



## FINITE CAPACITY PLANNING

The company's objectives are more and more ambitious as to both products and service.

It is necessary to define the delivery dates to customers in a reliable way and to verify them regularly.

The planning systems can support companies in these challenges in an efficient and timely way.



### Global Planning System

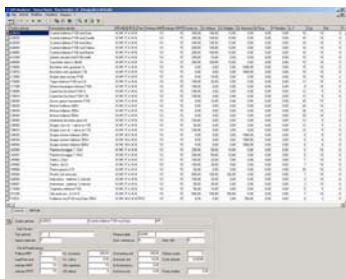
**It is** a system that, starting from the MRP II methodologies, makes use of innovating technics to relocate in time (ahead planning) the critical events and all other events which are tied to them.

**It can** underline both objectives which can not be met in time and the delay itself, emphasizing all events which take part in creating the problem.

**It has** been conceived in order to integrate itself with the all managements systems from which it receives the necessary data.

**It is** available in several versions to work on different platforms.

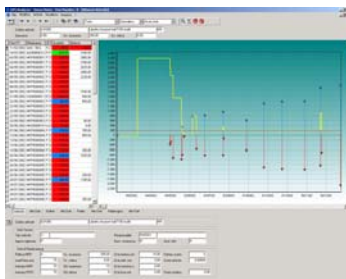
**It has** been carried out using technics that make the elaborations very quick, consequently allowing their frequent use.



### MPS - Master Production Schedule

Starting from the sales forecasts, it allows the creation of a production plan which is compatible with the availability of resources and materials. It operates on several time periods whose length is scheduled by parameters. Two detail levels are possible - by product family and by item. An interface with the trading environment is available in order to compare the existing plans with the order range and automatically proceed from aggregation plans to article plans. The main available functions are:

- creation and management of the sales forecasts
- creation and management of the production aggregation plan (by family)
- creation and management of the production detailed plan (by item)
- link with the sales order range



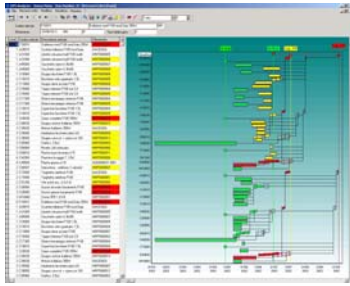
### MRP - Material Requirements Planning

It is the material planning methodology which is the most widely used by most world companies. The software has been designed to integrate itself easily with any management system from which it can receive the data (basic lists, working cycles, stocks, production and existing purchases).

The module available in **GPS** complies with the international standards, moreover it offers the following opportunities:

- real and simulated elaboration, with an unlimited number of versions
- planning by order or by warehouse according to the management parameters from both sides
- opportunity to calculate the production lead times starting from the working cycle or from the item's creation data
- management of whatsoever number of factory calendars linked to production resources
- dating of dependent requirements with the starting date of the cycle phase they are addressed to
- gradual management of all technical changes
- susceptibility to lot homogeneity links of components





### PRM – Pegging Relation Management

The module uses a reticulated planning technique which allows to exceed the **MRP** constitutional limits:

- lack of "manoeuvre margins" (the dates of beginning and end are strictly calculated "at the latest time")
- lack of reaction mechanisms which, in case of critical points on materials or resources, allow to determine effects beforehand. Using the events which are already present in the **MRP** system and redelivering stocks and orders to the requirements with the highest priority the system can:
- determine the links among events
- calculate, for each order, the "earliest" dates
- identify the critical routes
- relocate the critical events "ahead" in the time pattern of the critical events

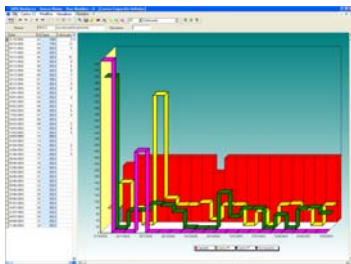
The comparison between the "latest" dates proposed by **MRP** and the "earliest" dates proposed by **PRM**, reveals three kinds of situation:

- operations for which the two dates are the same; there are no deadlines for their carrying out
- operations for which the latest dates are bigger than the earliest ones: the difference represents the tolerance (margin) accepted in the carrying out
- operations for which the latest dates are prior to the earliest ones; in this case there are delays.

Among the available functions, the most remarkable are:

- definition of the realistic achievement dates of the objectives made of independent needs.
- support to the urging (the system emphasizes what is necessary and what it is addressed to)
- automatic propositions of the production launches on the grounds of the availability of components.

On the grounds of this it is clear that the **PRM** module is a necessary pre-requirement in order to carry out a correct planning of productive resources.



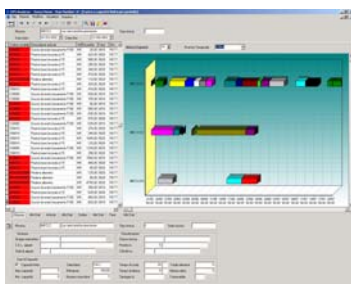
### CRP – Capacity Requirements Planning

Using the production orders which are already operative and the ones proposed by **MRP**, this module can define the loading profile of the resources, this way generating the capacity requirement plan. The **PRM** guarantees the time consistency of the events: relocating ahead the critical points allows the resource consumption forecasts to be realistic (there are neither past orders nor future orders with past pre-requirements).

The calculation is carried out supplying each order with its own working cycle; for each resource the system supplies the saturation level, in the various periods, in two versions:

- activities located at the latest
- activities located at the earliest

emphasizing, in both cases, the events involving overloading or incomplete use. It is noteworthy to underline that the "earliest" vision proposes the scene with a higher plant saturation and that the possible situations of missed usage can not be solved due to the lack of materials.



### FCP – Finite Capacity Planning

The purpose of this application is to relocate in time the productive activities taking into consideration the availability profiles of the resources involved.

For all orders a reservation is made considering the earliest time of the requested resources, which are this way addressed according to priorities.

Before sending delayed operations the system tries to divert them to possible alternatives. In case the availability is not sufficient to fulfil all the activities included in the analysis period, the least urgent are moved ahead. This chronological re-location is overturned, by implosion, on the covering of commercial requirements.

The finite capacity planning supplies some important directions:

- realistically calculated order dates at beginning and end, considering the real availability of the plants;
- highlight on delays
- evaluation of the covering dates of mid-term objectives
- interception of the "bottle necks" with the highlight of consequences on finite products