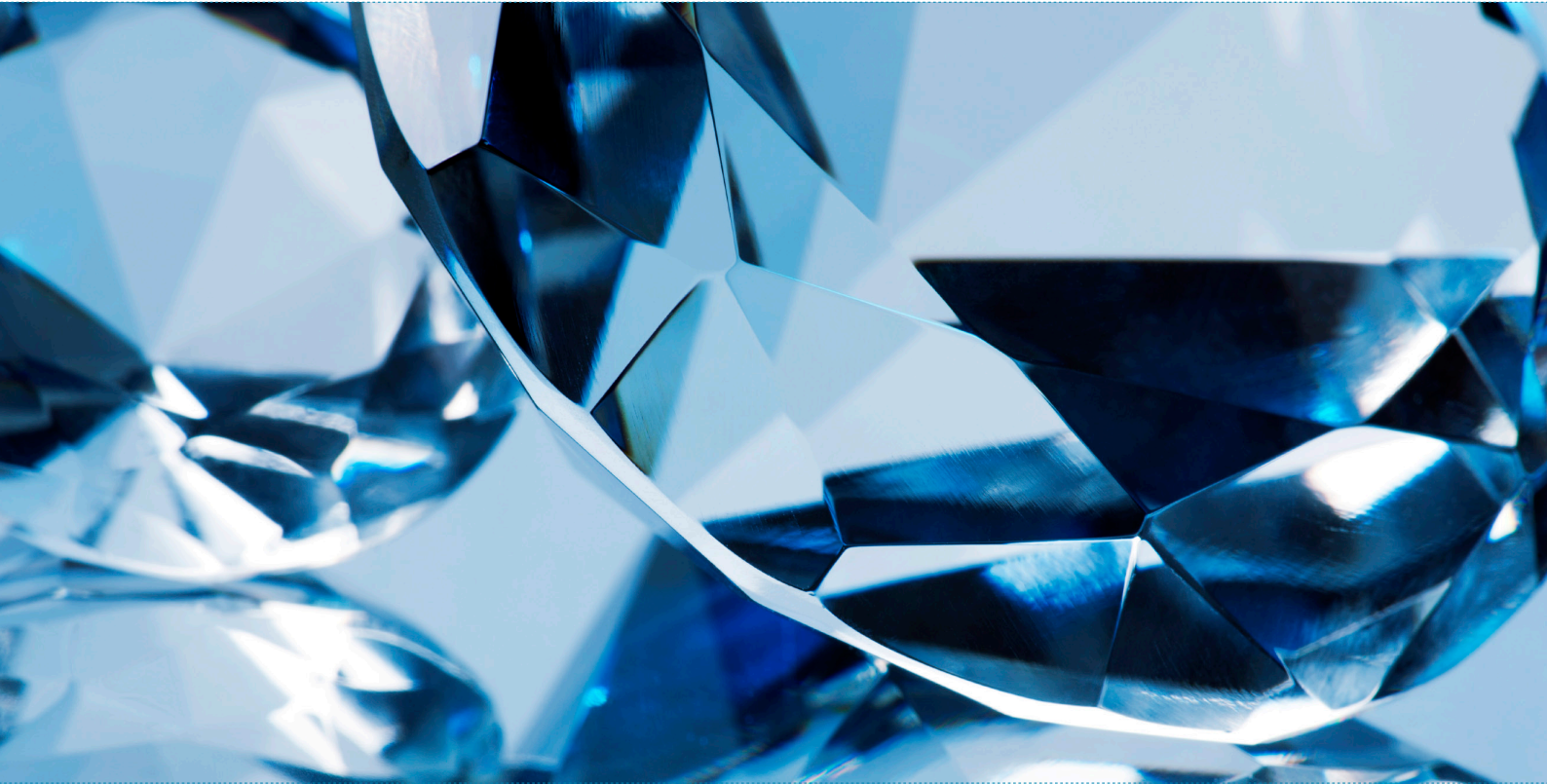




CRYSTAL

CRITICAL sYSTEM engineering AccELeration



EXECUTIVE *summary*

CRYSTAL as an ARTEMIS Innovation Pilot Project (AIPP) takes up research results of previous projects in the field of Reference Technology Platform (RTP) and Interoperability Specification (IOS) (e.g. CESAR, MBAT ...) and enhances and matures them with the clear aim of industrialization take-up.

MARKET INNOVATION & impact

The process of developing, deploying, governing, operating and maintaining modern safety-critical embedded systems is highly complex and requires specialized tools supporting different activities throughout the product life cycle. The overall process can be effective and efficient only, if it supports collaboration among all involved stakeholders and consequently interoperability between the tools they are using. The main technical challenge in addressing this problem is the provision of open and common interoperability technologies supported by the different tools that generate and provide access to data covering the entire product lifecycle. Creating and establishing a new standard on a large scale in an already consolidated market cannot be achieved by small individual organizations. With a budget of more than 82 million Euro and 68 partners from 10 different European countries, CRYSTAL has the critical mass to accomplish this endeavor. The project consortium

is made up of participants from all relevant stakeholders, including OEMs, suppliers, tool vendors and academia.

The technologies provided in CRYSTAL will lead to faster development cycles including early validation of design concepts. The CRYSTAL IOS will increase the flexibility for all stakeholders and has the potential to deeply impact the market on a global level. OEMs can easily combine tools from different vendors, and tool vendors will be able to find new market opportunities in an open and extensible environment.

CONTRIBUTION to SRA

The project CRYSTAL (CRITICAL sYSTEM engineering AccELeration) takes up the challenge to establish and push forward an Interoperability Specification (IOS) as an open European standard for the development of safety-critical embedded systems in the automotive, aerospace, rail and health care domain. This standard will allow loosely coupled tools to share and interlink their data based on standardized and open technologies that enable common interoperability among various life cycle domains. This reduces the complexity of the entire integration process significantly. Compared to many other research projects, CRYSTAL is strongly industry-oriented and will provide ready-to-use integrated

tool chains having a mature technology-readiness-level (up to TRL 7). In order to reach this goal, CRYSTAL is driven by real-world industrial use cases from the automotive, aerospace, rail and health sector and builds on the results of successful predecessor projects like CEASAR, SAFE, iFEST, MBAT on European and national level.

RELEVANCE & CONTRIBUTIONS to Call Objectives

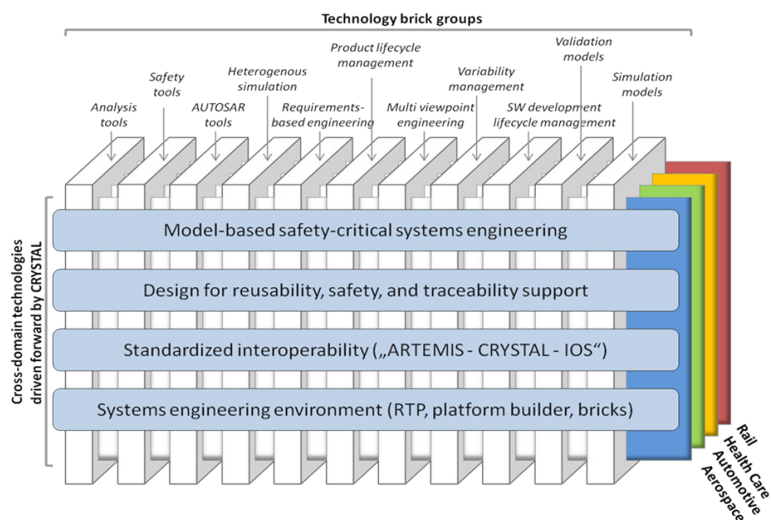
CRYSTAL will exploit domain-specific insights into embedded system design and safety processes to investigate and establish cross-domain synergies. Such cross-domain approach fosters the exchange of knowledge between partners of different domains creating synergies and hence strengthening the European market. The technologies provided in CRYSTAL together with the maturation of RTP and IOS will lead to faster development cycles including early validation of design concepts, thus allowing faster demonstration of feasibility.

R&D INNOVATION and technical excellence

CRYSTAL is designed as ARTEMIS Innovation Pilot Project with the aim to establish collaboration schemes beyond individual projects and to speed up technology maturation cycles. Accordingly, the strategy for CRYSTAL technical innovation is based on 4 pillars:

1. Based on specific user stories and use cases, increase the maturity of existing concepts developed by previous European and national projects for industrial application
2. Provide technical innovations on high maturity to fill gaps identified (“technological bricks”)
3. Contribute to the CRTP and push the Interoperability Specification towards standardization
4. Support SME integration in the embedded systems engineering ecosystem

Within and across the application domains Aerospace, Automotive, Healthcare and Rail, CRYSTAL will cover the entire software product life cycle and support to product line development towards ready-for-use industrial tool chains.



PROJECT partners



www.artemis.eu



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WEBSITE
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START
01.05.2013

DURATION
36 months

TOTAL INVESTMENT
€82 M

PARTICIPATING ORGANISATIONS
68

NUMBER OF COUNTRIES
10