Working Paper

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Relationship Between Business Process and Data in the SAP Standard Software Solution

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This technical note uses a simple example to show the relationship between business process and data in the SAP solution. Business process functions are organized and managed inside SAP in a strict functional hierarchy. This hierarchy can be presented in the ARIS[1] Business Architect at all levels, with SAP master data attached at the lowest. This removes ambiguity about data sources and allows data to be managed relative to the scope of SAP solution. An ARIS representation of the SAP hierarchy is presented in Figure 1.

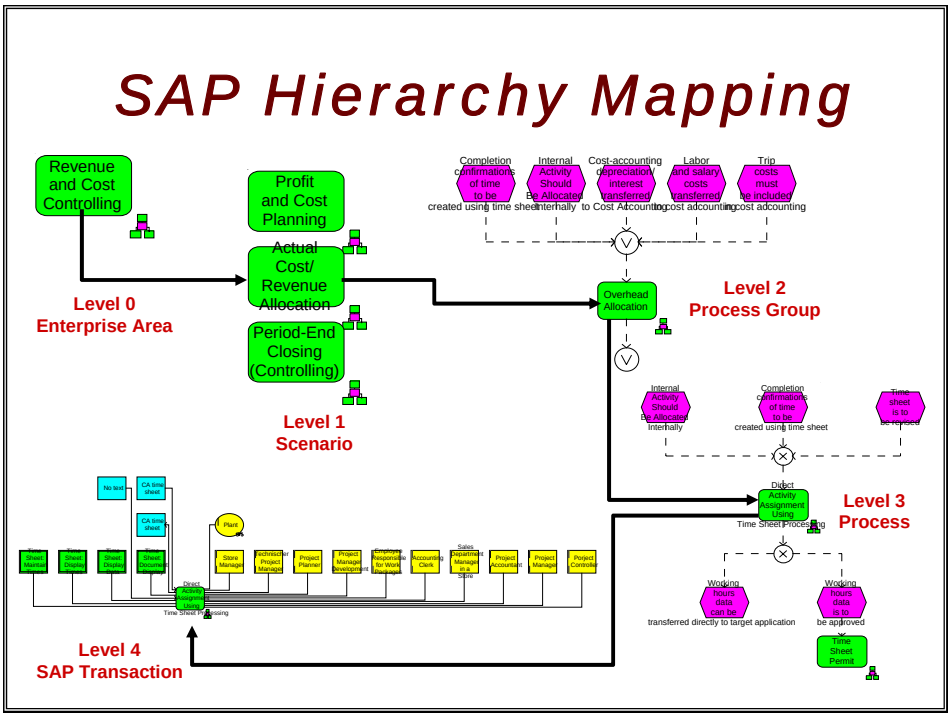

Figure 1: An example of an SAP hierarchical decomposition in ARIS

In the following figures, we describe the decomposition using a simple example from the area of Material Requirements Planning (MRP). We begin the discussion at the scenario level, since the Enterprise Area (Level 0) is a single function that resides at the top of the hierarchy. In Figure 2, the scenario (Level 1) is Material Requirements Planning. This scenario can be represented as a business process at the process group (Level 2). The modeling method in ARIS is the extended event-driven process chain diagram (eEPC). This decomposition is presented in Figure 2.

[1] ARIS stands for Architecture of Integrated Information Systems.

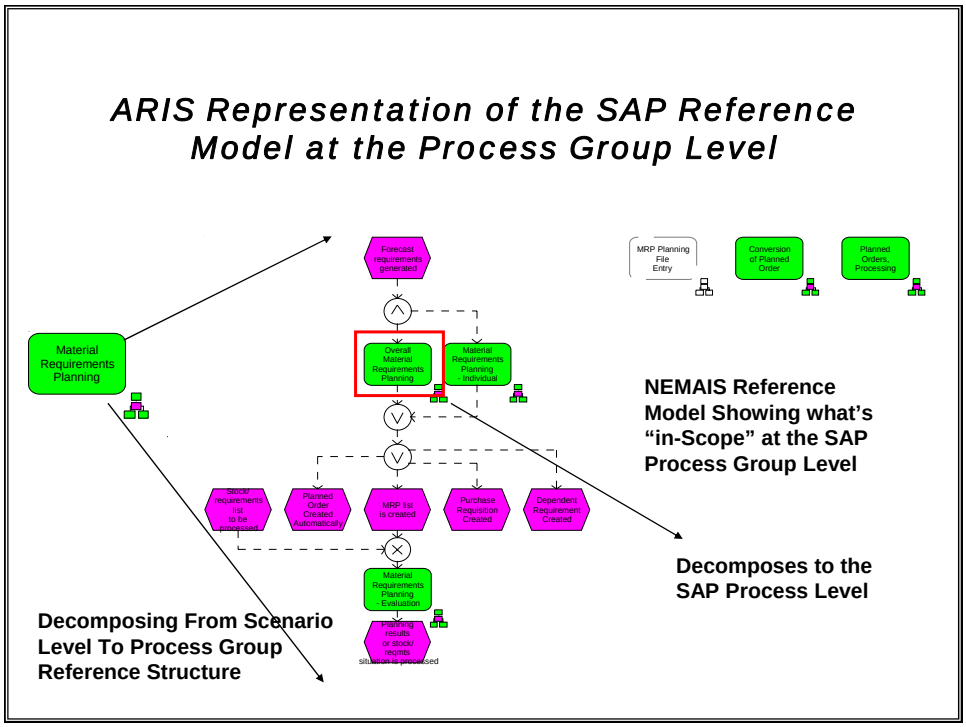

Figure 2: Decomposition to the SAP Process Group level in ARIS

Each function in the eEPC can be further decomposed to the SAP Process (Level 3). In this example, we select the single function in Figure 2 that is highlighted with the red rectangle. This function is named Overall Material Requirements Planning. The decomposition of this function to the process level is depicted in Figure 3. As indicated in Figure 3, the process is comprised of the following steps:

- Specify plant where planning run is to be carried out,
- Determine planning type,
- Determine type of purchase requisition creation,
- Specify type of schedule line creation,
- Specify type of MRP list creation, and
- Determine if lead-time scheduling is also to be carried out.

These process steps are associated with the SAP transaction codes. The ARIS model type for describing this allocation is the Function Allocation Diagram (FAD). The FAD for Overall Material Requirements Planning is presented in Figure 4. This FAD can allocated any relevant object to an SAP function, but in this case we focus on the two objects that are relevant for this discussion: SAP Transaction Codes and Master Data.

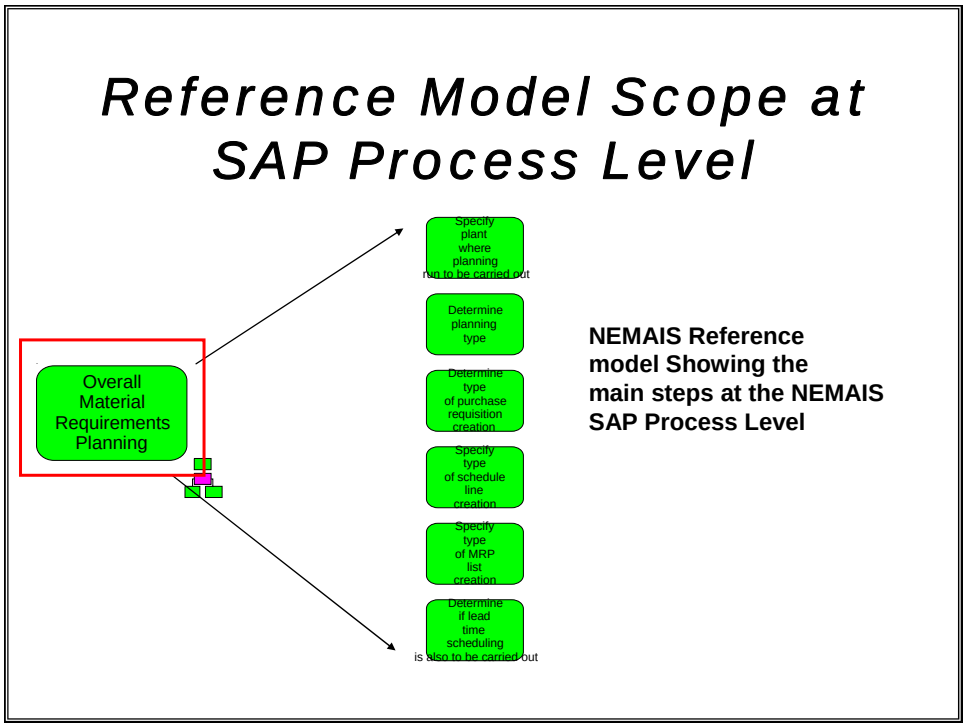

Figure 3: Decomposition from the Process Group to the Process level

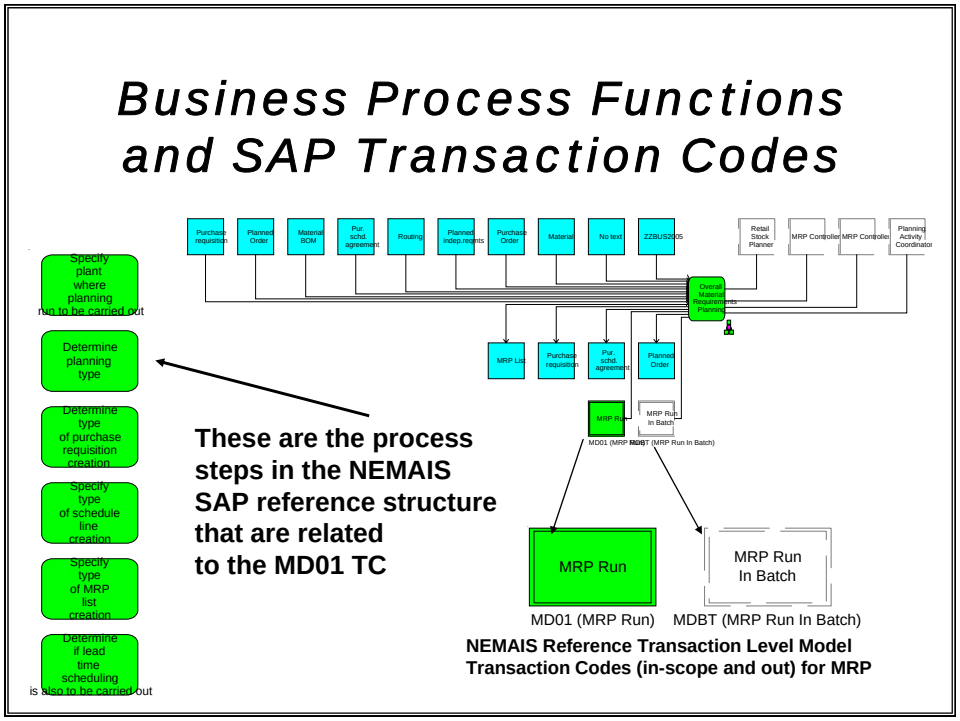

Figure 4: FAD for Overall Material Requirements Planning

In Figure 4, the SAP transaction code that is allocated to the function Overall Material Requirements Planning is "MRP Run." The allocated blue boxes define the master data that is required to configure the associated transaction.

The FAD can be used to document and manage other critical aspects of an SAP implementation project. For example, Figure 5 shows how organizational objects may be allocated to facilitate role mapping for role-based security.

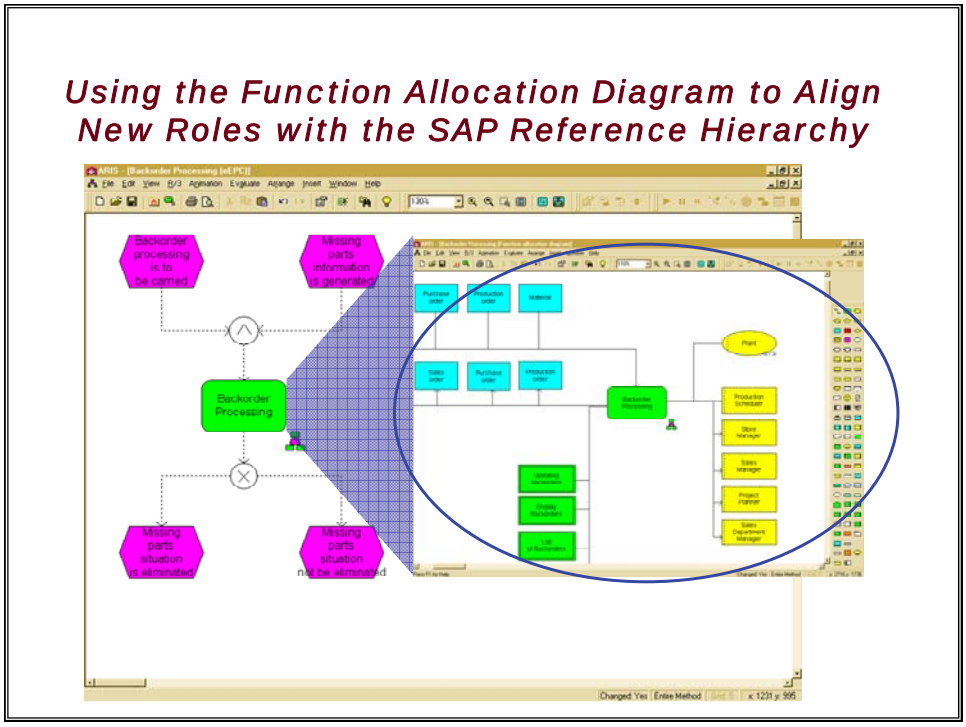

Figure 5: Using FADs to manage SAP security roles

Figure 5 is interesting because it shows that it is impossible to separate the management of data, SAP transactions, and organizational objects from business process. They are completely linked through the SAP hierarchy and the must be managed in a single architecture repository.

Conclusions

This technical note demonstrates how organization, data, and business process are related in an SAP solution. Data, transactions, and organizational objects are allocated to the SAP functional hierarchy to be managed as a single logical "scope package," representing a core component of an SAP Business Blueprint.