Streamlining Transportation Tasks: A Modular Approach with Planar Motors (MA/SA)

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Task Description:

To make transportation tasks more flexible, Planar Motor Systems route magnetic levitators in six degrees of freedom between connected infeeds and outfeeds. A tradeoff of this high flexibility is the complexity of programming the control software. Especially, collisions of the magnetic levitators must be avoided.


Source: https://planarmotor.com/de/products

Thus, this project aims to break down transportation tasks into "transportation primitives" that can be strung together to form transport strategies. These strategies will be generated automatically and then executed on the PLC in real time. Previous work at the institute concerned the implementation of primitives and automatic strategy planning on a lab-sized demonstrator. Now, your task is applying these findings in an industrial setting. Thereby, a real Planar Motor System of a packaging industry partner of the institute will be used.
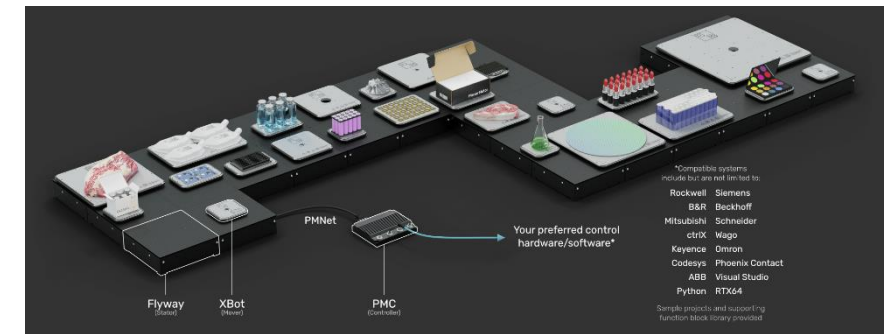
Preliminaries:

- Knowledge of automated manufacturing (e.g., lecture Automation Technology)
- Strong programming experience, ideally in IEC 61131-3
- Independent work ethic and interest in industrial experience
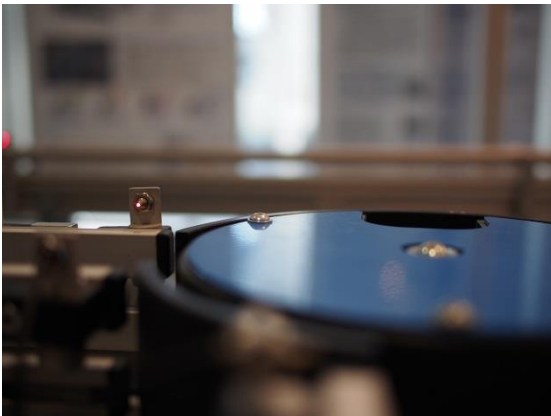
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