

D1.2 Industrial Requirements – Executive Summary

This deliverable describes the industrial requirements gathered in the project during the first six project months. The requirements include technical and business related requirements by the three industrial pilot partners (Prima Power, Continental, UTC) as well as user requirements based on user observations and interviews at the pilot sites with totally 40 workers. The requirements are complemented with safety and ethical requirements.

Worker measuring and modelling raises many doubts within workers and with factory management. That is why it is important to make early demonstrators of our ideas to co-design them further and to find ethically sustainable ways for worker modelling. *Adaptation* needs were identified in training as well as in user interfaces, in machine behaviour and in production planning in manufacturing environments.

In the pilot sites, some solutions were already in use for informal *knowledge sharing* but the need for more developed systems was identified. An easily accessible platform for knowledge sharing could evolve to a place where good work practices and ways to solve problems are shared within the work community but also with work machine providers and other stakeholders.

The virtual factory would facilitate *training* problem solving skills in realistic problem situations. As each customer site is different, it is important to customize the training environment according to the customer. Virtual factory based training can be utilised well before the actual production line is in use and the training environment can be updated with actual problem situations and suggested solutions as they are faced. Another approach to training was identified as well: plug and learn concept where workers can themselves produce video-based qualification modules to be shared with peers. Module-based training approach would facilitate learning at the worker's own pace.

Participatory design was expected to improve the commitment of workers and utilise the expertise of them to achieve better results. The workers would like to be more involved in the work place and production design, and they thought that participation would decrease the problems that they face in their work. However, there were also doubts whether they really could have possibilities to impact on their work. It will be important to identify the potential areas where the participatory design could be applied.

The work in Factory2Fit continues by defining application concepts for each of the development areas: worker modelling and system adaptation, knowledge sharing, training as well as participatory design of manufacturing operations. Deliverable 1.3 describes the concepts as well as potential industrial use cases for them.

