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"Meclab" Project

At a time when all areas of human life are characterized by an increased automation and a constantly growing complexity of technical systems, it is no longer sufficient to exclusively retreat to basic technical processes of craft-based kind and to exclude the field of complex automated solutions, as being common in the industry, but also increasingly in private households, from the educational contents of technical lessons in the 21st century.

If the objective of general technical lessons is to help provide the school students with responsibility, that is with self-determination as well as co-determination in a modern industrial society, the latter also requires an agency while handling modern automated systems. The introduction of new contents and media does not constitute a paradigm change, but a supplement and expansion of existing learning media concepts for technical lessons. In this context, it has to be observed that teaching media - apart from the purely technical-scientific contents and objectives that can be exploited or achieved with their help - are also determined by didactic intentions at all times. This applies to their use in the real teaching process itself as well as naturally also to the process of their development.

The development of the Meclab learning media system that started in 2006 was characterized by such considerations too. With handling the technical working models of the Meclab learning media system in a problem-conscious and target-oriented manner, the school students should:

- › acquire or extend their knowledge of the importance and performance of automated technical systems
- › understand the overall operation as well as the performance of components and parts of the system
- › use these skills, e.g. for the control, adjustment and modification of the sensors and actuators, thus, for optimizing the system
- › transfer the findings obtained to any other automated systems

The Meclab learning media system was developed in close and good cooperation between engineers of the company Festo Didactic and tutors or students and optimized together with school students and teachers at 12 test schools. It represents and simulates the reality of an automated technical system and consists of three partial systems as to its hardware.

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