



# CONCERTO

*Guaranteed Component Assembly with Round Trip Analysis for Energy Efficient High-integrity Multicore Systems*

## EXECUTIVE summary

Improve Model Driven Engineering practices and technologies to better address safety, reliability, performance, energy usage and other extra-functional concerns while guaranteeing component correctness.

## RELEVANCE CALL objectives

Reduce fatalities and injuries by building cost-efficient processes and methods supporting the development and operation of safety enabling embedded systems based on model-driven processes for the compositional development of safety critical systems operating on multicore platforms.

## MARKET innovation

CONCERTO technologies will reduce the system development costs of high-integrity embedded systems for Medical, Aerospace, Telecoms, Petroleum and Automotive and enable more complex systems to be developed that are safe and reliable yet cheaper to evolve and more energy efficient to meet the changing needs of citizens and industry.

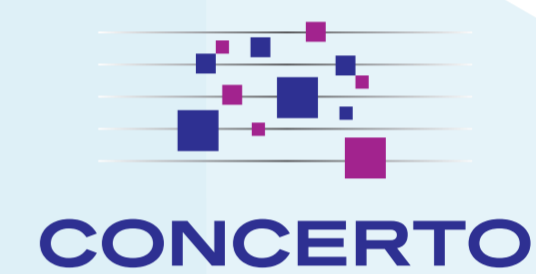
## European leadership in high-integrity systems

CONCERTO will create an opportunity for European industry to lead the emerging market for flexible but high-integrity software components, and to acquire new world class skills in the handling of extra-functional properties such as safety, energy usage and dependability for critical real-time software systems that exploit new multicore platforms. CONCERTO will enable European software developers to harness the power of advanced platforms without substantial increases in system design complexity.

## TECHNICAL innovation

- > Enable correctness-by-construction for multicore systems through innovative model-to-code transformation techniques
- > Rich multi-view, hierarchical cross-domain design space enabling a compositional approach for heterogeneous platform architectures
- > Incremental development of multicore systems through simulation and model-based analysis, with fully automated back propagation
- > Hardware modelling facilities equipped to cope with the new generation of advanced, multicore platforms
- > Advances in run-time monitoring of mission- and operation-critical non-functional properties including energy consumption on partitioned and multicore processor architectures

Fundamental improvement in the software quality of EU high-integrity real-time embedded systems  
CONCERTO builds on the previous CHES project ([www.ches-project.org](http://www.ches-project.org)) results from the ARTEMIS programme, as well as results from several other projects.



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<b>INSTITUTION</b> Intecs	<b>DURATION</b> 36 months
<b>EMAIL</b> Silvia.Mazzini@Intecs.it	<b>TOTAL INVESTMENT</b> 9,65 M
<b>WEBSITE</b> <a href="http://www.concerto-project.org">www.concerto-project.org</a>	<b>PARTICIPATING ORGANISATIONS</b> 15
	<b>NUMBER OF COUNTRIES</b> 8

