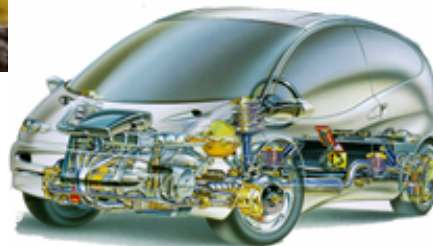


Making WITNESS a Standard for Success



Comau is one of the world's leading suppliers of industrial automation systems to the automotive industry. A global organisation with UK headquarters in Luton, Bedfordshire, Comau offers its customers a complete service from product development and system integration, through to optimisation of existing systems and maintenance services. A large part of its work consists of the manufacture of body assembly and welding systems for automotive manufacturers such as Jaguar and Ford. The WITNESS simulation tool is central to many of their projects.



Early in the development of any new project, Comau address the issue of reliability. Comau, like many of its clients, operate a lean manufacturing environment which is underpinned by system reliability. Yet when new production systems are implemented, reliability can be poor, downtime a common occurrence, and buffers and inventory, the antithesis of lean production, a necessary evil to ensure continuous production. Comau recognised that simulation could help them lessen the impact of reliability issues. Dave Whetton, Engineering Quality Manager "The cost of launch can be high when reliability is still in its infancy. This is totally unacceptable in a lean environment so management of the reliability issue through simulation is key even at the proposal stage of a new manufacturing system."

"WITNESS is undoubtedly one of the key tools that enable us to provide our clients with first class manufacturing solutions, time after time."

Dave Whetton
Engineering Quality Manager
Comau Systems

Comau has adopted WITNESS as a company-wide standard to ensure that every new manufacturing system represents the best solution for the client organisation, providing

Company	● Comau Systems
Industry	● Automotive Supplier
Application	● Increase Production
Benefit	● Customer Buy-in

maximum throughput at minimum risk. WITNESS is used to refine the new system from the start of the proposal process through to the system's launch. In order to facilitate its use, Comau has designed a standard front end to WITNESS using Excel and a standard start-up model which can be tailored to any project.

Whetton again: "In order to make the model as straightforward and as accurate as possible, it is crucial that anyone involved in the proposal process can help to build the simulation model even if they have no prior experience of simulation systems. As a result, key modelling data such as downtimes, cycle times and changeover information may be input into a model by a simulation specialist, our process engineers or indeed, the client. Crucially, this inclusive approach means that everyone buys into the modelling process and hence the new system design, from the very start."

WITNESS is equally applicable when Comau are evaluating existing manufacturing systems to identify how improvements can be made. A model will be built of the client's plant using as much actual data as possible, again using a standard start-up model and an Excel interface. Comau then work through a thorough optimisation process. Starting with the identification of production targets, simulation is used to help identify bottlenecks within the system and then provide options to increase output. There then follows an iterative process of discussion between the client and the Comau team as they work to brainstorm different options, prove and grade them, compare them with the results of existing projects, and usually, initiate new "what-if?" scenarios for WITNESS. The end result is a solution which has been fully evaluated and in which both Comau and the client have complete confidence.

Comau has had much success with this approach. Recently the company was asked to improve throughput for a major automotive manufacturer. Comau simulated the throughput of one third of the factory

and discovered that actual output was significantly lower than the figure produced in the simulated model. By taking actual data from the plant monitoring system they were able to work out that the shortfall exactly corresponded to output lost as a result of blockages in the system.

Says Whetton "the visual nature of WITNESS is key to the acceptance of the results it produces. Once problems have been identified we can use WITNESS to show the client and our team on-site why throughput is down. Once we have achieved consensus on the source of the problem we can begin to experiment with different solutions to increase throughput."

In this particular case, WITNESS showed that output could be increased by decreasing individual station cycle times, increasing the technical availability of stations and increasing the number of carriers on the transfer system between stations. The potential improvement was shown to be a significant 14.8% increase in output per shift. Once again Comau used WITNESS to prove to the client that these improvements were achievable and would bring the benefits they anticipated. Indeed, as is typically the case, this client accepted the recommendations and has now achieved the target 14.8% improvement in shift output.

Simulation is now well established as one of the skills in Comau's portfolio that help to give the company a competitive edge. But Comau is never complacent and is constantly looking to refine their use of simulation even further.

Whetton "Having already achieved great benefits through the use of simulation we now intend to take it one step further. By automatically creating links between WITNESS, plant monitoring and process control systems, we will be able to refine the process further, achieving even more efficiency gains. WITNESS is undoubtedly one of the key tools that enable us to provide our clients with first class manufacturing solutions, time after time."

