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HEADS
Heterogeneous and Distributed Services for the Future Computing Continuum

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Title:

D5.7 HEADS IDE: Workbench for developing HD-services

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Abstract / Executive summary:

Heterogeneous and Distributed services (HD-Services) are composed by a highly heterogeneous interconnection of platforms and devices offering a wide diversity of capabilities ranging from cloud server with virtually unlimited resources down to microcontrollers with only a few KB of RAM. The HEADS project leverages Model-Driven Software Engineering and generative programming techniques to provide a new integrated software engineering approach which enables the advanced exploitation of the full range of diversity and specificity of the future computing continuum. The main result of the HEADS project is an open-source Integrated Development Environment (IDE) supporting the collaboration between platform experts (having a deep knowledge of a reduced set of platforms) and service developers (needing to deal with a large set of platforms to develop added-value services). This IDE will include a Domain Specific Modelling Language and a methodology for the specification, validation, deployment and evolution of software-intensive services distributed across the future computing continuum. This document motivates the fact that no single software framework or software engineering approach is suited to span across this range, and proposes an approach which leverages the latest advances in model-driven engineering and models@runtime in order to manage the heterogeneous and distributed nature of HD-Services. This deliverable introduces also the set of technologies that will be used in HEADS project and state why and how these features are going to help in achieving the overarching goals of the HEADS project. This document visually depicts the workflow of the IDE, and for each step it extracts the design requirements with respect to the KPIs devised in the D1.2 and states the design principles applied to achieve the expected KPIs.

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