



# MRP in S/4HANA

## SAP Inside Tracks NY

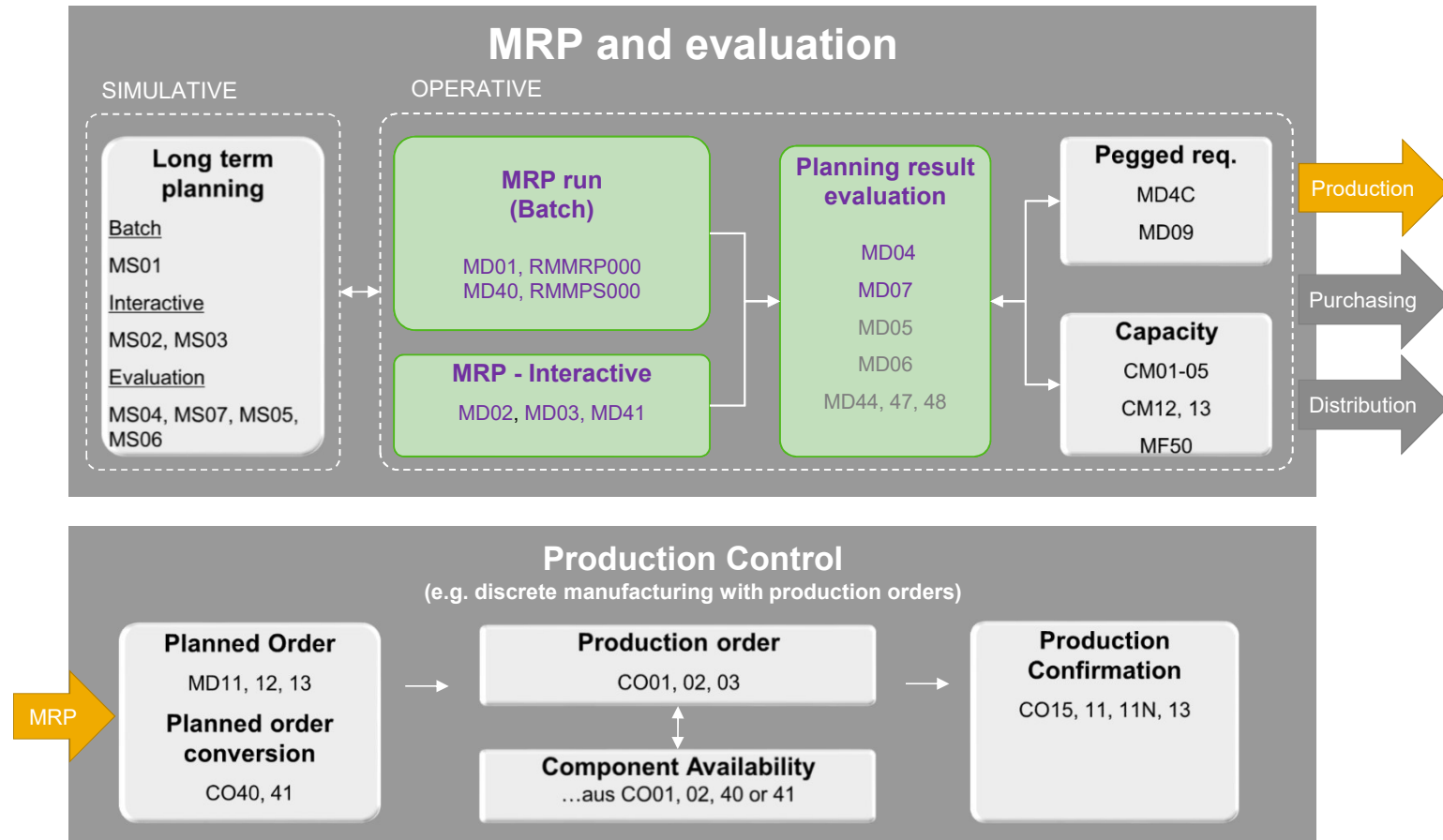
Caetano Almeida, SAP  
November 06, 2017

PUBLIC

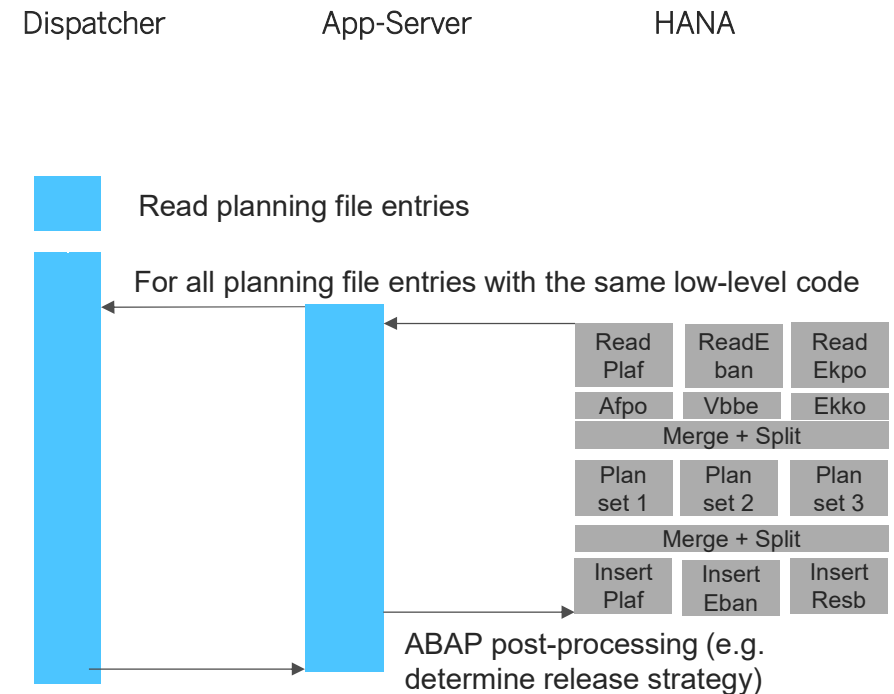
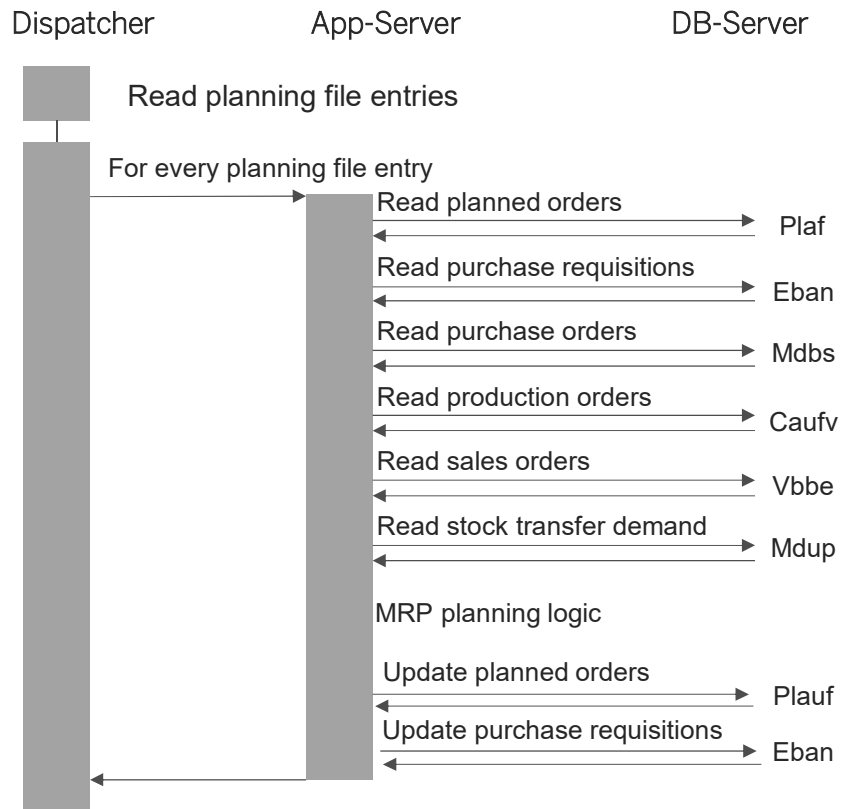


**S/4HANA 1511**

# Performance Improvement in Classic MRP



# Performance Improvement in Classic MRP



# MRP Live: Running MRP in-memory

## MRP Live in SAP S/4HANA

- » A single transaction to run MRP
- » In-memory planning run;
- » Designed to plan a large number of materials;
- » Supports existing MRP features with a few exceptions;
- » Material is automatically planned with the classic logic when a restriction is found;

**MRP Live**

Planning Scope

Plant	0001	to		
Material	S4HANA_FERT_001	to		
Product group		to		
MRP controller		to		
Material Scope	A			

Also to be Included in Planning

☐ BOM Components

☐ Stock Transfer Materials

Control Parameters

☐ Regenerative Planning

Scheduling ☐

Planning Mode

Name for Performance Log

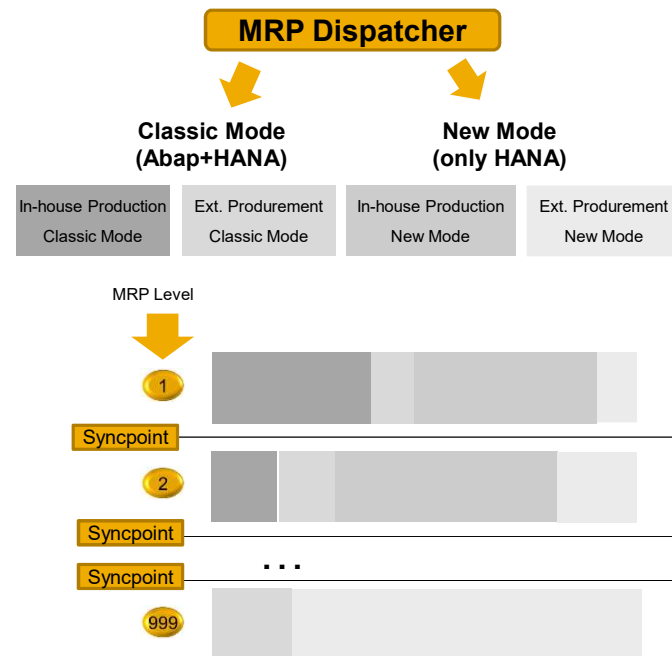
## MRP Live Performance Log per Low-Level Code

Cde	Step	Matl f.Plg	Matls Plnd	Mat.Failed	Start Date	Start Time	Elapsed	ConsTime	Time Mast.	Time Docs	Time Calc.	Time Upd.	Time PRUpd	Time PLAF	Time PLAFd	Time SchdL	Time Q.Qty	Pur
000	MRP Live on HANA	4	4	0	26.08.2016	21:06:47	00:00:17	17,546	2,115	3,089	5,945	2,602	1,213	0,698	0,186	0,302	0,003	
000	Classic MRP	1	1	0	26.08.2016	21:07:04	00:00:06	5,784	0,000	5,670	0,003	0,108	0,000	0,000	0,000	0,000	0,000	
000	Postprocessing	0	0	0	26.08.2016	21:07:04	00:00:01	0,616	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	
001	MRP Live on HANA	1	1	0	26.08.2016	21:07:09	00:00:10	10,135	0,249	1,256	3,416	1,120	0,255	0,377	0,135	0,192	0,003	

# MRP Live: Optimized MRP run

## MRP run with “MRP Dispatcher”

- **Automatic determination** and selection of planning mode per material, dependent on functional requirements of the material regarding planning; can be overruled manually
- The functionality of the new mode will be **enhanced continuously** – with that more and more materials can be planned in the new mode
- **Special functionality** will remain in the classic mode
- Existing **customer enhancements** will also be supported in the classic mode
- **Result:** The implementation of this planning run will not lead to **loss of functionality**, it can be used immediately in a compatible way



# MRP Cockpit: Material Shortage

Enables immediate detection of material shortages based on real-time data.

Considers multiple shortage definitions (=rules that define how shortages are determined)

Shows all supplies and demands in chronological order and determines available stock for each day.

Material	Vendor	First Shortage	Shortage Quantity	Stock Availability
Notebook 3.2 GHZ 8 GB 15.6" FIG-T-IT352	Sunny Electronics GmbH FIG-VEND03	16.12.2013	10 PC	11 Materials
Monitor 32 INCH LCD FIG-T-IT255	Sunny Electronics GmbH FIG-VEND03	17.12.2013	60 PC	
TV 32 INCH LCD FIG-T-IT700	Electronics Store FIG-VEND04	16.12.2013	30 PC	
Monitor 21 INCH LCD FIG-T-IT250	Sunny Electronics GmbH FIG-VEND03	16.12.2013	10 PC	
NAV 300 - GPS Navigation System FIG-NAV-001021	Electronics Retail & Co. FIG-VEND01	19.12.2013	80 PC	
TV 19 INCH LCD FIG-T-IT720	Electronics Store FIG-VEND04	16.12.2013	50 PC	
Notebook 2.5 GHZ 8 GB 14" FIG-T-IT341	Sunny Electronics GmbH FIG-VEND03	20.12.2013	70 PC	
Monitor 32 INCH LCD FIG-T-IT253	Sunny Electronics GmbH FIG-VEND03	20.12.2013	60 PC	

## Value Creation through:

### 1. Performance Value



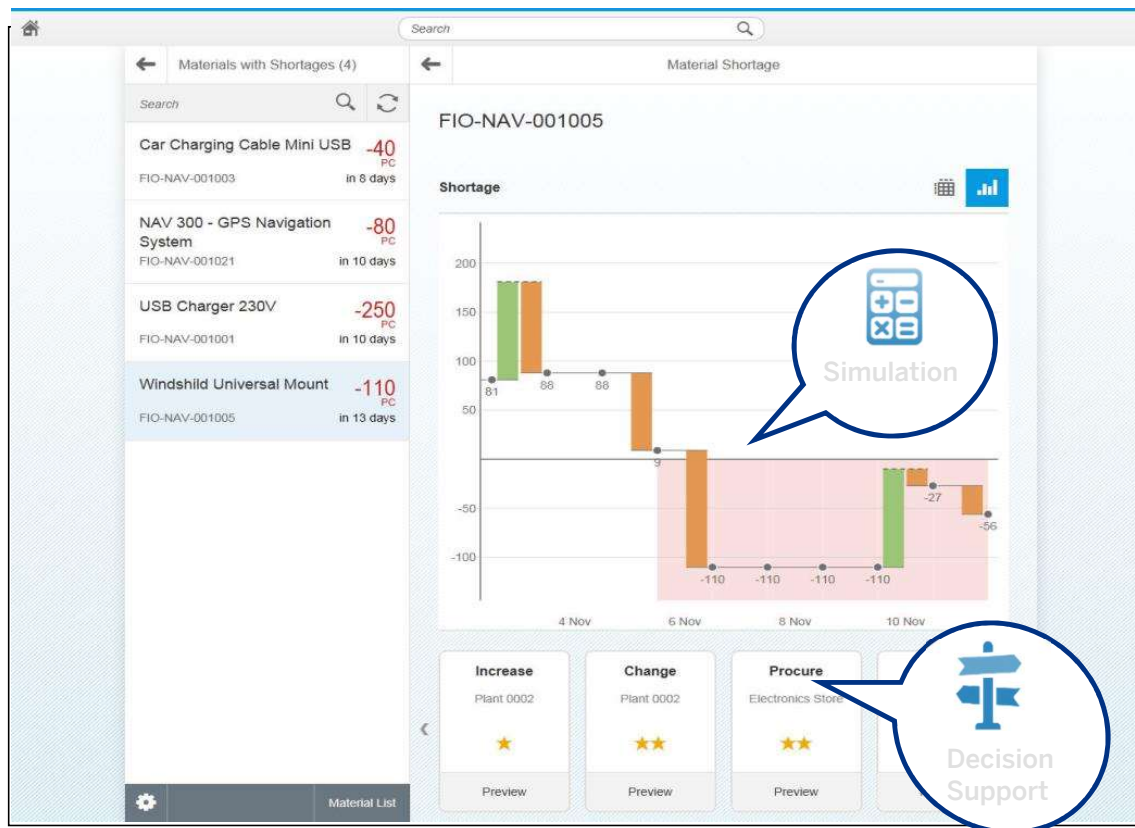
- Real-time data integration
- Single-query access to data

### 2. Process Innovation



- Fast and precise ATP confirmation towards customers.
- Decrease stock and increase service level.
- Reduce Stock, increase service level, event based reaction to unexpected changes.
- New User Experience.
- Fast multiple ATP checks and fast rescheduling.

# MRP Cockpit: On the fly simulation and decision support



- » Real time data from all areas of material management including procurement lead times, inventory stock availability, lot sizes, manufacturing scheduling and sales orders across multiple sites
- » Suggestion of potential solutions for the shortage through "Solution Cards" with all information needed to resolve the material shortage (e.g. Reschedule Purchase Order, Increase Purchase Order, stock transfers).
- » Real Time Simulation computes the future inventory situation in detail. The optimization algorithms make use of the simulation to find the ideal replenishment strategies
- » Daily work tasks focused on exceptions and on the most urgent problems with the highest financial implication



# Simplification in S/4 HANA

## Subcontracting

- » **MRP area** is the default option for planning subcontracting in S/4 HANA.
- » It is only necessary to create the **MRP area** in customizing and it will be used by MRP.
- » The **MRP area** can be created for a material to define specific settings at MRP area level.
- » If there is no **MRP area** for the vendor, subcontracting requirements will appear under the plant stock

## Storage Location Planning

- » Planning a storage location separately or excluding a storage location from MRP is only possible by means of **MRP areas**.
- » A report is used to check the prerequisites to replace those obsolete functionalities with MRP areas.

## Planning file

- » In SAP S/4HANA the planning file was optimized for simplified update logic, consistency and for update performance.
- » Planning files are now stored on table **PPH\_DBVM**.
- » Transaction **PPH\_MDAB** replaces the old transactions **MDAB** and **MDRE**.
- » Report **PPH\_SETUP\_MRPRECORDS** replaces the reports **RMMDVM10**, **RMMDVM20**.
- » Transaction **MD21** is still used to display planning file entries.

# Simplification in S/4 HANA: Simplified Sourcing

## Simplified source determination in SAP S/4HANA

- » Source List is no longer mandatory for source determination in MRP
- » A new field in the Info Record is used to make a source of supply relevant to MRP
- » Quota arrangement can be used to prioritize a source of supply
- » Source list can be considered in specific scenarios (e.g. do not generate schedule lines)

### Quota arrng.

- MRP tries to find a quota arrangement
- Replenishment proposals are created according to the quotas

### Schedulin Agreemt.

- MRP tries to find a Scheduling Agreement
- Delivery Schedules are created

### Contract

- MRP tries to find a Contract
- Purchase Requisitions are created

### Info record

- MRP Tries to find an Info Record
- Purchase Requisitions are created

## SAP Note 2268069 - S4TWL - Simplified Sourcing

# Simplification in S/4 HANA: Production Version

**Program for production version migration for BOM determination**

Migration Criteria

Material				
Plant	0001	to		
MRP Controller		to		
Material type		to		
Task List Type	N	to	S	

Migration Limitations

- ☐ Only PV with routing
- ☐ Only same alternatives
- ☐ Only BOMs allocated to Routing
- ☒ Based on Production Orders
- ☐ Also unchanged PVs

Migration Execution

- ☒ Run in Simulation Mode
- ☐ Run in Actual Mode

- » Production version is mandatory for BOM explosion during the MRP run
- » Standard report CS\_BOM\_PRODVER\_MIGRATION02 can be used for the mass creation of production versions with BOM and routing.
- » New status to make production version not relevant to MRP

**S/4HANA 1610**

# MRP Live Planning PP/DS Materials

**MRP Live**

Planning Scope

Plant	0001	to	
Material	DEMO*	to	
Product group		to	
MRP Controller	001	to	

☐ Regenerative Ping

Also to be Included in Planning

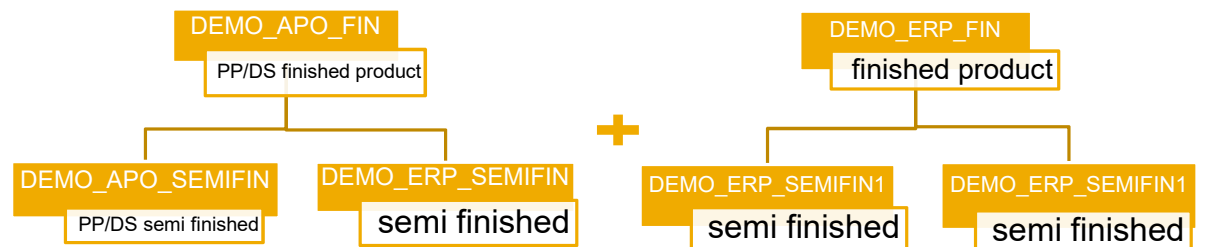
☐ BOM Components

☐ Stock Transfer Materials

Control Parameters

Planning Mode	1
Scheduling	
Name for Performance Log	

## MRP Run with MRP live and Advanced Planning Materials



## Benefits

- One MRP planning run for MRP live logic and advanced PPDS heuristics
- One low level code calculation

# Fiori App for Truckload optimized Purchase Orders

## Fiori App : Create Optimal Orders for Shipment

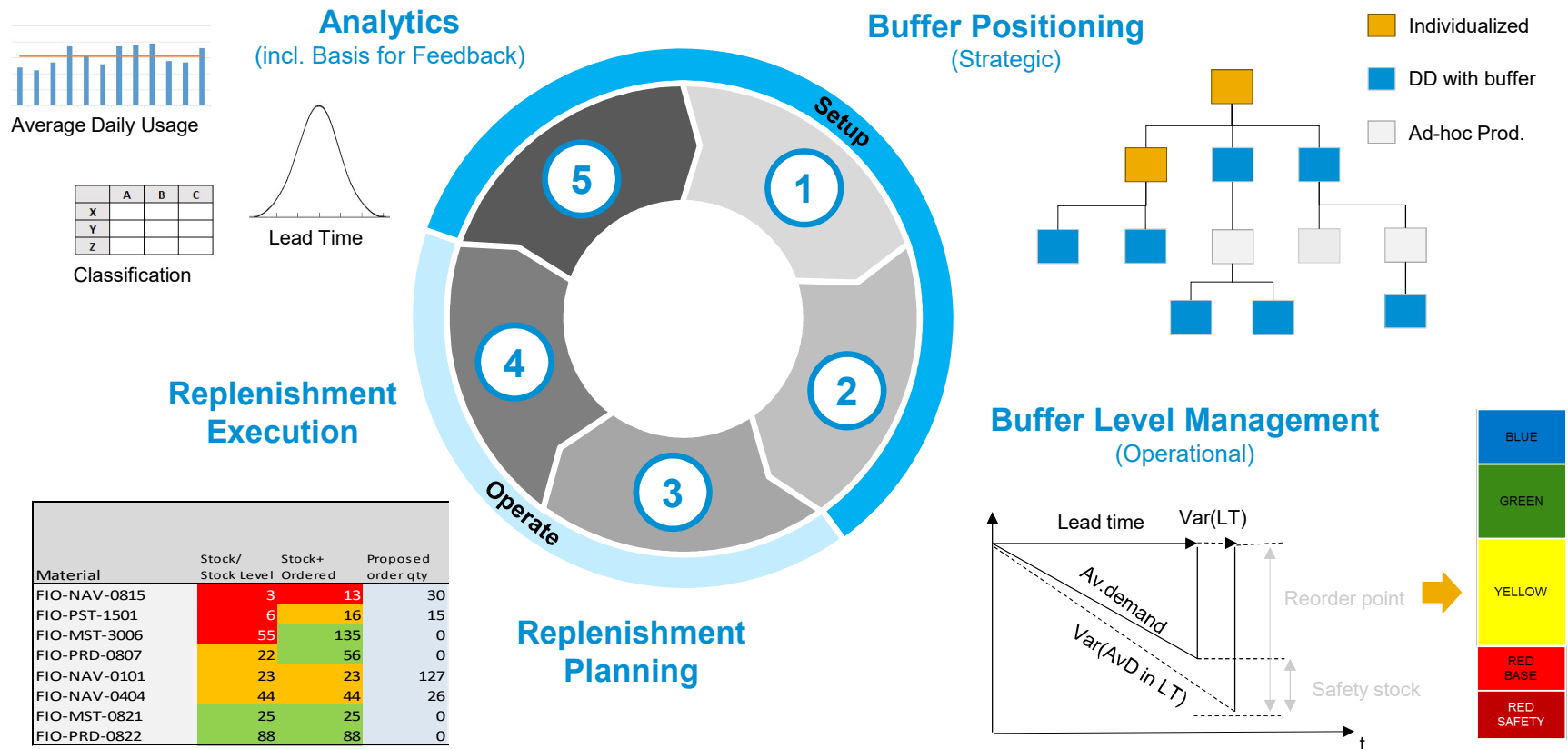
- Reduce transportation costs utilizing truckload optimized purchasing
- Reduce communication effort between supplier and customer
- The Material Planner can quickly identify all materials to be ordered due today or within the next days.
- All materials from one vendor are ordered together in a way that the availability is balanced and that the used means of transportation are fully loaded.

Status	Material	Preferred Vendor	Next Order (in Working Days)	Quantity in Logistical Unit (PAL)	Time till Next Replenishment	Stock Availability (Next 21 Days)
	Total		In 4 days	20	0	
	FIO-TOP-M1 Battery M1 12V	Trimax Electricals FIO-VEND02	In 4 days	14	0	
	FIO-TOP-M10 Interrupter M10	Nova Electronics FIO-VEND01	2 days ago	0	0	
	FIO-TOP-M2 Battery M2 9V	Super Instruments FIO-VEND03	2 days ago	0	0	
	FIO-TOP-M3 Screened Cable M3 1.5m	Trimax Electricals FIO-VEND02	In 4 days	2	0	
	FIO-TOP-M5 Circuit Breaker M5	Trimax Electricals FIO-VEND02		2	0	
	FIO-TOP-M6 Circuit Breaker M6	Trimax Electricals FIO-VEND02		2	0	

**S/4HANA 1709**

# SAP Demand-Driven Replenishment

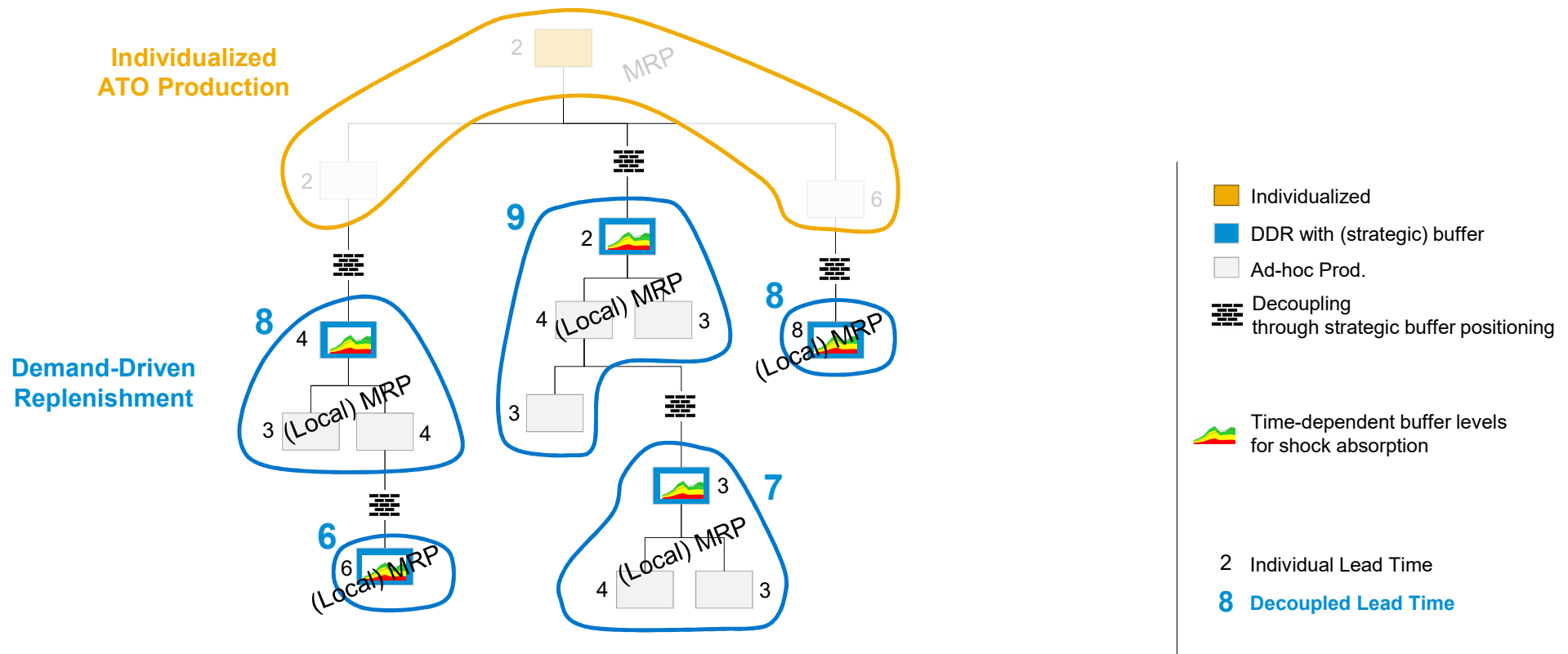
## The planned End-to-End Process Flow in S4HANA





# SAP Demand-Driven Replenishment

What is the “Decoupled Lead Time”?



# SAP Demand-Driven Replenishment

## Review and Adopt Buffer Level Proposals

Manage Buffer Levels

Standard \*

Editing Status:  All  Product:  Product Group:  Plant:  Procurement Type:

Value Indicator:  Lead Time Indicator:  Variability Indicator:  BOM Usage Indicator:  Max Stock Deviation:  Adapt Filters (2)

Products (3) | Standard

Adopt Ignore

<input type="checkbox"/> Product	Plant	Buffer Values	Red Zone	Yellow Zone	Green Zone	Buffer Level Overview	Variability	Decoupled Lead Time (Days)	Actions
<input type="checkbox"/> SemiFin_006_DD_2_DESC SEMIFIN_006_DD_2	1010 Plant 1 DE	Current	1.534 EA	0.533 EA	0.426 EA		Z (3.132)	E (1.00)	Adopted 7 days ago
<input type="checkbox"/> SemiFin_006_DD_1_DESC SEMIFIN_006_DD_1	1010 Plant 1 DE	Current	3.456 EA	1.2 EA	0.96 EA		Z (3.132)	E (1.00)	<input type="button" value="Adopt"/>
		Proposed	1.728 EA	1.2 EA	0.96 EA		Z (3.132)	E (1.00)	Adjusted 7 days ago
		Change	-1.728 EA	0 EA	0 EA		0 %	0 %	
<input type="checkbox"/> SemiFin_006_DD_3_DESC SEMIFIN_006_DD_3	1010 Plant 1 DE	Current	1.535 EA	0.959 EA	0.298 EA		Z (3.132)	E (1.00)	<input type="button" value="Adopt"/>
		Proposed	0.944 EA	0.426 EA	0.426 EA		Z (3.132)	E (1.00)	Adjusted 8 days ago
		Change	-0.591 EA	-0.533 EA	0.128 EA		0 %	0 %	

# Thank you.

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