PDM and ERP in Common Mode

Seamlessly Connecting Engineering with Production and Logistics

It cannot be emphasised often enough that a frictionless synchronisation between product development and production & logistics is today of fundamental importance for the lifecycle of a product. For example, a developer wants to be able to view the current inventories when selecting a purchase part and long-running transactions must be made known within the ERP system at an early stage of maturation. In addition, project data also has to be on hand in the ERP for the purposes of cost control. The integration of SAP ERP in the CIM DATABASE creates the close link here. The SAP certified „CIM DATABASE Gateway for SAP“ synchronises the technical and commercial world, creates process security and enables the implementation of simpler and faster cross-area processes.
Around 100 Functions for Data Synchronisation

For the exchange of PDM data, CIM DATABASE offers around 100 functions that exhibit transaction character. In addition, SAP validity checks, such as material dependent units of measurement, are applied to the transferred data. The central points of the certified „CIM DATABASE Gateway“ are materials management, parts list synchronisation, document management and change management. The control of additional SAP modules is also possible, for example, project management, maintenance and accounting.

Materials Management

The certified CIM DATABASE Gateway supports the automatic creation of material masters including supplying SAP ERP with all basic data such as designation and units of measurement. As needed, a so-called default assignment can be run through the PDM system, in which a later addition or change to the attribute assignment can always be made.

In the context of a CIM DATABASE release, further views (including plant specific ones) are automatically provided. In addition to an initial data creation, it is also possible to make changes to the material master data. In this case, changes in the CIM DATABASE – such as changes to the material or the designation – are automatically revised in the SAP system.

Copying or versioning of part masters in the CIM DATABASE leads automatically to an initial data creation in the ERP system (new creation with template). It is possible to display material data directly in the CIM DATABASE through online access of the material master data, such as the inventory. In addition, the mirroring of ERP data to the CIM DATABASE can be configured, and there are many ways in which to define the materials that are to be mirrored. As necessary, characteristic table or CT values (classifications and characteristic evaluations) can be transferred, whereby the installation of the complete CT structure in the CIM DATABASE is also possible.

BOM Synchronisation

The CIM DATABASE Gateway for SAP supports the creation, changing and deleting of CIM DATABASE parts lists in SAP ERP Group-wide or plant-wide specific initial data creations count here as well, for example as design parts lists. In addition to the positions that are automatically exported, additional text and document positions can also be manually managed in the CIM DATABASE.

The creation, modification and querying of variant and multiple parts lists is also possible. In such cases, all of the SAP ERP validity checks can be applied. Changes to an already synchronised parts list can be prevented by a corresponding configuration of the rights system. Should it become necessary to make changes, a change report can be generated when adding, editing or deleting parts list items.

A close link with the version management of the CIM DATABASE was created for the replacement of parts list items with new versions. The SAP ERP input/output controls can also be used in this case.

Document Management

Through the synchronisation of document master data and the document itself, the CIM DATABASE Gateway makes the results of product development directly available to the ERP workstation. Examples include drawings, neutral format 3D models as well as selected project documents.

A direct link between the CIM DATABASE and the SAP version management has also been implemented: with the creation or
release of a new version, the corresponding document version is automatically created in SAP ERP. In addition, the storage of several secondary representations for one document has also been made possible. Examples include TIFF and PDF for CAD drawings.

For the database storage of documents there are two options: documents can either be transferred to a SAP storage system (for example SAP vault) or they can remain in the PDM vault and be directly accessed out of SAP. Document master records as well as other objects, such as material masters or equipment, can be assigned here as well.

**Engineering Change Management**

The change management of the CIM DATABASE Gateway for SAP maps the Engineering Change Management from the CIM DATABASE onto the SAP change management system. What is central here is the modification of documents, materials, and parts lists. The basis of the synchronised change management system are the common master change records, which in general form the context for extensive changes to an assembly or to a component with multiple installations. Here the CIM DATABASE serves the SAP effectivity control.

**Top: Seamless availability of complementary views: an ERP dialogue is embedded in the PDM interface. Bottom: PDM and ERP grow together: ERP data that live according to their up-to-dateness can be accessed in real time in a dialogue from the PDM system.**

**AT A GLANCE**

Modules of the certified CIM DATABASE Gateway for SAP:

- **Materials Management**
  Automatic creation and modification of material masters, online access to material master data and display in CIM DATABASE masks, mirroring of material master data optionally configurable, transfer of CT values

- **BOM Synchronisation**
  Creation, modification and deletion of design parts lists in ERP, optional generation of change reports when editing parts list items, rights management when changing already synchronised parts lists, closely linked to the version management of CIM DATABASE

- **Document Management**
  Direct link to the version management of CIM DATABASE, storage of several secondary representations

- **Engineering Change Management**
  Mapping of the indexing concept from CIM DATABASE onto the master change records of SAP ERP, time of the transfer of the new index configurable

- **Inbuilt Flexibility**
  Configurable synchronisation with other SAP application domains like project management, maintenance and accounting
State of the Art Technology

CIM DATABASE forms the central repository for product development. Processes are consistently supported together with the capability to connect with other information systems and authoring tools.

In addition, numerous maintained standard interfaces to CAD and ERP systems offer a high investment security. Standard interfaces to leading ERP systems, such as to SAP ERP, support fast usage, and the highest maintainability and reliability.

This increases the quality because data is consistent and reliable, reduces turnaround times as a result of shorter turnaround cycles and the avoidance of duplicate entries and also reduces costs, for example by reducing late changes in the context of concurrent engineering.

Three central technology modules form the basis for synchronisation with ERP systems as well as data and processing integration:

- Shared Object Management from CIM DATABASE ensures rule and event driven synchronisation of objects between CIM DATABASE and other information systems. It ensures the consistency of the data, also across complex business processes.
- The ERP Talk Service Library establishes object orientated communication between CIM DATABASE and other systems.
- The XML-Gateway for CIM DATABASE communicates with other systems using the lingua franca of the IT world and makes possible the use of XML-middleware solutions such as Microsoft BizTalk Server.

The technology modules make it possible to fulfil numerous needs, beginning with simple data exchange of items and parts lists to the implementation of demanding scenarios with direct dialogue access to the ERP system, support for several plants or clients, as well as the ability to simultaneously take care of different ERP systems.