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Ready for reality; virtual commissioning at Volvo cars

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Volvo Cars, a long term user of advanced tools for virtual manufacturing engineering and Robotic off-line programming has now started to investigate the implementation of Virtual Commissioning (VC). This is done as a part of a national research project VIRTCOM (Virtual preparation and Commissioning of Production Systems incl. PLC logic), a project supported by Vinnova/FFI within sustainable production technology. Volvo Cars has set the aggressive goal to cut project lead time in half before 2020, and VC will play an important role by allowing less time spent on shop floor and enabling full verification of station logic without physical installations or production parts. Volvo believes that many of the issues and risks that normally come with the commissioning of BiW-lines can be reduced and in many cases eliminated by using Virtual Commissioning.

Areas of special importance to Volvo:

- Possibility to test and debug station logic before installation
- Eliminate the need for physical prototypes and Plant Pilot Production
- The virtual result includes BOTH robotic and PLC programs ready for download!
- Shorten the time spent on-site i.e. faster production ramp-up and shorter time-to-market
- More accurate cycle time predictions

Of course, a successful implementation of Virtual Commissioning is a much bigger project than simply introducing the technology. Most of the challenges come with aligning work methods, standards and specifications to allow for efficient workflows. The presentation aims at giving an overview of the project and account for some of the pre-study results around the implementation of Virtual Commissioning.

Biography

Andreas Jonsson received his MSc degree in Mechanical Engineering from Chalmers University of Technology, Gothenburg, Sweden, in 2003. He is a method developer and expert on Virtual Manufacturing at Volvo Car Corporation, and the application owner for Process Simulate – the software used by Volvo Cars for all process simulation. His main focus during the last few years has been on Virtual Commissioning for BiW (Body in White) using Process Simulate, defining how this technology should be implemented in order to fully take advantage of all the benefits.

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