



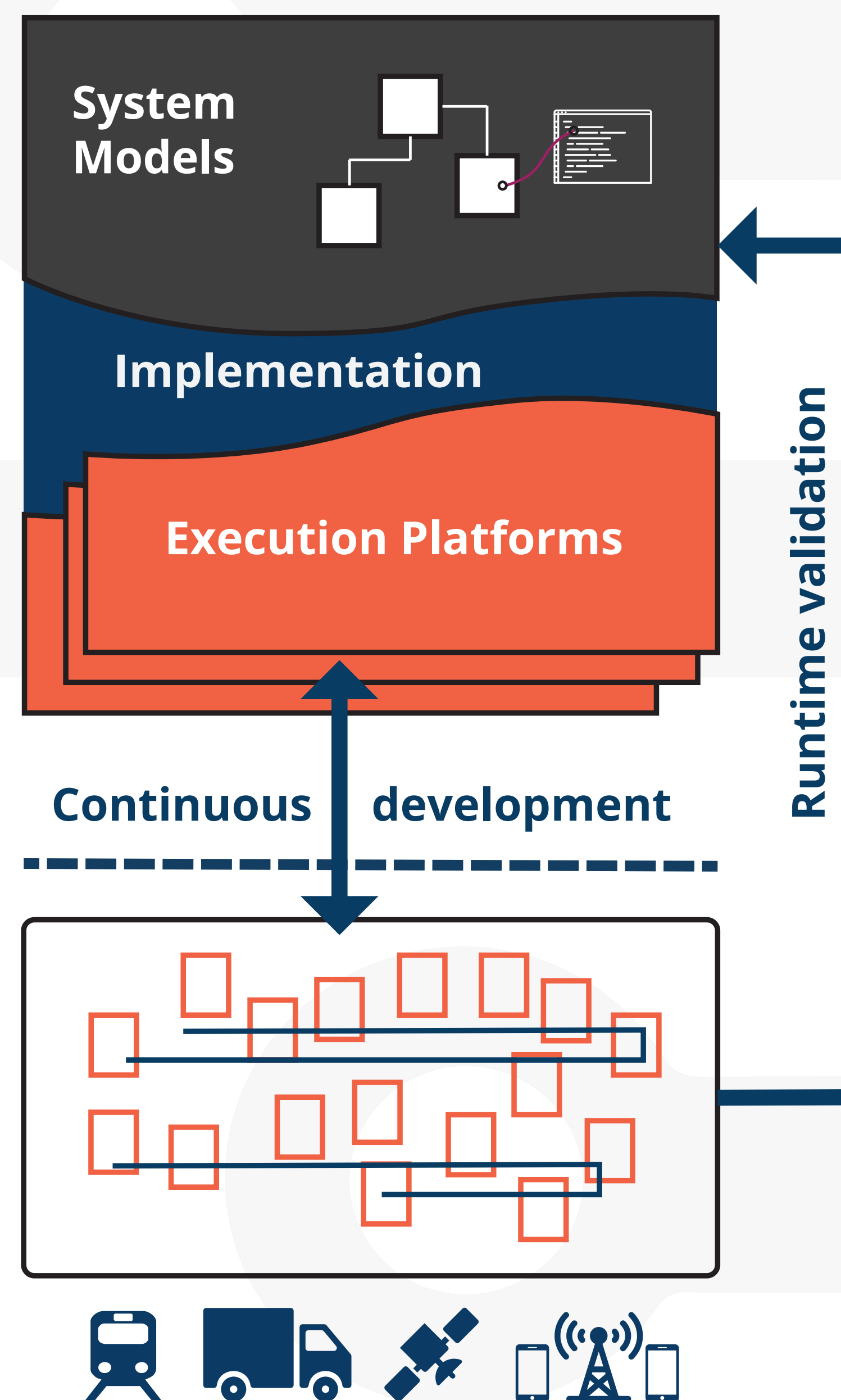
# MegaM@Rt<sup>2</sup>

An scalable model-based framework  
for continuous development  
and runtime validation of complex systems

## Value proposition

MegaM@Rt2 is a **set of tools, methods and guidelines** to help developers in software development process in systems engineering and service development **for embedded systems**.

MegaM@Rt2 mitigates the risk and errors produced during software implementation on hardware by proposing a **continuous development methodology and tooling for improving (iteratively) system design** thanks to **feedback** obtained from **runtime**-collected information (from the system that can be actually deployed, or just simulated).



## Proposed Solution

Relying on **model driven** principles and practices, a **model-based system engineering** approach is helping to centralize all the architectural information, linking the industrial needs with the tooling capabilities, and partially generating the set of design documents.

The **MegaM@Rt2 framework** gathers more than **30 tools** for **holistic** Systems Engineering (design, V&V), Runtime Analysis (monitoring, online testing and verification as well as models@runtime techniques) and Megamodelling (large-scale model management, traceability and mappings).

## Scientific Objectives

The MegaM@Rt2 project's main goal is to create a framework incorporating **methods and tools for the continuous development and runtime** Verification & Validation (V&V) of complex software-intensive systems. The **MegaM@Rt2 architecture** integrates three main complementary capabilities: systems design engineering, runtime traceability on system-level, and global model and traceability management. The ultimate goal is to significantly **improve productivity, agility, and predictability** in the development of complex safety-critical and real-time systems at **industrial scale**.

## Expected impact

- Significantly **increased productivity and quality** of system development and **shorten time to market** for complex systems.
- **Reinforced European** scientific and technological **leadership** in the **design of complex systems**.
- **Improved competitiveness of European companies** that rely on the design and integration of complex systems in their products by reducing design and maintenance costs as well as the time to market.

## Use Cases

The project provides nine use case scenarios ranging from avionics, railway, logistics, telecom and traffic monitoring, each being relevant in showing generally applicable

improvements in system development efficiency and effectiveness through a scalable model-based framework for continuous development and runtime validation.



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