



Undergraduate Project 2017-2018

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Project title: Data Acquisition and Management at High Speed Shoe Factory

Background

Manufacturing is a key part of the economy. To remain competitive or become even more so, automation that supports innovation is also essential for the manufacturing sector. Advanced ICT supported manufacturing is currently gaining a lot of traction with initiatives such as Industry 4.0 in Germany, Factory of the Future in Italy, the High Value Manufacturing Catapult the UK etc. Part of this development is advanced coordination of manufacturing allowing for increased flexibility and reduced costs.

EU H2020 “vF Interoperation supporting buSiness innovaTion” (FIRST, <https://www.h2020first.eu/first/bin/view/Main/>) aims to provide new technology and methodologies to describe manufacturing assets; to compose and integrate existing services into collaborative virtual manufacturing processes; and to deal with evolution of changes. Under EU H2020 FIRST project, we propose a final year project, which is to develop IT application experiments that address advanced added value production process and systems, which incorporate industry 4.0 concepts.

Project description

The project is in the area of system design. High speed shoe factory components, such as data acquisition and management, need to be reviewed. More specifically shoe process interoperability standard (SPRINTS) could be applied to the final potential design. The final thesis provides an overview of related technologies, where to apply sensors into a single production phase at a high speed shoe factory, where to acquire planning data, where to acquire producing data, and how to manage data related to planning and production.

Project aims

- Understanding of high speed shoe factory concepts
- Critical reviewing related technologies of data acquisition and management at high speed shoe factory
- Mastering technologies of data acquisition and management at high speed shoe factory
- Providing overview of data acquisition and management at high speed shoe factory
- Designing a high speed shoe factory system model with data acquisition and management

Artefact

- Research report
- Overview of data acquisition and management at high speed shoe factory
- Design of a high speed shoe factory system model with data acquisition and management

Evaluation

- Are related data acquisition and management technologies within a high speed shoe factory identified and compared?

References:

- [1] http://icams.ro/icamsresurse/2016/proceedings/VI_Economics_04.pdf
- [2] <https://www.economist.com/news/business/21714394-making-trainers-robots-and-3d-printers-adidass-high-tech-factory-brings-production-back>
- [3] <http://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=6011690>
- [4] <http://ieeexplore.ieee.org/document/1458327/>