

## Deliverable D500.11

# Early Prototype: Specification of Infrastructure, PES Deployment Platform & Service Composition

## WP 500

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## 1 Executive Summary

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The ProSEco project aims to provide a novel methodology and a comprehensive ICT solution for collaborative design of product-services (Meta-product) and production processes relying on Ambient Intelligence (Aml) technology, lean and eco-design principles and applying Life Cycle Assessment techniques, to allow the effective extensions of different products (from different manufacturers) with services. In this direction, the ProSEco project intends to apply a Cloud Manufacturing approach for enabling effective collaborative design as well as the effective implementation and potentially discovering of innovative services with the main objective to strengthen European manufacturing companies competitiveness in the market sharing. Taking into account the main objectives of the project and the overall ambition, the present document provides the specification of both the technical infrastructure upon which the ProSEco platform will run and the PES Deployment Platform & Service Composition.

The infrastructure will be based on the web services technology and designed by using the Service Oriented paradigm. In this context a key issue will be the specification of the Service Broker that will be the engine responsible for the trustful execution of Product Extension Service (PES) solution configured by the user through the ProSEco Collaborative Development platform (see WP200). Furthermore, the infrastructure will also provide a Repository Layer in order to support the data flow between the different engineering tools that will be provided.

The PES Deployment Platform & Service Composition will run on the top of the specified backbone infrastructure. Therefore, a necessary condition for the PES Deployment Platform & Service Composition is to have the backbone infrastructure running. Since the main objective of the PES Deployment Platform & Service Composition is the deployment of PES solutions - developed by the user by using the ProSEco Collaborative Development platform - then it will rely on a well-defined semantic model for enabling the integration of the information between the two main platforms. Moreover, the PES Deployment platform & Service Composition will be also responsible for providing all the necessary information to the Service Broker (i.e. to the processing engine) to allow the execution of designed PES solutions. Therefore, as an essential part of the PES Deployment platform & Service Composition will be the description of the available distributed software resources and functionalities that can be invoked by the Service Broker according to certain rules that are part of the Service Composition.

Finally, the PES Deployment platform & Service Composition is used as the glue for ProSEco Collaborative Development platform and the Deployment environment that is functionally constituted by the Service Broker.

This document, D500.11, Early Prototype: Specification of PES Deployment Platform & Service Composition, reports the first version of the document presenting the preliminary specification of the runtime infrastructure, PES Deployment Platform & Service Composition where in the next version of the document, D500.12, Full-Prototype: Specification of PES Deployment Platform & Service Composition, the complete specification will be documented. In the next version of the document, due on month 30 of the project, the runtime infrastructure will take advantage from the integration and evaluation of the early prototype of the ProSEco solutions in order to have a more stable foundation for detailing more the platform use in the selected scenarios.