

Sadek, T.; Müller, P.; Welp, E. G.; Blessing, L.

Integrated modelling of products and services – The conceptual design phase in an integrated IPS2 development process

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Abstract

After a characterization of (industrial) product-service systems (PSS, IPS2) particular aspects of their development processes are emphasized. The components of a generic PSS and IPS2 development methodology are described and an approach of a new IPS2 concept modelling is introduced. This approach bases on formalized modelling spaces for product and service elements. The description of these modelling spaces shows how the three dimensions detailing, abstraction, and formalization fit together. The application of this new approach leads to an extended heterogeneous modelling of IPS² concepts which are especially capable to support the coupling of products and services in an integrated model. The relevance of knowledge-based engineering is mentioned in this context. A generic modelling notation and modelling transformation methods are discussed.