

KDD051 - Integration of SAP S/4HANA and Maestro for Planning

Status	Approved
Owner	NICASTRI-ext, Michele
Stakeholders	WILL, John Anderson, Todd BLANCKE, Ward KELLETT, Damien Hellgoth, John VIDBERG, Olivier

Issue

The ERP Rebuild project will introduce SAP S/4HANA as the ERP system for Syensqo, instead of the current different ECC systems. Meanwhile, Syensqo is running a project to introduce an external planning system: Maestro.

The current Maestro business case and scope are based on the existing dual landscape ECC system which will be replaced by the ERP rebuild product with S/4HANA.

Maestro modules currently in scope are:

- **Supply Chain Planning:**
 - **Demand Planning:** Forecasting demand and adjusting plans based on real-time data.
 - **Supply Planning:** Managing inventory levels, production schedules, and supplier coordination.
- **Inventory Management:**
 - **Stock Optimization:** Ensuring optimal inventory levels to balance supply and demand.
 - **Inventory Visibility:** Real-time tracking and reporting of inventory levels across the supply chain.

We must define the boundaries between S/4HANA and Maestro functionalities and the data flows to be implemented between the 2 systems.

The planning process is composed by the following elements:

- Sales and Operations Planning
- Demand Management
- Material Requirements Planning
- Detailed Scheduling - Capacity Levelling
- Order Management
- Production Plan Fine Tuning and Shop Floor operational management
- Exception Management

The different options analysed in this document explore different combinations of execution of each of these steps in Maestro and/or S/4HANA and/or MES systems.

In particular:

- Sales and Operations Planning: Maestro
- Demand Management: Maestro
- **Material Requirements Planning: Maestro and/or S/4HANA**
- **Detailed Scheduling - Capacity Levelling: Maestro and/or S/4HANA (it is not in the current scope for Maestro)**
- Order Management: S/4HANA
- Production Plan Fine Tuning and Shop Floor operational management: S/4HANA and/or local MES
- Exception Management: S/4HANA and/or local MES

The different options considered differ on the system(s) used for MRP runs and Detailed Scheduling.

Recommendation

Option B is the recommended one: Maestro will take care of S&OP, Demand Management and MRP. This includes Sales Forecast, Customer Requirements, Independent Requirement and high level production plan. S/4HANA will be the master system for Production Planning and Fine Scheduling, via MRP and PP/DS functionalities. This is considered the best balance between a flexible and scalable planning model and the simplicity of the interfaces.

The Head of Function has approved Option C

Background & Context

At the moment in Syensqo the tools and methods for production planning are not harmonized:

S&OP is executed in some cases in Dynasis, in many cases in Google Sheets or local tools. The same is valid for Demand Management.

MRP is mostly running in SAP ECC, even though it is largely used by some plants, almost ignored by others, that are re-planning manually their production disregarding MRP results.

Fine Scheduling and Capacity Levelling is performed in Google Sheets, other SAP Interfaced commercial Software, Local Tools or just manually.

Shop Floor management (urgencies, outages, last minute changes) are managed mostly visually directly in the shop floor and are visible only after actual confirmations.

The scope of Maestro project (Kinaxis) is to substitute Dynasis and provide a unique standard tool for S&OP and DM across all Syensqo.

Maestro Project does not include Advanced Scheduling and Capacity levelling at the moment.

Assumptions

Important to note that other external systems, like Google Sheets, Excel, local tools, are not part of the model anymore, each plant will identify S/4HANA or Maestro as the MRP and Fine Scheduling system. This is valid for all 3 options.

S/4HANA is the master system for all relevant master data (Material master, Vendor, Customers, BOM, Recipes/Routings, Production Versions, Product costing, etc.)

S/4HANA is the master system for Stock and Process/Production Orders.

Maestro must be ITAR compliant for the production data it will receive from S/4HANA. The same applies for the other Export Control and Data Access requirements.

Aspentech Scheduler will remain for the plants currently using it. The same applies for other MES scheduler or local scheduler.

Constraints

Order Management must be in S/4HANA as this is the system where Product costing and Actual costing happen.

S/4HANA will be also the master system for Process Orders / Production Orders towards all MES different systems, likewise AS-IS model.

Timeline: Maestro project must guarantee that the functionalities of S&OP and DM will be available before the S/4HANA go-live for each plant in scope, or at least at the same time. Contingency Plan: in case Maestro won't be ready, the Planned Independent Requirements will be created (or uploaded) directly in S/4HANA, to allow the subsequent steps to work.

Impacts

PPDS in S/4HANA is the tool for fine scheduling and capacity levelling. It is a complete new object for Syensqo and will require dedicated analysis and training.

Analysis and visibility of the rationale behind long term sales plan will be not visible in S/4HANA, as it will be created in Maestro and we will receive only the final result of that elaboration.

The following Data flows are foreseen via interfaces:

- S/4HANA to Maestro:
 - Material Master (definition and MRP parameters)
 - Product and Customer Hierarchies
 - Purchasing Info Records
 - Outline Agreements
 - Business Partners (Vendors, Sold-To, Ship-To, etc.)
 - Quotas
 - BOMs
 - Routings and Recipes
 - Production Versions
 - Product Costs
 - Stock
 - Sales History
 - Sales Documents
 - All firm planning elements
- Maestro to S/4HANA
 - in Detail Design we will define the data flow.

Currently only a subset of plants in Syensqo are using automatic tools for planning and SAP MRP. The new model foresees a full automatic planning process, with users intervening only to manage exceptions. A relevant Change Management is required to have all the plants embracing the automatic process in Maestro, SAP MRP and SAP PP-DS.

Business Rules

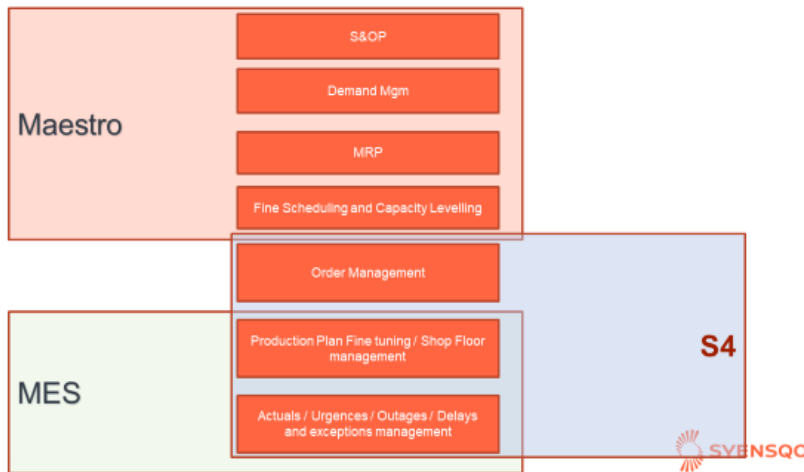
PPDS **and Maestro** will be the tools in Syensqo for Fine Production Scheduling, **as per Head of Function approval of Option C.**

Maestro is the only tool in Syensqo for S&OP and Demand Management

While Maestro will run an internal MRP to have visibility of the procurement plans of Raw materials, we have the main MRP run in S/4HANA

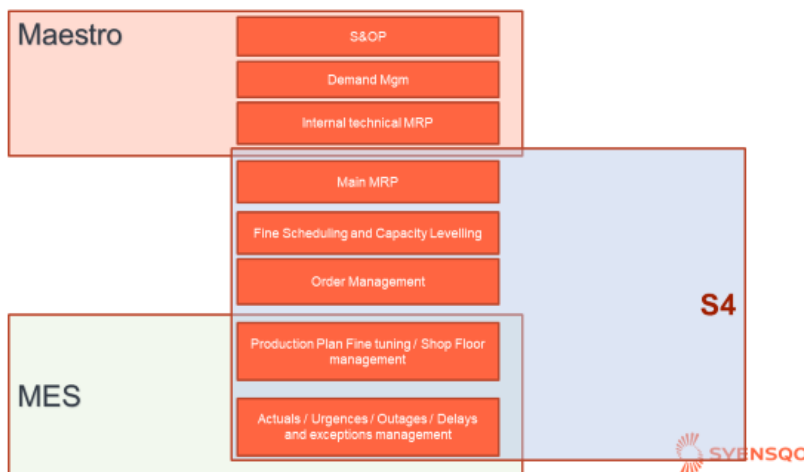
Options considered

Option A



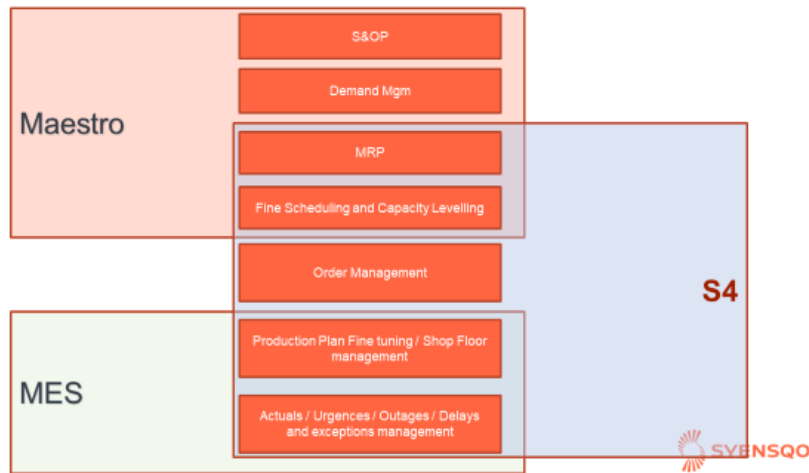
Maestro is used for S&OP, DM, MRP and Detailed Scheduling, S/4HANA is used for Order Management, S/4HANA and/or MES is used for Shop Floor control, depending on the MES system functionalities available for each plant / production line. In this option the transactional data flow from Maestro to S/4HANA will include Firmed and Dispatched Planned Orders.

Option B



Similar to Option A, but here S/4HANA takes care also of Detailed Scheduling, via PP-DS functionalities. While Maestro will run an internal MRP to have visibility of the procurement plans of Raw materials, we have the main MRP run in S/4HANA. In this option the transactional data flow from Maestro to S/4HANA will include Firmed Planned Orders (not Dispatched) for the top level of the BOMs.

Option C



Here we open up the possibility to manage MRP and Detailed Scheduling both in Maestro and S/4HANA. This will allow each GBU or plant to pick up the system that suits them better and increase the flexibility of the planning model used by Syensqo, to leverage the best of both systems.

The complexity of the interface is higher in this option, as we must design a flexible data flow from Maestro to S/4HANA; able to send Planned Independent Requirements, Firmed Planned Order, or Firmed and Dispatched Planned Orders, depending on the planning model selected by each plant.

Evaluation

	Option A	Option B	Option C
Future Proof and Scalability	<p>⊖ Running Detailed Scheduling in a system outside the ERP will reduce the chances of integration and cross-plant / cross-company optimization. Giving to an external system the visibility of all data natively available in S/4HANA and relevant for detailed scheduling generates a highly complex and rigid model.</p> <p>Example of data required by Fine Scheduling:</p> <ul style="list-style-type: none"> Cross Plant and Cross Company ongoing transfers Current Inspection Lots and related Planned End Date Stock Status (Blocked, Restricted, etc.) Availability of stock at Vendor etc. 	<p>⊕ Detailed Scheduling in S/4HANA will leverage the integration with all other ERP components: cross plant and cross company transfers, stock statuses, availability check, visibility of Inspection Lots etc.</p> <p>⊕ We have the possibility to run full MRP in S/4HANA. This allows to roll-out the model to new plants without Maestro, if preferred, allowing simpler and faster integration of new acquired plants.</p>	<p>⊕ as this option is the merge of A and B, we have the possibility to leverage the same advantages listed in option B.</p>
Simplicity	<p>⊖ The set of data to be exchanged between the systems is much higher than option B, the model is more complex and it is more risky and prone to extra-customization.</p>	<p>⊕ this is the simplest possible model we can introduce to make S/4HANA and Maestro working together.</p>	<p>⊖ as this option is the merge of A and B, we experience the same complexity required by option B</p>
Reduce Training needs	<p>⊕ We train the users to a single system for each step.</p>	<p>⊖ we train the users to a single system for each step, except for MRP that can run in the 2 systems and will require double training.</p>	<p>⊖⊖ we need double training for MRP and for Fine Scheduling</p>
Protect current /previous investment	<p>⊖ current engagement of Kinaxis for Maestro does not foresee Fine Scheduling, it would require an extra investment on that side</p>	<p>⊕ this option is 100% aligned with the current scope of Maestro project.</p>	<p>⊖⊖ this option would require both the extra investment on Maestro for Fine Scheduling and the implementation of PPDS in S/4HANA</p>

Planning Functionalities	+ we have a full suite able to run all steps of production planning	+ we have a full suite able to run all steps of production planning	+ + we have a full suite able to run all steps of production planning and we have the option to choose the best tool for each case for Fine Scheduling step.
Interface complexity and effort	- complex and larger data set required from S/4HANA to Maestro to allow Fine scheduling there	+ reduced and simpler data set to exchange between the 2 systems	- - complex and larger data set required from S/4HANA to Maestro to allow Fine scheduling there, plus flexible interface from Maestro to SAP to allow the different models to run concurrently.

	Weight	Option A	Option B	Option C
Future Proof and Scalability	VH	Low	Very High	High
Simplicity	H	Low	High	Low
Reduce Training needs	M	High	Low	Very Low
Protect current/previous investment	H	Low	High	Very Low
Planning Functionalities	VH	High	High	Very High
Interface complexity and effort	H	Low	High	Very Low
TOTAL		Medium	High	Low

See also

File

Modified

PDF File Workspace Mail - Fwd_ FOR review - KDD051 - Integration S4 Hana and Maestro.pdf

Sept 25, 2024 by FALL-ext, Cheikh

Change log

Version	Published	Changed By	Comment
CURRENT (v. 32)	Sept 23, 2024 10:10	NICASTRI-ext, Michele	
v. 31	Sept 23, 2024 10:06	NICASTRI-ext, Michele	
v. 30	Sept 23, 2024 10:05	NICASTRI-ext, Michele	
v. 29	Sept 16, 2024 19:23	NICASTRI-ext, Michele	
v. 28	Sept 16, 2024 19:21	NICASTRI-ext, Michele	
v. 27	Sept 16, 2024 19:18	NICASTRI-ext, Michele	
v. 26	Sept 16, 2024 16:23	NICASTRI-ext, Michele	
v. 25	Sept 12, 2024 12:50	NICASTRI-ext, Michele	
v. 24	Sept 12, 2024 12:49	NICASTRI-ext, Michele	
v. 23	Sept 09, 2024 22:06	NICASTRI-ext, Michele	
v. 22	Sept 09, 2024 11:06	NICASTRI-ext, Michele	

v. 21	Sept 09, 2024 10:30	WENNINGER-ext, Sascha
v. 20	Sept 09, 2024 01:16	NARAHARI-ext, Bhargavi
v. 19	Sept 04, 2024 12:25	NICASTRI-ext, Michele
v. 18	Sept 04, 2024 12:16	NICASTRI-ext, Michele
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v. 4	Aug 26, 2024 14:47	NICASTRI-ext, Michele
v. 3	Aug 26, 2024 11:51	NICASTRI-ext, Michele
v. 2	Aug 26, 2024 11:48	NICASTRI-ext, Michele
v. 1	Jul 17, 2024 16:34	NICASTRI-ext, Michele

Workflow history

Title	Last Updated By	Updated	Status
There are no pages at the moment.			