16cdd8c5-ea7e-4...	ambr15_simca	CU-011	CSK_00119 S095...	bioreactor_id	01	29-08-2023 18:10...	-0.68	0.01	-1	29-08-2023 18:10:00	0.1	•
27	ambr15_simca	16cdd8c5-ea7e-4...	16cdd8c5-ea7e-4...	ambr15_simca	CU-011	CSK_00119 S095...	bioreactor_id	01	29-08-2023 18:20...	-0.68	0.01	-1	29-08-2023 18:20:00	0.1	•

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JMP demo: Clone process parameter screening

A DoE experiment across ambr15 and ambr250 with data collected from Mimer

AMBR15

AMBR250

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