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) and the OpenCAESAR project. 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.).

1 https://openmodelica.org/home/consortium
2 https://www.opencaesar.io/
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Figure 1. Conceptual software architecture of the GitWorks Platform

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