

Sim-Serv Launches First Three Working Groups

The Sim-Serv Working Groups will bring together industry and researchers to discuss and advance important initiatives concerning development and utilisation of simulation techniques.

The first three groups will tackle themes including:

- **Modular Design of Simulation Tools**
- **Open Digital Factory**
- **Simulation Accuracy for Plastics and Rubber Production**

The outline descriptions of the topics are below.

Sim-Serv will support Working Group participation by refunding the travelling costs. To get further information and to apply for membership please contact the people nominated at the end of the descriptions below.

Modular Design of Simulation Tools

This Group answers the question: 'is it possible to have a common modular architecture and will it be useful for a sufficiently broad range of simulation tools?'

The Sim-Serv Suppliers Group contains a number of small suppliers that need to make their development work as efficient as possible. Wherever possible they should focus on the distinctive features of their tools and services and not spend a lot of time porting their tool from one platform to another; developing standard functions which are more or less common to all simulation tools.

The Group also contains a number of academic institutes that produce prototypes of simulation tools and have experience in using different simulation packages. Most self-developed tools are short-lived, not because of bad quality, but because they do not fit together with any commercial tools of suppliers. Also most of these tools focus on one aspect only (e.g. user interface, statistical evaluation) and are poor with others. It would be extremely helpful for the academic developers if they could use existing modules that are essential for their research. And it might be easier for commercial suppliers to pick up and integrate such prototype modules into their toolboxes if there were an agreed modular structure of simulation tools. However, economic and competitive reasons may affect the viability of this approach. The benefits must be evaluated, keeping in mind the number of players.

So to answer the question, it will be important to analyse the latest technology and the pros and cons for applying it.

The Group will analyse technical and economic opportunities for a common, generally applied modular architecture of simulation software. In case sufficient benefit in such an approach is found, then the group will propose further actions.

The main goals of the Group are:

- to understand if joint development/common modules are technically and economically attractive for commercial developers
- to check if modular design makes it easier for commercial suppliers to pick up and integrate prototypes (modules of simulation tools) developed in academic institutes.

To achieve the goals, the following steps will be undertaken:

- survey state of the art technology and identify good practice in the area
- assess potential benefits of modular design (for commercial partners, academia, users)
- evaluate economic and competitive implications
- propose actions for future work

The Working Group may help suppliers to develop better tools with less effort. It may lead to a number of joint development activities and RTD projects.

For further information and to apply for membership in the group, please contact:

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Open Digital Factory

The objective of the Sim-Serv working group "Open Digital Factory" is to link simulation application and advanced scheduling and planning applications.

In the last few years simulation technology has made its arrival in the planning and optimisation process of production or distribution systems. But most of the time a current APS is not considered in this step. Therefore you find only an optimum for the material flow based on non-optimised data.

The reasons are the complexity and the cost for the implementation of the APS algorithms. This working group will define common interfaces and processes in every business, which will form a basis for the linked application of simulation and APS. By this, it is possible to reduce the cost of "global view" planning processes. Especially for small and medium enterprises (SME) such a solution will be justified by the high potential return on investment (ROI).

By using the potential of linked application of Simulation and APS, the small and medium enterprises will be able to operate under optimised conditions including well working material flow and a cost saving planning and scheduling operation. By a previous proofed APS system the SME's can save costs, time and money for set-up and maintenance. With a network of suppliers and customers, production and delivery on time is a criterion which cannot be measured by money. Simulation costs are greatly reduced too because of the use of predefined algorithms of the APS system directly in the simulation. The need for programming expensive look-ahead strategies is lowered to zero

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Simulation Accuracy for Plastics and Rubber Production

The Sim-Plast working group will consider and plan an overall simulation based chain. From product design through to reliable, high-performance production; all steps will be planned and optimised at the earliest possible stage to guarantee optimal production in the fastest time possible.

The virtual environment enables the use of new technologies in the development phase, tools manufacturing, actual production, statistical quality control and artificial visual inspection. Developing simulation software versions that will also run through the Internet will offer smaller and medium-sized companies an opportunity to use these new sophisticated methods without big investments, enabling them to optimise their production, too. This, however, requires the training of several technical support people in all regions of Europe, so they can give support to smaller companies to help them benefit from these new technologies.

If such an overall simulation based chain is attained, it will be possible to achieve 30% savings in the production costs and 50% savings in the time-to-market delay. The total savings of European companies would amount to about EUR 40 billion and would increase their market share in telecommunication, medical devices and vehicle industries by about 20%.

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