



SIMULATION GAME DIGITALISED PRODUCTION CONTROL

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Status quo

Today's manufacturing companies are faced with the rising demand for individual products. In the manufacturing industry, this is reflected by increasing numbers of variants with decreasing batch sizes right down to personalized products with a batch size of 1. Manual production planning and control methods are only able to meet these demands to a limited extent. This situation poses major problems for many companies without suitable digital tools.

Solution

Moving from lean production to digitalised production (Industrie 4.0) holds not only great opportunities but also new challenges. Employees need to be able to tackle these actively and independently through appropriate measures. Fraunhofer IPA has devel-

oped a simulation game to help workers develop these new skills. The game uses various digital technologies to simulate the manufacture of an exemplary product (simple robot). The aim of the game is to sensitize employees to the ongoing digital transformation process and prepare them for it. The game enables them to experience the challenges of the transition from lean production to digitalised production in a simulated but realistic environment.

Realization

The simulation game developed by Fraunhofer IPA applies active learning methods to achieve better learning results than those obtained from the comparatively passive conventional method of frontal teaching. Two production methods (lean production and Industrie 4.0) are presented and combined in two different rounds of the game.



Afterwards, the advantages and disadvantages of the different types of production are discussed with the participants.

How the game works in detail:

Introduction

- What did we do to change from "chaos" to "lean"?

First round: Lean Production

- Production with Kanban
- Thoughts on, analysis of and discussions about the „Lean Production“ round of the game

Second round: Industrie 4.0

- Discussion and introduction to Industrie 4.0 and MES
- Production using an MES from Xetics
- Thoughts on, analysis of and discussions about the „Industrie 4.0“ round of the game.

Evaluation and discussion

- Focus on the automated analysis of KPIs
- Advantages of mobile devices and flexible solutions
- Comparison of the two rounds

Our services

In this interactive simulation game, the participants become familiar with the changes in production planning and control brought about by Industrie 4.0. They can experience these changes for themselves by assembling simple robots.

The game can be individually tailored to customer requirements and consists of the following modules:

- Core module:
interactive simulation game in 2 rounds (2 h: 1 h Lean-Production + 1 h Industrie 4.0)
- Short module:
interactive simulation game in 1 round (1 h: Industrie 4.0)
- Lecture module:
introduction to Industrie 4.0 and topicspecific lectures on production control and MES (1 h –2.5 h)

The game can be played on your own premises or at Fraunhofer IPA in Stuttgart. The number of participants should be between 7 and 15. The price depends on the outlay involved (approx. 1,800 € – 4,500 €).

If you do not have enough participants from your own company, we also offer all-day events on a regular basis.

For more information, please contact us.

We will also be happy to help you develop an individual simulation game tailored to your company requirements, which you can use to train your staff.

Your advantages

This simulation game allows participants to try out new digital tools and MES for digitalised production as they assemble simple robots according to different manufacturing principles. They observe how the production process runs according to the principles of lean production and Industrie 4.0 and discover the advantages offered by Industrie 4.0 in production control. The game is suitable for staff training and further education with the aim of increasing people's understanding and acceptance of Industrie 4.0.