

Knime@Audi

Facts and Figures

Ingolstadt, Germany | February 2024



Agenda

01 |

A few words about Audi

Volkswagen Group and Brand Group Progressive

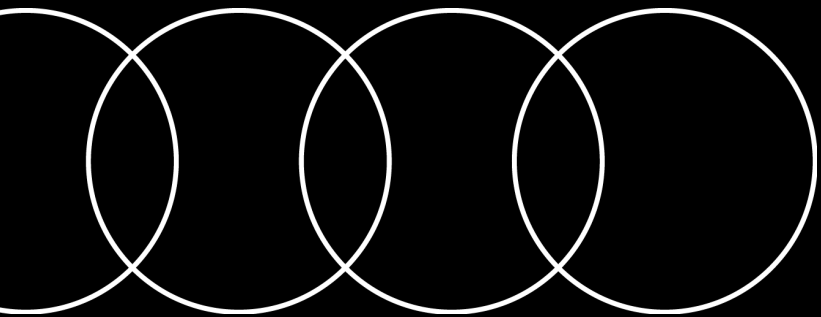
02 |

Knime@Audi

History and IT Architecture

03 |

Numbers about Knime



A few words about Audi

Volkswagen Group and Brand Group Progressive



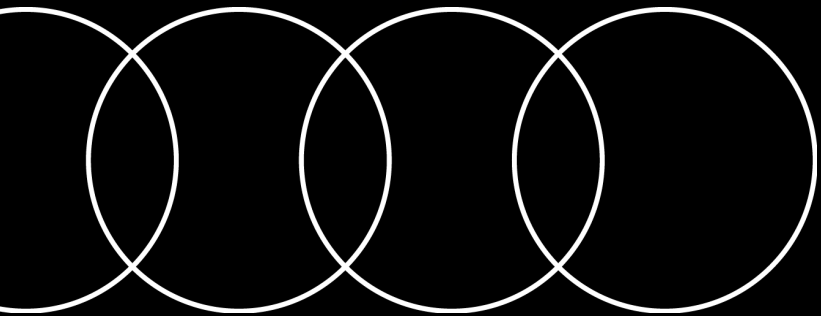
Brand Group Progressive

Audi manages the brand group in the Volkswagen Group



“ Each of our brands represents outstanding performance, pioneering technologies, fascinating design, and great emotions.





Knime@Audi

History and IT Architecture



Knime Story at Audi



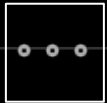
Start

- **Knime Analytics Platform was first used by the business department in 2012 with a few local installations.**



On Track

- **In 2020, the Knime Server and Knime Analytics Platform product was rolled out by Audi's central IT department.**
- **Year 2024: Start with Knime Business Hub at Audi.**

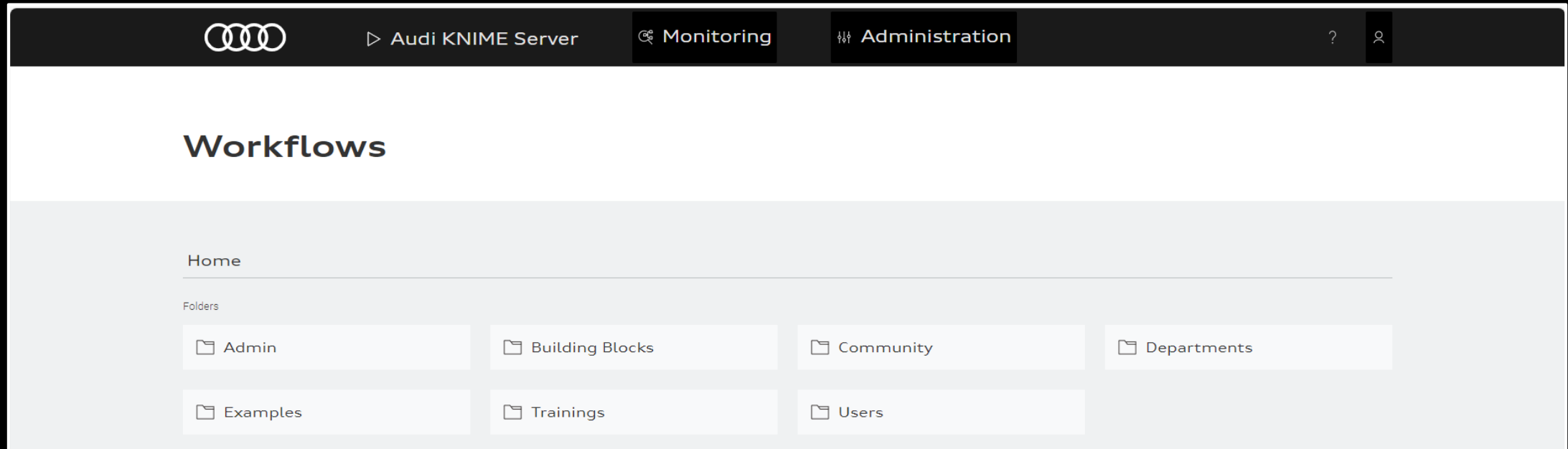


Next steps

- **Managed Service for Audi.**

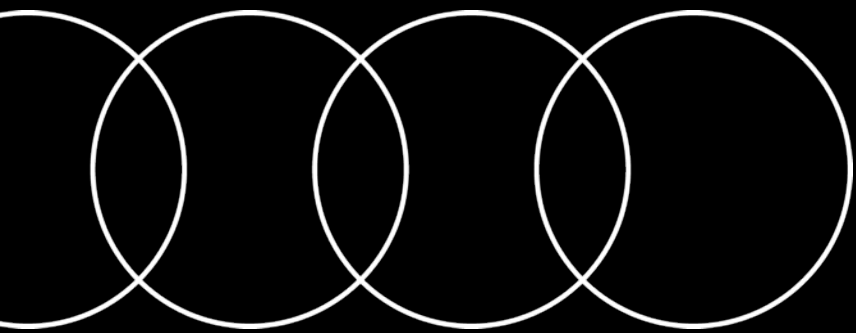
Knime at Audi – Architecture and Portal

- **Start with the Knime reference architecture for Knime Server. Knime Analytics Platform is deployed as a local and virtual installation.**
- **Active Directory is integrated for User Authorization and Authentication.**
- **Customization of the Knime Webportal with a custom theme.**



Knime at Audi – Numbers about Knime

- **Initially, Knime Analytics Platform was used with 10 installations in the production division.**
- **Today, Kime has 800 local installations and 500 users on the virtual platform.**
- **Knime is now used in all of Audi's divisions.**



Stockforecast

Improving SCM at Audi with

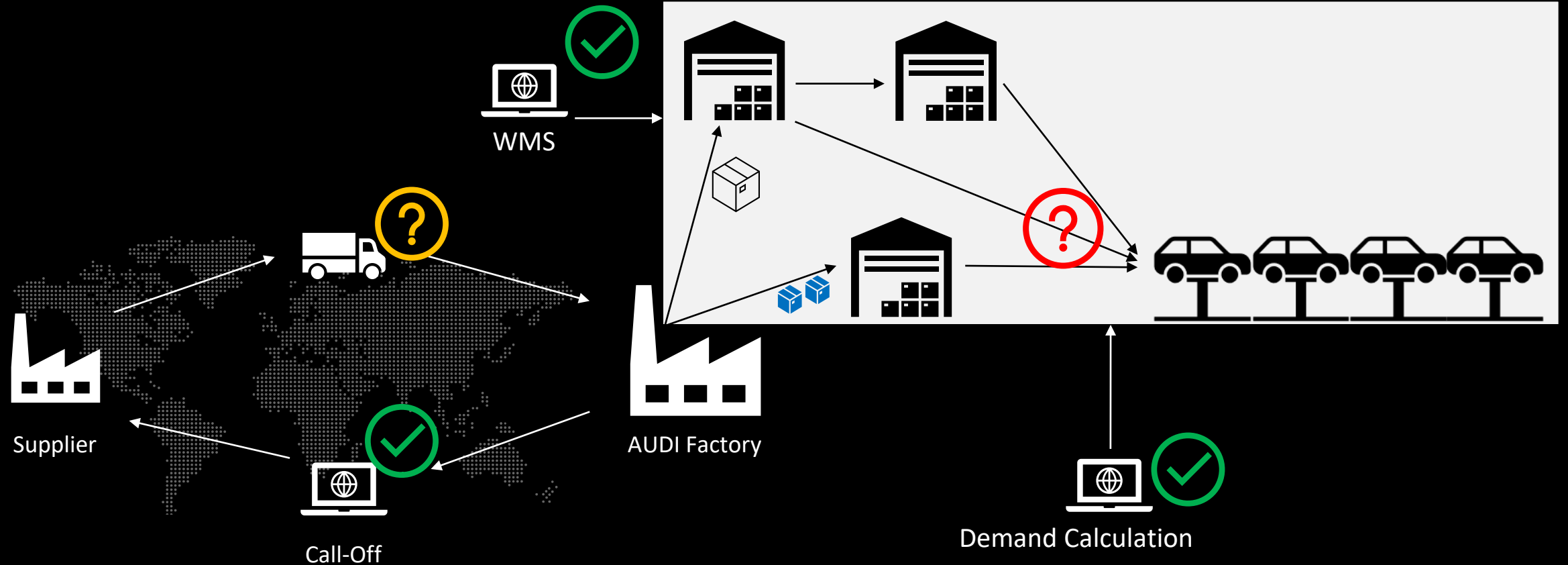
KNIME




Simon Herzog | Munich, Germany | March 2024



Stockforecast - Problem

Inhouse Process

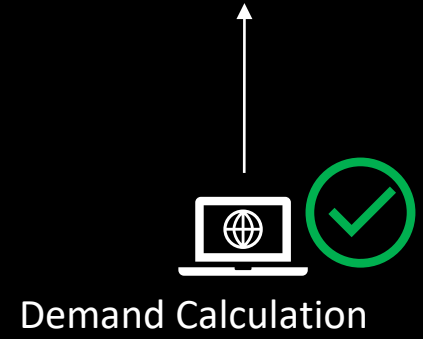
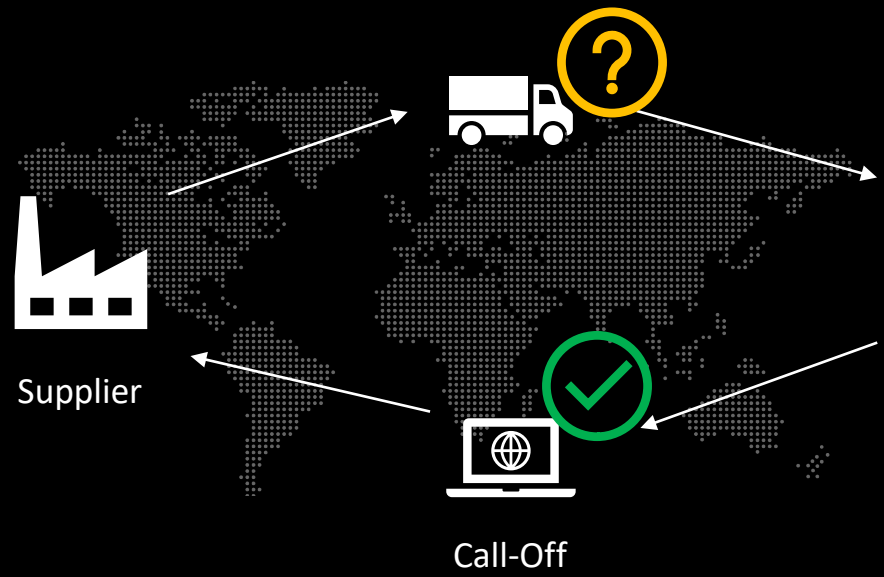
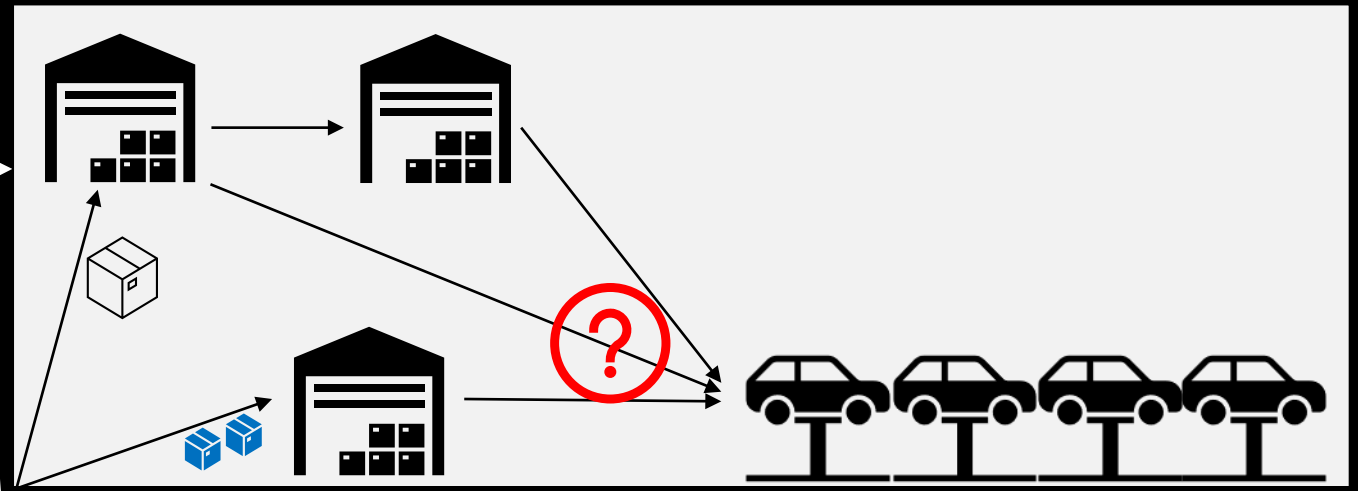


-  Forecast available / current data
-  Forecast partially available
-  Forecast not available

Stockforecast - Data

TNR	Menge (Stk)	Behälter (Count)	FIFO
ABC	99	11	03.07.22
...			

Inhouse Process



TNR	Lieferdatum	Menge (Stk)	Behälter (Count)
ABC	05.07.2022	99	11
...			

TNR	Datum	Bedarf (Stk)
ABC	05.07.2022	99
...		

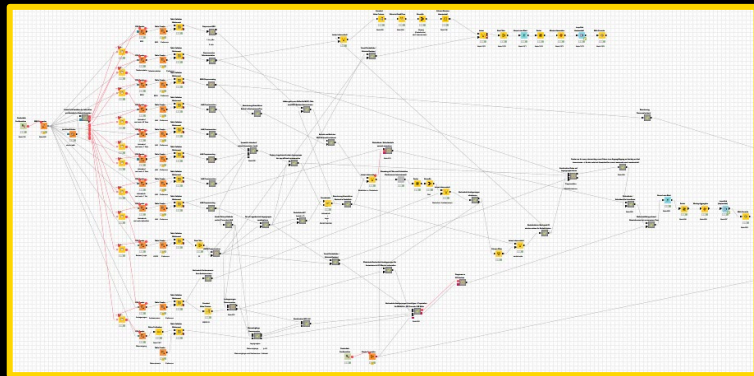
Stockforecast - Solution



Sequence of KNIME Workflows calculating Stockforecast



Dashboard for Stockforecast and Analytics as Successors



Bestandsprognose

Prognose-Dashboard (Ausblick) | Grafik: Prognose vs. IST (Verga... | Tabelle: Wareneingänge / Ausl... | Erklärung / Hinweise

Betrachtungstag Pro... 19.09.2023 | Prognosebestände (Start-of-Day)

Werk	Lagerbereich	KW	Prognos...	Bestand	Prognose	Zugang	Risiko	Zugang	Abgang
(Akte)	AKLN	19.09.2023	152.634	15.160	2.729	15.440			
		20.09.2023	155.083	17.954	-1.616	16.397			
		21.09.2023	155.024	14.223	568	16.808			
		22.09.2023	153.007	16.234	-2.596	15.992			
Lagerbereich	AKLN	23.09.2023	150.653	0	0	0			
		24.09.2023	150.653	0	0	0			
		25.09.2023	150.653	19.279	3.856	16.107			
		26.09.2023	157.681	22.400	4.032	16.820			
Lagergruppe	(Akte)	27.09.2023	167.293	10.736	-966	16.769			
		28.09.2023	160.354	10.292	411	16.590			
		29.09.2023	154.467	14.186	-2.270	16.629			
		30.09.2023	149.754	0	0	0			
Daten Innerhalb / außerhalb	Prognosehorizont anzeigen?	01.10.2023	149.754	0	0	0			
		02.10.2023	149.754	16	3	0			
		03.10.2023	149.773	9	2	0			
		04.10.2023	149.784	17.070	-1.537	16.462			
Datenstand	02.02.2024	05.10.2023	148.855	15.726	629	16.380			
		06.10.2023	148.830	17.325	-2.772	15.578			
		07.10.2023	147.805	0	0	0			
		08.10.2023	147.805	0	0	0			
		09.10.2023	147.805	13.441	2.689	16.340			

Offene Avisen (Enthalten in "Bestand Prognosestag")	Rückstände / Sofortbedarfe (Anz. Ladungssträger)
(Tägliche Aktualisierung: 7:30 - 8:00 Uhr)	Rückstände: 9.301,0 Sofortbedarfe: 8.927,0

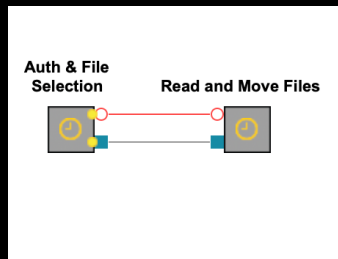
Kennzahlen	Bestand Prognosestag	Eskalationsgrenze	Betriebsgrenze
Lagerbereich	AKLN	153.000	148.000

Bestand	Umsatz	Bestand	Umsatz
Überssee	12.648	Überssee	5.224
Semidumpslaufzeit -SAT	10.350	Semidumpslaufzeit -SAT	8.029
Endfabrik	1.302	Endfabrik	0
Lieferperformance	4.669	Lieferperformance	616
Langfrist	32.967	Langfrist	13.813
Mehrere Verkaufer	11.149	Mehrere Verkaufer	1.129
Verbrauchstoberung	2.064	Verbrauchstoberung	388
Verlängerter Werklohn	3.380	Verlängerter Werklohn	450
Keine Sonderzusamm.	80.512	Keine Sonderzusamm.	17.113
Purkosten	1.443	Purkosten	407
Gesamtsumme	217.830	Gesamtsumme	56.392

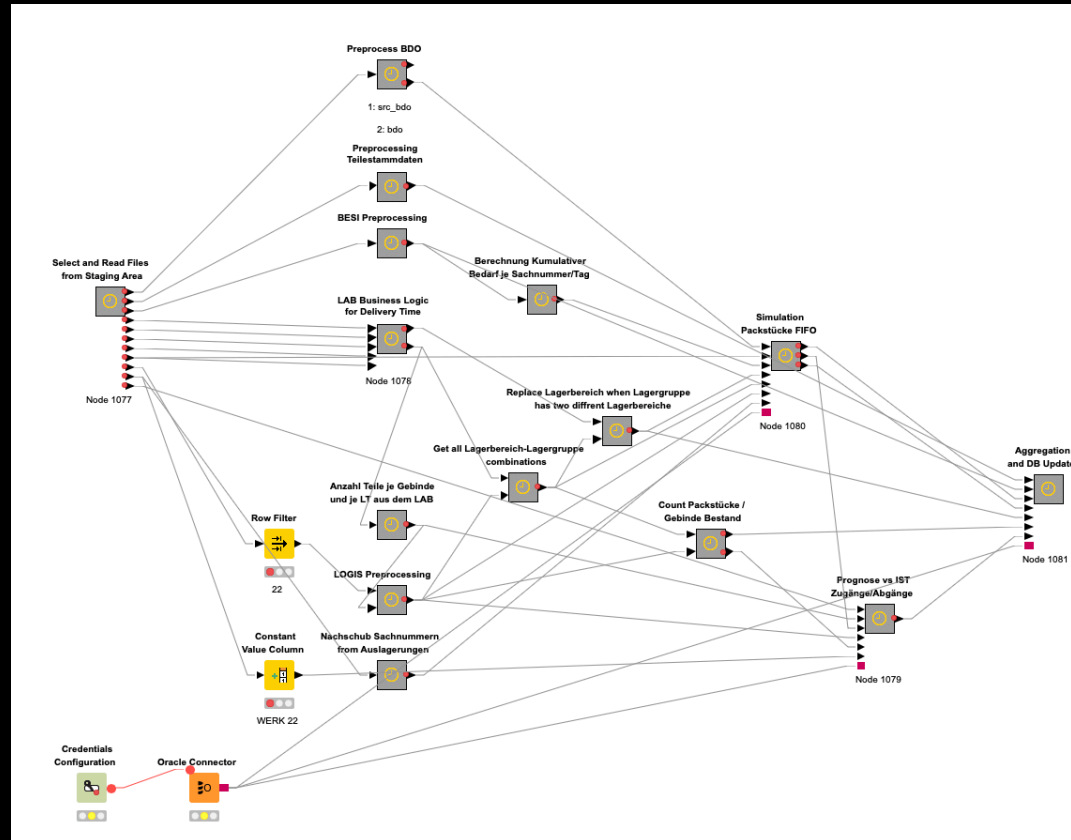
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Stockforecast - Workflow

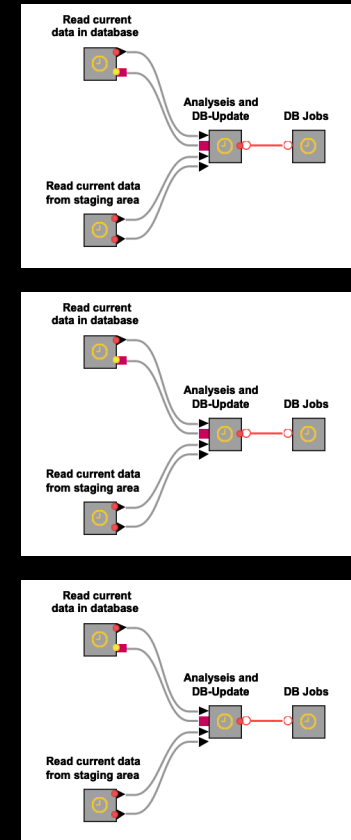
Backend-Job



Stockforecast-Job



Analytics-Jobs



Stockforecast - Dashboard

Prognose-Dashboard (Ausblick) | Grafik: Prognose vs. IST (Verga... | Tabelle: Wareneingänge / Ausl... | Erklärung / Hinweise



Bestandsprognose

Betrachtungstag Pz. 19.09.2023 Prognosebestände (Start-of-Day)

Werk (Alle)

Lagerbereich AKLN

Lagergruppe (Alle)

Daten innerhalb / außerhalb Prognosehorizont anzeigen?

außerhalb Hor...
 innerhalb Hori...

Datenstand 05.02.2024

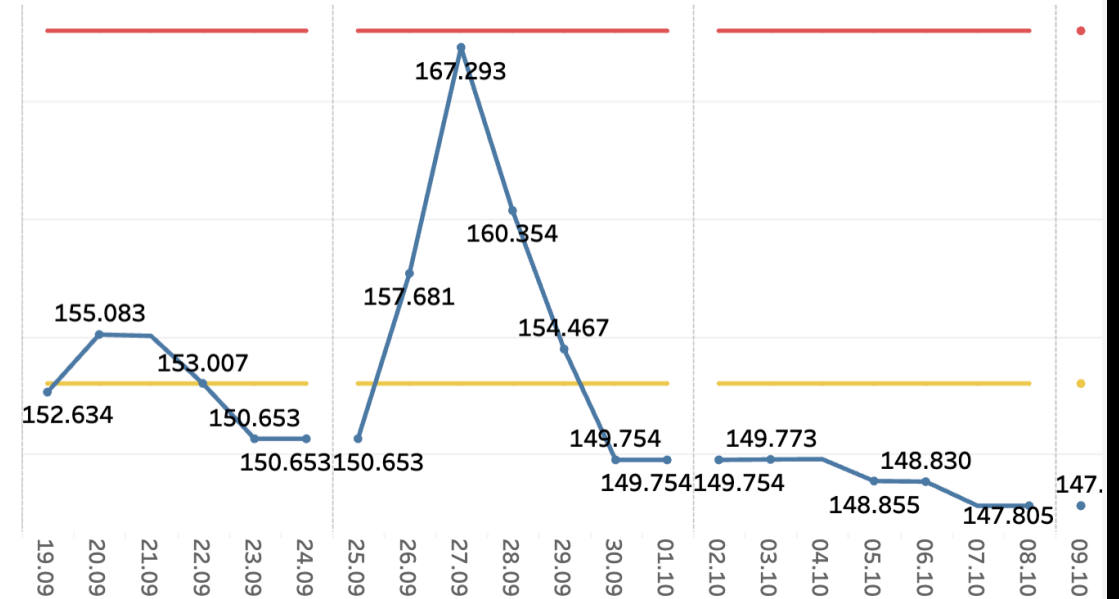
Lagerbereich	KW	Prognos..	Bestand	Prognosestag	Zugang	Risiko Zugang	Abgang	
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Rückstände	Sofortbedarfe
9.301,0	8.927,0

(Tägliche Aktualisierung: 7:30 - 8:00 Uhr)



Grenzwerte

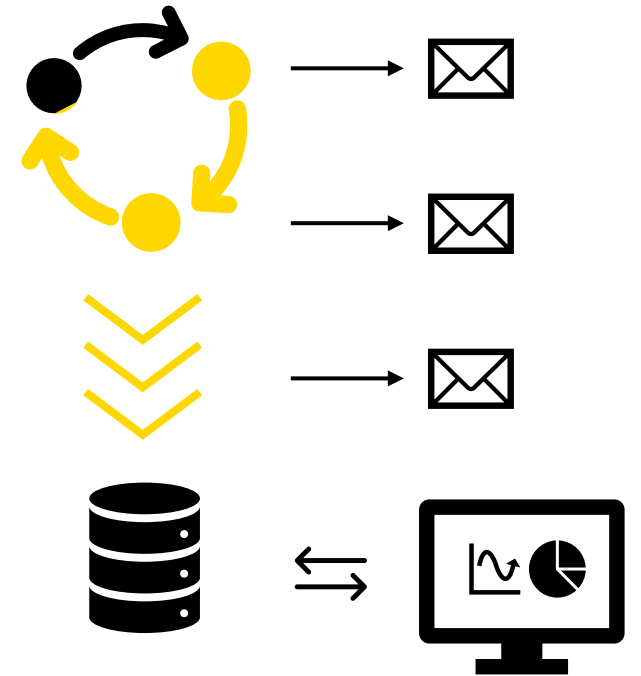
Lagerbereich	Eskalationsgrenz..	Betriebsgrenz..
AKLN	153.000	168.000

Kennzahlenamen

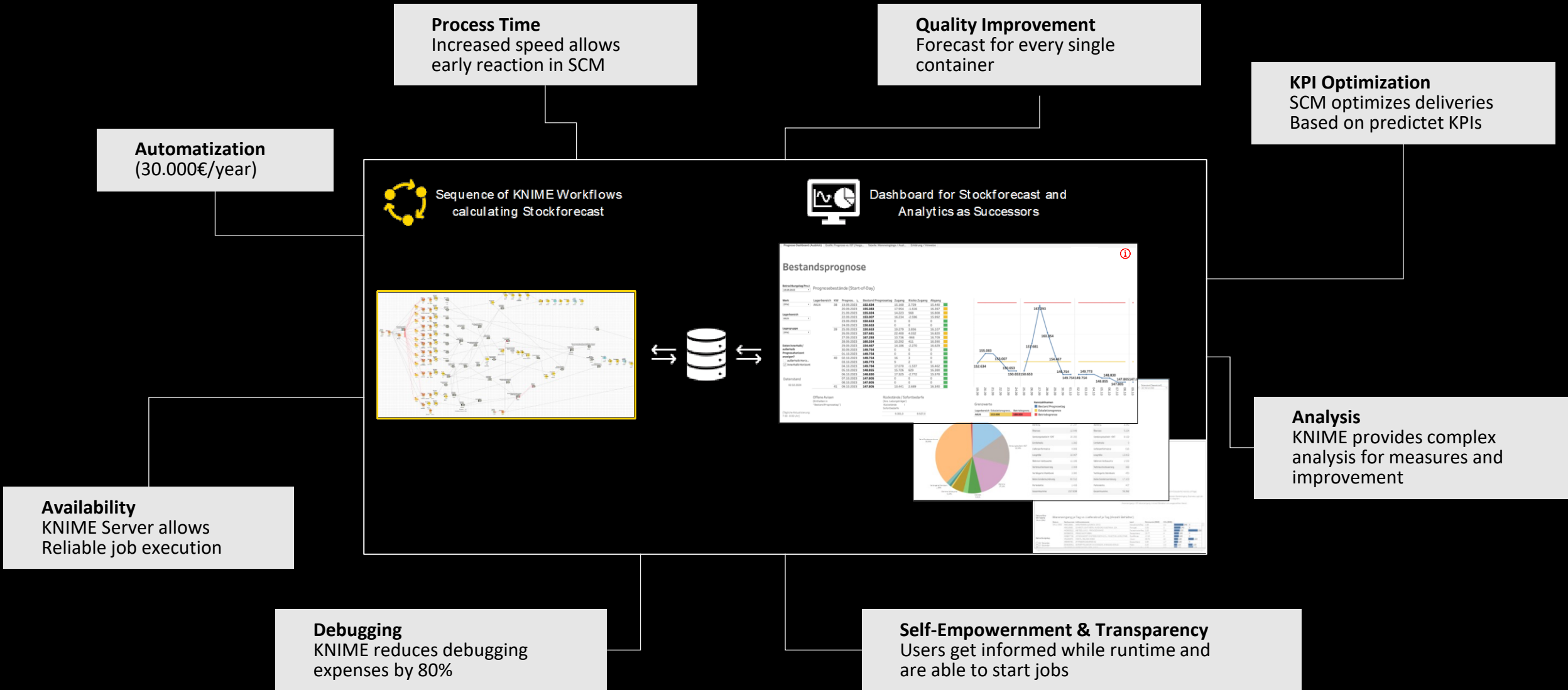
- Bestand Prognosestag
- Eskalationsgrenze
- Betriebsgrenze

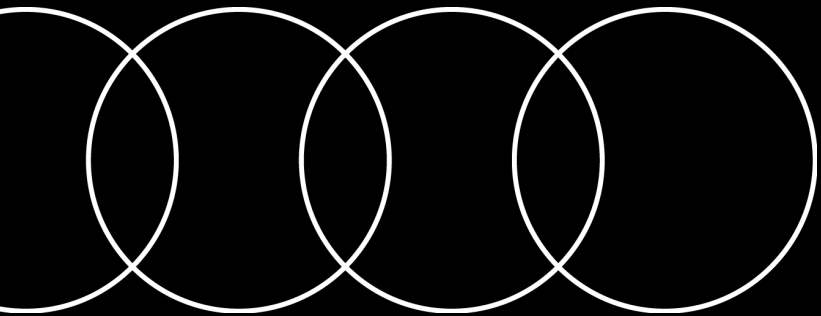
Stockforecast – KNIME Process Timeline

- 01:00 – 06:15: Source systems are updating
- 06:25: „Backend—Job providing data from source systems
- 06:30: “Backend“-Job finished
(on success): Call of Stockforecast-Job and other jobs
- 07:00: Stockeforecast is finished and forecast is available for users and shopfloor meetings.
(on success) Analytics-Jobs are called
- 07:30: Analytics-Jobs are finished and data is available
- 08:30: Start second run of job sequence



Stockforecast with KNIME - Benefits





Q&A?

