

# MegaM@RT2: Mega-Modelling at Runtime

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Madrid, 22/10/2017

**New European initiative seeks to empower modeling community with tools that reduce the gap between design-time and run-time.**

The MEGAM@RT2 initiative - **MegaM@RT2 Modelling at Runtime - A scalable model-based framework for continuous development and runtime validation of complex systems**, coordinated by Mälardalen University, Sweden, was

launched in April 2017 with the mission to improve current tools for engineering practices to tackle advances in productivity and quality expected in relevant IT areas for Europe such as cyber-physical systems, by trying to integrate modern design and runtime aspects within system engineering methods incorporating existing Model-Driven Engineering tools.

The project believes that IT companies can improve quality of software by matching system's behavior at runtime with the design in order to fully understand the critical situation, failures in design and deviations from requirements. Nowadays, many methods and tools exist for tracing the execution and performing measurements of runtime properties. However, these methods do not allow the integration with system models - the most suitable level for system engineers for analysis and decision-making.

Thus, **MegaM@RT2** plans to create a continuous system engineering cycle between design and runtime, ensuring the quality of the running system and getting valuable feedback from it that can be used to boost the productivity and provide lessons-learned for future generations of the products. The solution provided by MegaM@Rt2, will be driven by real-world requirements provided by end users from maritime, railway, telecom and other industrial domains, will be packaged under the MegaM@Rt2 tool box, which includes a) **Design-time Tools:** Holistic system engineering; Team collaboration over distributed models; and Global traceability; and b) **Run-time Tools:** Tracing / Monitoring and Models@Runtime.

The initiative, running for 36 months has a budget of 3.199.625 Euros, and it is funded by the Electronic Component Systems for European Leadership Joint Undertaking under grant agreement No 737494. This Joint Undertaking receives support from the European Union's Horizon 2020 research and innovation programme and Sweden, France, Spain, Italy, Finland, Czech Republic.



The initiative is being undertaken by Mälardalen University, SOFTEAM, Thales SA, Smartesting Solutions and Services SAS, ClearSy SAS, Association pour la Recherche et le Développement des Méthodes et Processus Industriels, L'Université de Pau et des Pays de l'Adour, Atos Spain SA, Universidad de Cantabria, Fundació per a la Universitat Oberta de Catalunya, Ikerlan SCL, Fent Innovative Software Solutions SL, TEKNE S.R.L., Università degli Studi dell'Aquila, Intecs Solutions SpA, Ro Technology Srl, Åbo Akademi, AinaCom Oy, Space Systems Finland Oy, Nokia Solutions and Networks Oy, Teknologian tutkimuskeskus VTT Oy, Conformiq Software Oy, Bombardier Transportation Sweden AB, Volvo Construction Equipment AB, SICS Swedish ICT Västerås AB, Vysoké učení technické v Brně, Camera spol. s r.o.

For more information on the initiative contact the coordinator Gunnar Widforss ([gunnar.widforss@mdh.se](mailto:gunnar.widforss@mdh.se)), visit our website <https://megamart2-ecsel.eu> or follow us on Twitter [https://twitter.com/MegaMart2\\_ECSEL](https://twitter.com/MegaMart2_ECSEL).

#### **For Atos**

For Atos, **MegaM@RT2** project represents a good opportunity to strengthen its position as a large software company, with large customers and very demanding requirements in terms of quality and complexity. Atos collaborates to improve early verification and validation of system models execution (simulation) at design-time in difference with run-time, to drastically reduce time. Also providing advances on the generation of design-time models taking advantage of a feedback loop built of top of run-time log information generated by running applications.