Integration with Higher-level Systems

In many firms of the process industry, the individual plants work largely independently of one another and use requirements stemming from quite different MRP systems. They could be coming from SAP systems (R/2 or R/3) or from external systems fprovided by other software vendors. Seen from the perspective of the R/3 PP-PI component, this data can be interpreted as requirements to be processed by a local R/3 PP-PI System and then confirmed to the higher-level MRP system.

Basically, the above systems can work as horizontally or vertically linked systems, or else they can be integrated within one system.

In the case of integrated systems, the rough-cut MRP level and the lower-level detailed planning system (PP-PI) are both in the R/3 System.
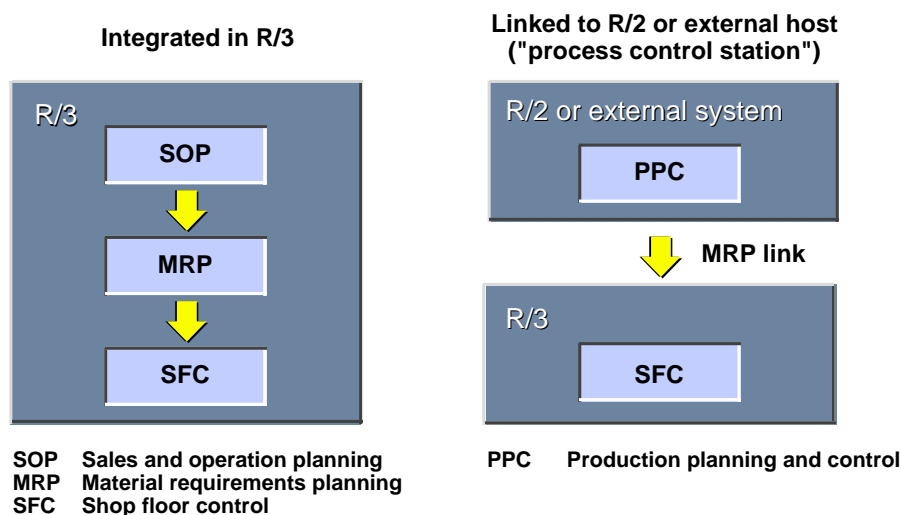
Integrated in R/3

Linked to R/2 or external host ("process control station")

R/3		R/2 or external system
SOP		**PPC**
↓		**MRP link**
MRP		R/3
↓		**SFC**
SFC		

SOP   Sales and operation planning   PPC   Production planning and control
MRP   Material requirements planning
SFC   Shop floor control

Fig. 10-1: Possibilities of implementing PP-PI in integrated and linked systems

Linked Systems

In the case of linked systems, there are two different types:

❑ In the *vertically linked system,* the MRP system is the higher-level system and the detailed planning system (PP-PI) is the lower-level system. Here we are always dealing with a hierarchical linking of the systems, in which the lower-level system is dependent on the specifications made by the higher-level system.

❑ In the *horizontally linked system,* the rough-cut and detailed planning systems are networked. This means that the MRP level and the PP-PI levels are of equal importance, and the PP-PI level is not subordinate to the MRP level.

When systems are linked, requirements are placed on the integration functionality above and beyond the limitations of differing hardware types and software vendors. If one classifies the existing integration possibilities, there are three basic types of integration:

❑ R/3-R/3 linked systems

Here we are dealing with a link of independent R/3 systems running on their own data bases. These systems can be linked horizontally as well as vertically. This type of integration is not supported for Release 3.0.

❑ R/2-R/3 linked systems

This is a link between an R/2 system and several different R/3 systems. Integration only exists vertically and is supported for Release 3.0.

Technically, this integration is carried out via CPI-C/LU 6.2.

❑ External systems linked with the R/3 System

This refers to a link between an external host system and the R/3 System. The integration can also be only carried out vertically and is supported for Release 3.0.

Technically, this integration is carried out via file transfer. Only tools for the transfer of data to and from the R/3 System are provided.

Vertically Linked Systems   For vertically linked systems, Release 3.0 will provide the possibility of integrating the MRP level of any higher-level system with the detailed planning system of PP-PI.

Depending on the type of data needed, the requirements can be classified as follows:

❑ Transfer of material master data

The transfer of material master data is carried out within the migration project (file transfer).

❑   Transfer of material requirements

If the higher-level system is an R/2 system, the requirements from the production order, with quantities and dates, are transferred to the R/3 System.

If the higher-level system is an external host, the requirements have to be converted to a UNIX file. From here, they are read into the PP-PI component.

In both cases, the requirements are read into the list of external requirements of the PP-PI component.

❑   Transfer of inventory records

The transfer of inventory records is carried out via the batch input interface for goods receipts.

❑   Allocation of requirements to process orders

The requirements coming from an MRP system can be allocated to different process orders in an **n:m** fashion. These can then be processed in the usual way.

❑   Confirmation of material consumption for the process order

If the consumption of materials is to be confirmed, it is possible to read this data into a UNIX file after the order has been processed, in order to make the data available to other systems.

❑   Confirmation of processed material requirements (goods receipt)

From the list of processed material requirements, confirmations are transferred to the R/2 System in the form of order confirmations.

For the horizontal linking of systems, at present no cross-system linking logic is available.

Horizontally Linked Systems

For the planning of your production runs, you can use various systems in different combinations. You can link up to external systems, such as an R/2 System. You can also import data from higher-level systems, such as MRP data, or confirmation data, for example.

What kind of planning scenarios are supported by PP-PI?

You can carry out the planning of your production runs using data from higher-level or external systems (vertical) or using horizontally linked systems (for example, many plants on one level, but within *one* R/3 System).