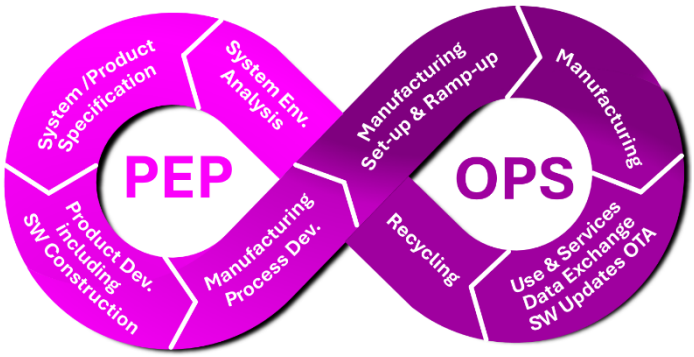
LIFECYCLE SOLUTIONS
center of innovative professionals

Sustainably Shaping Digital Transformation and Process/Project Efficiency in the Development of Control Units as well as Mechatronical and Cyber-Physical Products with and around Polarion

We, cip alpha, are the right partner for the economical and effective shaping of product data and product lifecycle management in companies that develop and mass-produce control units and/or mechatronical/cyber-physical products.



System Lifecycle Management (SysLM) | © 2025 cip Lifecycle Solutions

We are a well-coordinated team of engineers who are passionate about customer success and digital transformation — by developing software tools and providing expert consulting to our clients' employees. In this sense, we are a typical systems house that synergistically combines software development expertise with process development and optimization under one roof. We understand the processes of product emergence, PEP for short, comprising product and production process development, the technical design of and the technologies behind the products, the methods and software tools used throughout the product emergence lifecycle, as well as the dependencies on laws, regulations, and standards — including related testing and certification. Our customers are companies in the mobility (road, rail, water, air), mechanical and plant engineering, medical and defense technology sectors.

The former Polarion Software GmbH, based in Stuttgart, Germany, introduced the world's first browser-based ALM software tool solution in 2004 — developed from the ground up to enable seamless collaboration across distributed teams. Polarion was a pioneer with its concepts of bi-directionally linked work items, enabling full traceability and increased productivity in product development. In 2016, Polarion Software GmbH was acquired by Siemens Digital Industries Software Inc., based in Plano, Texas, USA.

Some members of our team have been involved with Polarion users since the very beginning. Even today — and with a confident view toward the future — we remain impressed by Polarion's maturity and are convinced of the potential its continuous development offers. Since 2017, we have enjoyed an intensive, fruitful collaboration with Siemens as a certified PLM Solution Partner.

Solution Partner
PLM
SIEMENS

Polarion is a very powerful, application-neutral toolbox that does not include ready-made solutions tailored to the development of specific products or industries. Drawing on our many years of experience with numerous customer-specific Polarion adaptations, we have developed an extension that enhances Polarion to support product data and lifecycle management in the development of control units and mechatronical/

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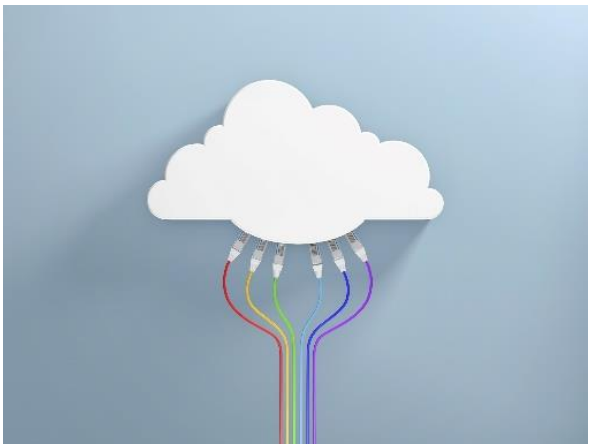
cyber-physical mass-produced products — seamlessly covering every step from the initial product idea or customer request to the SOP (Start of Production). This add-on is called AM-PACK – Advanced Management Package. Depending on the size of the company, our customers have anywhere from tens to more than a thousand development engineers working with Polarion+AM-PACK every day. We have supported each of these customers in optimizing their product development processes and enabled them to achieve productive use of Polarion+AM-PACK in a short amount of time.

However, it doesn't always have to be AM-PACK: We support Polarion users with their own customization ideas by applying our Polarion expertise, right through to customer-specific contract work. This is particularly common when, for example, IBM Doors Classic needs to be replaced by Polarion – we have successfully carried out such migrations from Doors environments with well over a thousand users.



Polarion runs, in the simplest case, on a single server, but typically on multiple servers within an on-premise or cloud network. The majority of our customers have entrusted us with the complete administration of their Polarion networks, and some even with the entire hosting.

Polarion server landscapes are no longer isolated islands. Polarion communicates with other systems such as Teamcenter, Enterprise Architect, Matlab Simulink, and more. Designing such interfaces is also part of our service portfolio. We find performance enhancements of Polarion particularly interesting in the form of digitizing paper-based information and utilizing artificial intelligence, as offered by systems like DRIM and ReqMan – both of which we have practical and positive experience within customer projects.

Nothing is perfect – not even Polarion. Over time, and still today, Polarion users have approached us with feedback about usability bottlenecks in the Polarion user interface (UI). For several years now, we have been consistently addressing this issue by developing small extensions that each overcome a specific bottleneck in Polarion and marketing them worldwide. UPPS! Extensions is the name of this successful product family.

UPPS! stands as an acronym for the cognitive chain Use Case → Problem, Problem, … → Solution!

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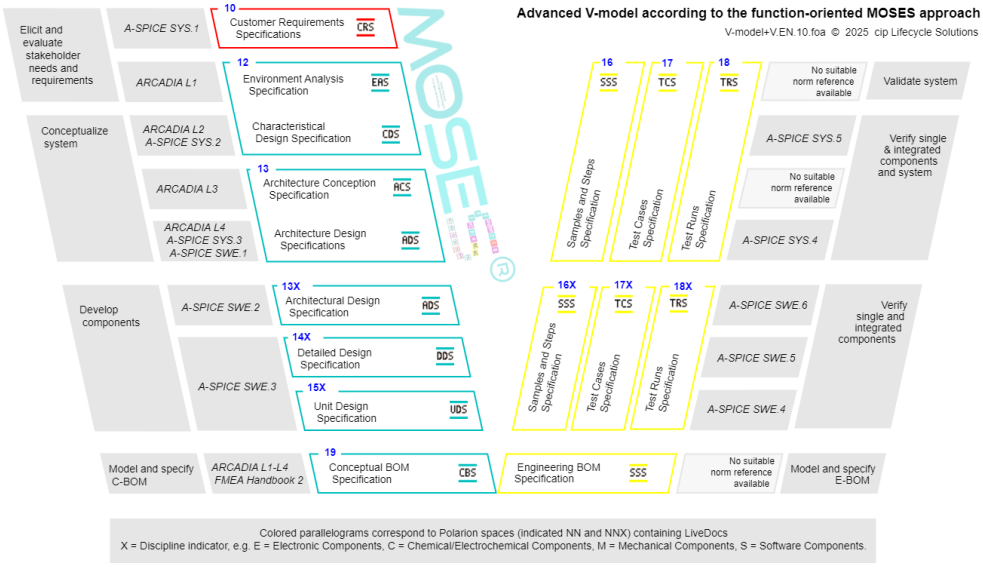
Since the late 1990s, requirements and tests have formed the backbone of process design and quality assurance in product development, based on the proven V-model. We have enabled AM-PACK to optimally support this approach through-out product emergence, and in individual collaborations we have assisted customers in tailoring Polarion specifically according to the V-model. However, the framework conditions have changed dramatically in the meantime:

- Due to the digitalization of products — meaning the shift of their performance potential from electromechanics to software — the number of requirements per product to be developed has increased by a factor of 50 to 100, especially driven by the specification of digital communication. The complexity of the products has exceeded the limits of what individual people and even high-performing teams are capable of overlooking.
- The so-called time-to-market — that is, the period from a product initiative to the ability to mass-produce it ready for the market — has drastically shortened due to competitive and success pressures, from timeframes of around 5 to 10 years to less than 3 years, with a continuing downward trend. As a result, traditional sample and prototype construction now has only very limited relevance on the timeline.

The methodological alternatives increasingly replacing the drill-down of requirements through the left wing of the V-model and the sample/prototype construction are Model-based Systems Engineering, or MbSE, and simulation.



We have been dealing with these paradigm shifts for years, have understood and experienced the challenges that SysML poses for non-IT specialists, and as a result, we developed the methodology MOSES as a lightweight MbSE approach and implemented it for Polarion in AM-PACK: Model-oriented Systems Engineering Support. Instead of experimenting with SysML implementations, our customers are already successfully working with MOSES in a model-based way today. They benefit from MOSES's capabilities to manage functions, interfaces, and properties in a structured manner and seamlessly pass them on to simulation tools.

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