

# Towards an Open Platform for Democratized Model-Based Design and Engineering of Cyber-Physical Systems

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This paper reports on the development of GitWorks, an open platform for democratized Model-Based Design of cyberphysical systems (CPS). The GitWorks platform is currently under development by Perpetual Labs Ltd in collaboration with the Open Source Modelica Consortium (OSMC)<sup>1</sup> and the OpenCAESAR project<sup>2</sup>. In this paper, we present our vision for the platform, its system architecture (shown in Figure 1) and a prototype implementation.

We also present a case study that demonstrates the use of the proposed platform for enabling the seamless integration of Modelica models into a broader range of systems engineering processes for complex product development.

In the long-term, the platform also aims to enable the integration of Modelica tools with advanced systems engineering processes that rely on other domain specific languages (e.g. SysML v2, BPMN, etc.).

<sup>1</sup> <https://openmodelica.org/home/consortium>

<sup>2</sup> <https://www.opencaesar.io/>

<sup>3</sup> All trademarks, logos and brand names are the property of their respective owners.

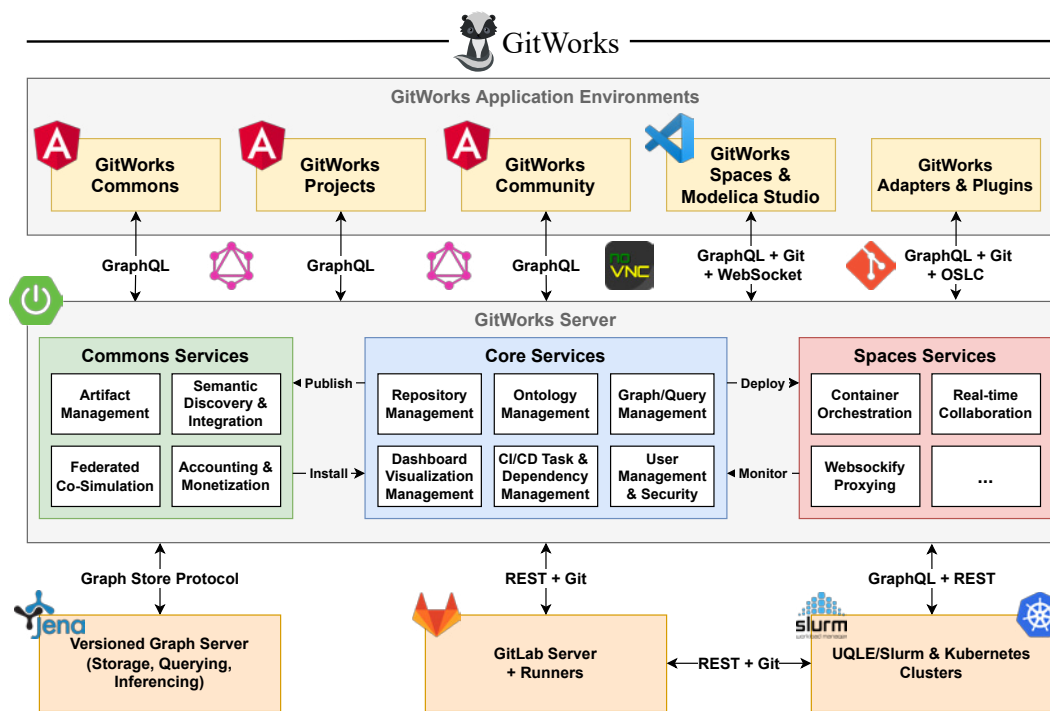


Figure 1. Conceptual software architecture of the GitWorks Platform<sup>3</sup>