

MODULE TYPE PACKAGE (MTP)



Standardized integration of process modules into control technology

Increasing modularization in the process industry presents operators and manufacturers of plant technology with the challenge of integrating heterogeneous systems quickly, flexibly, and independently of manufacturers into a higher-level control technology. The **Module Type Package (MTP)** offers a promising approach to drastically reducing this integration effort.

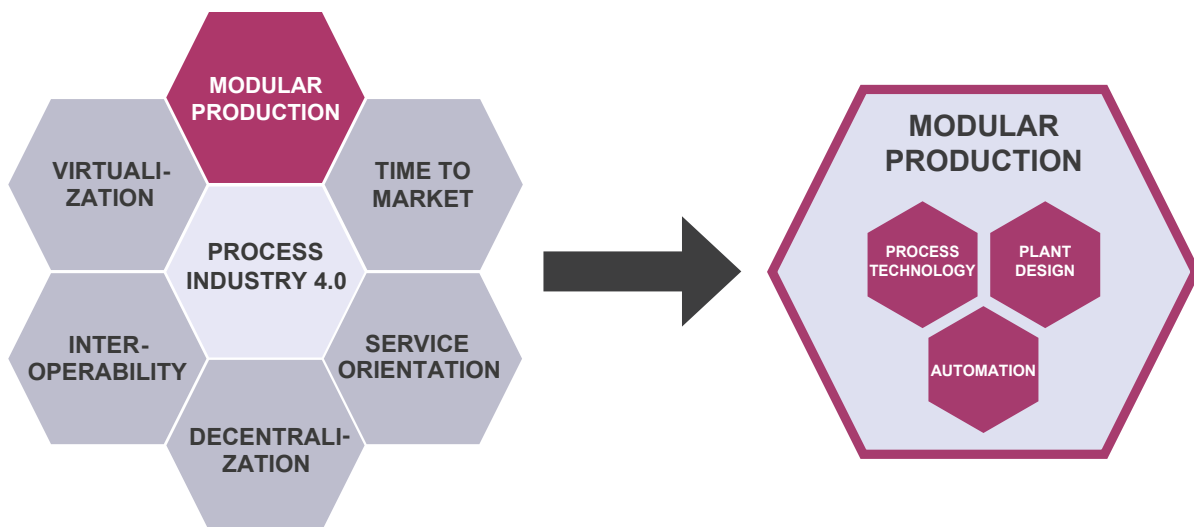
Basic principle of MTP integration

The MTP concept describes a **standardized exchange format** that can be used to integrate process equipment assemblies (PEA)—i.e., sub-systems, modules, or even complex systems—into a process orchestration layer (POL) independently of the manufacturer:

- An MTP is essentially a file in XML format that describes function calls, communication interfaces, and operating and monitoring screens.
- This file acts as a „driver“ similar to that of a printer: The PEA provides the MTP file, the POL reads it and can then access the PEA functions described therein via OPC UA services. The visual representation of the PEA, alarm, process, and reporting values are also contained in the MTP and can be used.

Advantages of the MTP approach

- **Standardization:** Modules can be integrated into the overall system with minimal engineering effort („plug & produce“).
- **Flexibility:** Manufacturer-independent integration increases the flexibility of the modular system and facilitates the replacement of individual modules.
- **Time and cost savings:** Fewer consultations and adjustments on the part of PEA manufacturers; faster project set-up.
- **Qualification in the pharmaceutical environment:** Pre- and partial qualification is possible, reducing validation effort.
- **Scalability:** Plants can be expanded or adapted efficiently.
- **Communication:** OPC UA data is transmitted in encrypted form and decrypted by the POL.



Images courtesy of PNO e.V. designed by SpiraTec AG



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Future Perspective

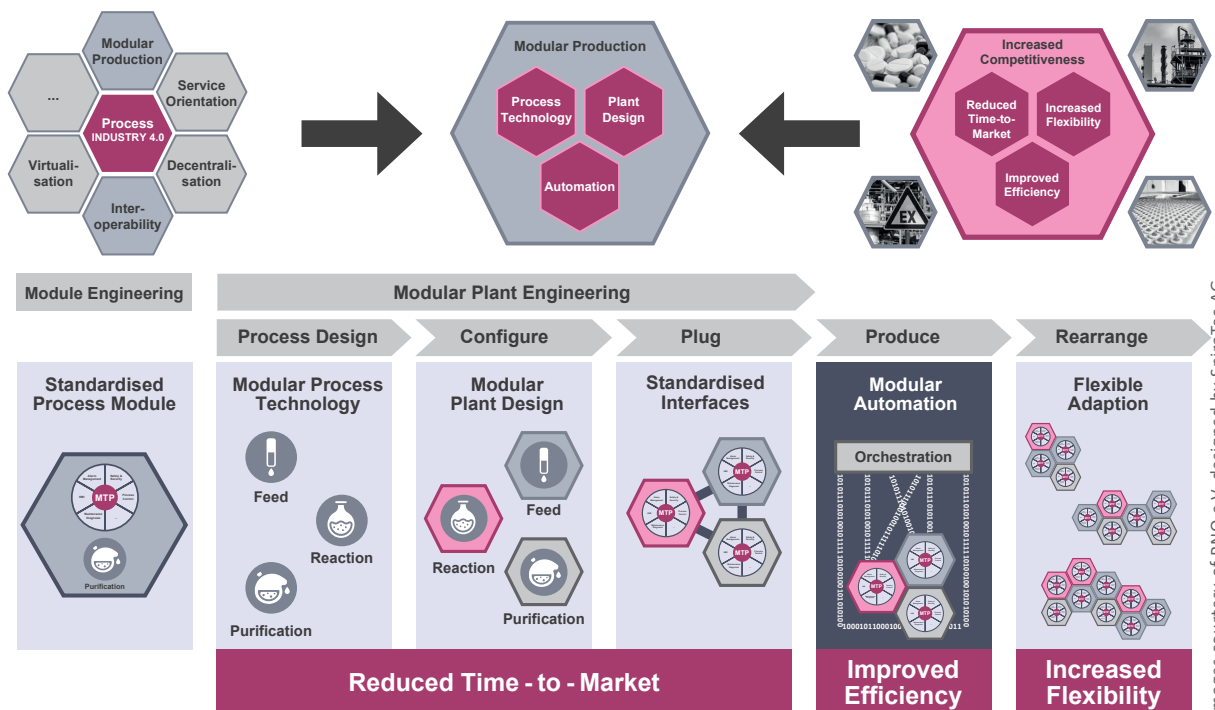
The vision of MTP is end-to-end standardized and **structured plant integration** and communication that is manufacturer-independent, simplifies maintenance, and standardizes programming approaches. In combination with digital twin concepts, modules can be virtually tested and optimized before being integrated into the real plant.

MTP is therefore a key building block on the path toward more flexible, efficient, and interoperable production systems—comparable to the way an operating system (e.g., Windows) uses drivers to standardize the integration of a wide variety of hardware (e.g., printers).

As one of the pioneers in the use of MTP, we see this technology as the decisive lever to transform process automation from a rigid architecture into a **modular, flexible, and future-proof** one.

Market and **standardization status**

- The basic idea of MTP was introduced in 2017. Since around 2020, the topic has gained significant momentum in the literature and has been applied in practice since approximately 2022
- The MTP Specification 2.0 was published in January 2026 by PROFIBUS & PROFINET International (PI)
- Well-known manufacturers of POL and PEA solutions are already driving implementation and are seeing growing acceptance in the market



Take **advantage** of the lead with **MTP!**

Our experts look forward to answering your questions and working with you to find the right solution - contact us and make your process automation future-proof.

