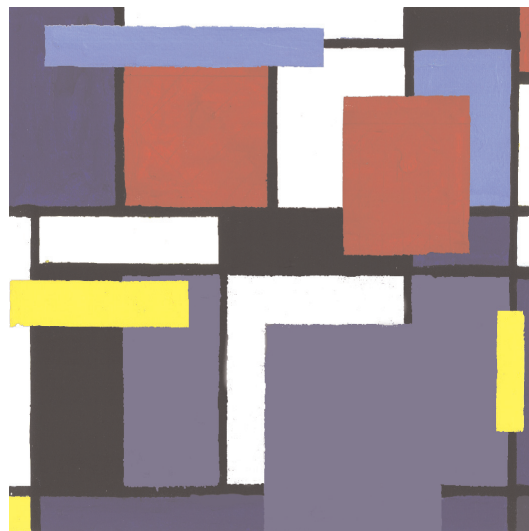


Material flow issues in
the process industry?



Fill the gaps with SIMBAX.

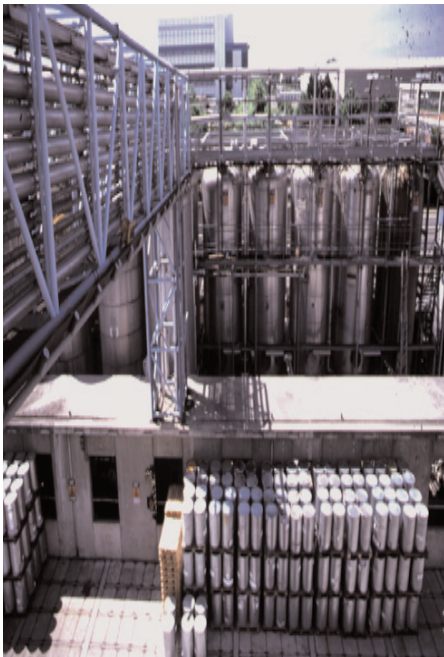
Do you want to avoid this?

- Your most expensive production device often stays idle.
- Getting the right container out of the storage place is as tricky as solving a puzzle.
- Production must be interrupted because a recycled solution is not yet available.
- Operators are not available when needed.

Obviously you want to make the most efficient use of your production equipment and resources, possibly to achieve a higher production capacity at a reduced cost.



Use SIMBAX to optimize your batch or semicontinuous processes and your multipurpose plant!



SIMBAX is a decision support tool built specifically to fulfill the needs of the process industries – chemicals, pharmaceuticals, cosmetics and nutrition – in the area of material flow simulation. The software:

- has been designed for chemists and process engineers
- uses their language in its object-oriented concepts and in its animated interface
- can be learnt in a few hours even with no simulation background.

The screen provides at any time a perfect overview of the model, enabling you to react accordingly or to draw provisional conclusions already in an early phase.

Whichever kind of study you perform...

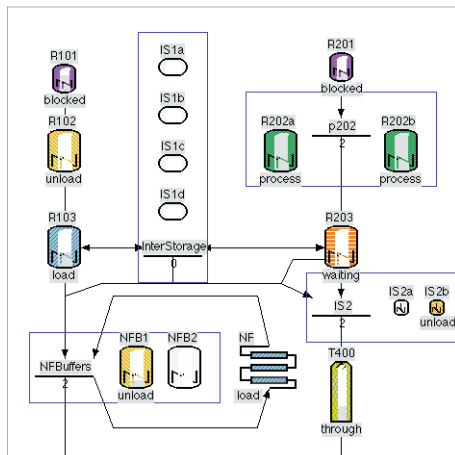
- design of complex batch and semicontinuous processes
- reengineering of existing processes and material flows
- optimization of a multipurpose plant
- design of a plant extension
- improvement of operational production planning policies

... the key issues are **debottlenecking** and **production capacity analysis**. SIMBAX allows you:

- to quickly compare a variety of alternative scenarios in order to eliminate bottlenecks
- to find a solution maximizing the productive utilization of the equipment and resources.

Unlike more general simulation tools, SIMBAX, thanks to its process-industry specific nature and to its comprehensive graphical user interface, does not turn modeling into headaches. Instead, it leaves you time to interpret the results.

Furthermore, SIMBAX best complements thermodynamic process simulation since it enables you to also optimize the logistic issues. Indeed, these are often as critical as the physicochemical parameters.



Put the reality into the computer

Start with your factory...

Take a plan of your existing or planned factory and just draw it in a SIMBAX window. Define each device graphically by choosing among a palette of chemical engineering standard icons. No matter whether it is a reactor, a filter, a mill, a spray dryer, etc., you will almost always find the right symbol and if not, you may draw it yourself. Then enter the device characteristics, for instance its volume capacity. You can of course also define groups of equivalent devices.

Are you concerned about a possible lack of storage place or of manpower? Just enter these elements in the same way. Finally, draw connections between the factory elements to specify which material transfers are feasible.

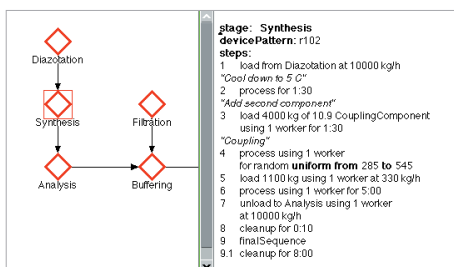
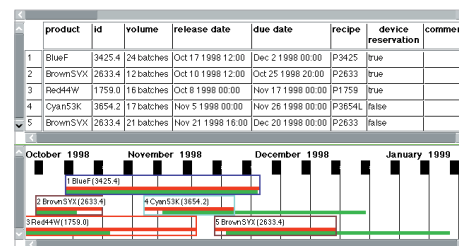
... continue with your processes...

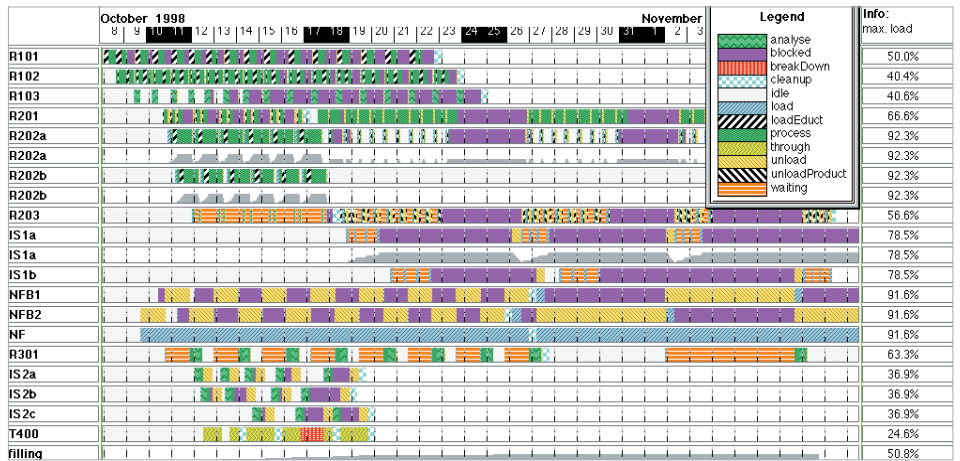
Model a process as defined by the development department or just as described for production purposes. Enter graphically each stage and define its elementary operations as precisely as needed, using the fully integrated interface to Microsoft Excel if you wish. SIMBAX offers you the possibility of building easily very realistic models of practical situations such as:

- semicontinuous filtering
- continuous buffer tank management
- alternative routings
- parallel processing
- operation synchronization
- batch grouping and batch splitting
- device cleaning and set-up at production changes
- material and container handling.

... complete the model with your production plan

Consider a time period and define the production campaigns as they appear on the planning board of your multipurpose plant. The specifications of each order include the product identification, the quantity required, the production process to be used, the campaign starting date and the due date. After the simulation, the corresponding graphical representation will help you to detect due dates that could not be met and to evaluate the resulting delays.

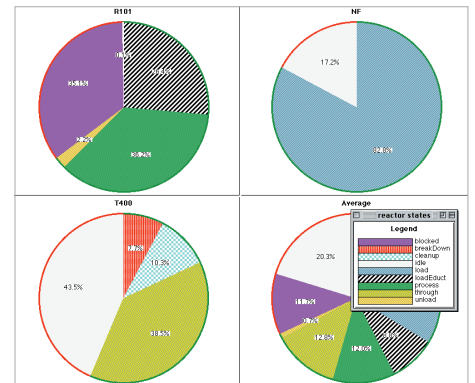
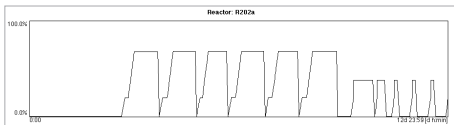




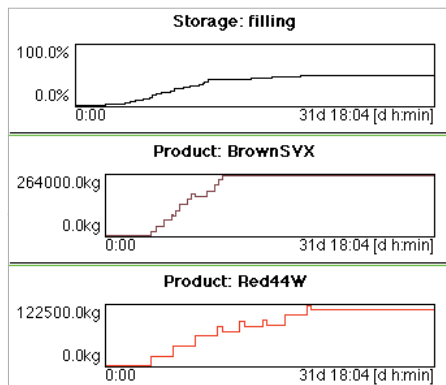
Understand the situation

Use the animated color flow chart to analyze the utilization of your equipment and resources, to **identify bottlenecks** and to **evaluate cycle times**. The fully detailed simulation results also inform you about:

- the tank level variations
- the manpower workload
- the raw material consumption
- the inventory level of intermediates
- the production quantity achieved.



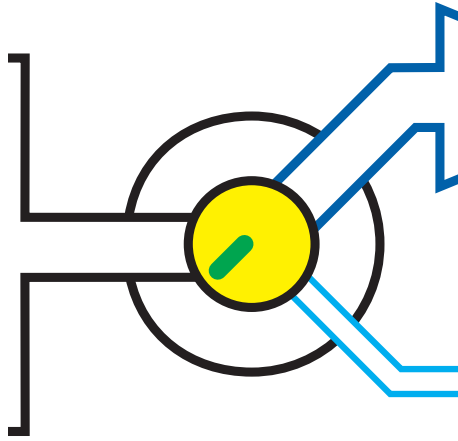
export all these results for further analysis or presentation purposes.



Elaborate the solution

Now knowing what causes the difficulties, identify improvement opportunities and design promising alternative scenarios. In a few minutes, change your factory, modify your processes or update your production plan

and... run a further simulation! Then compare the results with the previous ones, perform further simulation runs if needed, and so on. **Obtain easily your best solution.**



A recent application to a dyestuff multipurpose batch plant

A dyestuff factory producing both liquid and solid forms faced the following situation:

- two production lines were used for product synthesis
- the device performing the nanofiltration of all liquid products had become one of the bottlenecks of the production facility, due to long processing times and an increasing demand for liquid forms.

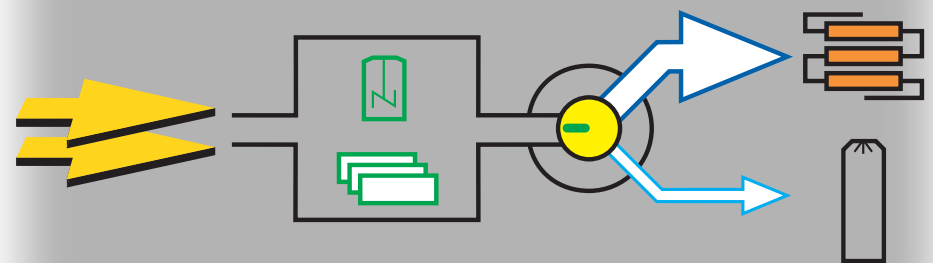
The plant management used SIMBAX to design productivity improvement scenarios for the liquid dyestuffs and to evaluate the feasibility of fully utilizing the capacity of the nanofiltration equipment.

The study revealed that a tremendous reduction of waiting and idle times on the synthesis lines could be achieved through product-specific modifications of the material flow, such

as:

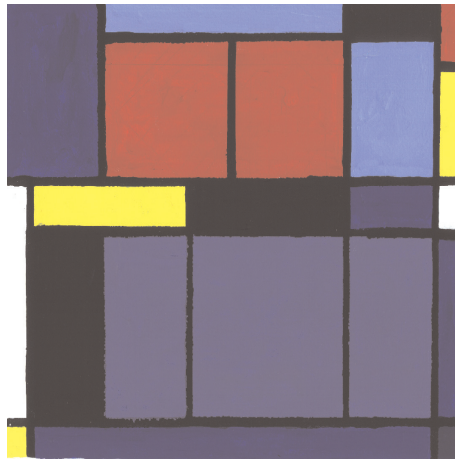
- the dynamic assignment of each synthesized batch to liquid or solid postprocessing
- the use of intermediate storage between synthesis and final formulation.

These logistic improvements resulted in a 30% increase of the production capacity of the whole plant.



SIMBAX has also been used to:

- design a new plant for an optical brightener
- integrate reverse osmosis in a paper brightener production facility
- debottleneck the production process of a light stabilizer
- optimize the material flow in a multipurpose pigment plant
- optimize a pharmaceutical formulation plant.



Thanks to SIMBAX

your material flow will be

in order.



Take advantage of our services

- A two-day **introductory course** – available in English, German or French – makes getting started on SIMBAX “child’s play”.
- A follow-up **workshop** offers you the support of a SIMBAX specialist while you model practical cases of your own. In this way, you extend your knowledge of SIMBAX in those areas that are most relevant to your needs.
- **Test licenses** enable you to perform a detailed software evaluation before taking a definitive decision about the use of SIMBAX.
- Our extended **hot line services** provide you with immediate support if some specific SIMBAX issue troubles you.
- Additionally, you can rely on AICOS Technologies experts and on their long-term experience gathered during many practical projects for any **consulting services** in the field of production logistics. Our consultants will always help you to reach your operational goals and to turn your problems into improvement opportunities.

Technical issues

Hardware requirements

- A Pentium PC running under Windows NT, 2000 or XP.
- At least 256 MB RAM.
- A hard disk with at least 500 MB free capacity.

Available versions

- Professional single-user version.
- Professional server version.

For further information

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