

WG #2 ODF

Working Group General Information	
Working Group Title	Open Digital Factory
Working Group Short Name	ODF
Short Summary of the Working Group Topic	
The topic of the working group is a linked application of simulation (studies and tools) and advanced planning and scheduling (APS) in small and medium enterprises (SME's).	
Short Summary of the Working Group Goals	
The working group will combine the material and work flow through the system (production site/network of several enterprises). By this global view to the system the user will be able to optimise its material flow and the schedule algorithm of its APS and reduce programming efforts in the simulation.	

The Working Group Description

Short description of the Working Group topic
The working group will work at combined applications of simulation and advanced planning and scheduling systems. By this topic it is necessary to define common data interfaces and process for every kind of business which will be the basis of future optimisation. The working group wants to concentrate upon small and medium enterprises because they have already an APS system, but the use of simulation tools for their planning and design tasks is not common.
Background. Reasons why this Working Group is needed.
The reasons for work at this topic base on the typical way to design a new production system or to redesign a current one. This way includes different steps. The first one is a analysis of the current data and situation. By using this data and its extrapolation in the second step a new design is found. The layout is proofed by a simulation model. Most of the time a current APS is not considered in the simulation because the implementation of the algorithm is too complex and too time consuming. So the lag of this design process is the non global view at production. They find only an optimum for the material flow by the data analysis and material flow by the simulation. On the other hand they optimise the planning algorithm online during the production without considering the influences to the material flow.
Working Group goals.
The working group wants to define common interfaces and processes in every business which will be basis for the linked application of simulation and APS. Common processes make it possible to realise less cost expensive solution for small and medium enterprises which are justified by the return of investment (ROI). The working group will identify necessary processes for the best optimisation of the system. By this the user will have the possibility to find optimum of its system by changing the physical/logical material flow and planning algorithm in interdependence. This optimum will already found during the planning period. So the APS system becomes more than tool for the daily work. A typical question is: Do you need a new planning algorithm if you have a new logistic system or you have higher capacities at the different processes? Or in the other way round!
The expected impact of the working group.
By using the potential of linked application of Simulation and APS the small and medium enterprises will be able to operate under optimised condition. This optimisation includes a well working material flow and a cost saving planning and scheduling operation. By a well doing APS system the SME's can save costs, time and money for set ups and maintenance. As criteria which can not be measured by money is a production and delivery on time in environment of a network of suppliers and customers. 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