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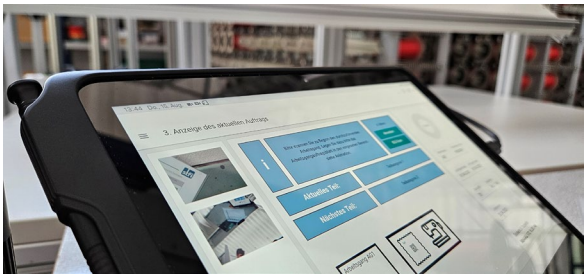
Model-based and adaptive tracking and tracing assistance system for order management in ready-made textile production

Objective

The textile industry is characterised by continuous and efficient processes with high throughput rates. However, the trend, is moving towards customised products in small batch sizes with increasingly shorter life cycles and a shift in the product portfolio towards technical textiles. In order to contribute to the development and production of such future products, one must not only possess production expertise but also a reliable, stable, and transparent production chain. Small and medium-sized clothing manufacturers also face similar tracking and tracing requirements.

Which tracking and tracing system is best suited for changeable processes with flexible, order-related machine staffing for both modern machines and existing machines? Is it also cost effective and open to integration? For one or more of the above, there is no adequate solution or approach on the market or in research.

Approach and results



Adaptive tracking and tracing assistance system with marker-based material detection

The aim of the project was the development of an adaptive tracking and tracing assistance system based on technologies from the fields of Industrial Internet-of-Things, mobile computing, wireless communication and graphical low-code programming. The technologies employed in this instance were primarily open-source software.

The following functions are included in the developed assistance system:

- Automated registration processes through radio-based person registration and optical machine registration, as well as training assistance through step-by-step displays
- Support for picking processes using scanning gloves and positioning technology
- Camera-based material detection, sensory process monitoring using plug-and-produce sensor technology and smartphone-supported marker-based declaration booking
- Flexible adaptability of the assistance system through model-based low-code technologies

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The final report on this project is available on request.

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