

Safe Cooperating Cyber-Physical Systems using Wireless Communication



Objectives

SafeCOP provides an approach to Cooperating Cyber-Physical Systems' (CO-CPS) safety assurance, by contributing to their certification and development. We define a runtime manager to detect abnormal behaviors at runtime, triggering, if needed, a safe degraded mode. We also develop methods and tools to certify cooperative functions and offer standards and regulations to certification authorities and standardization committees.

SafeCOP targets CO-CPS: systems that rely on wireless communication, have multiple stakeholders, use dynamic system definitions (openness) and operate in unpredictable environments. No single responsible stakeholder can be identified in these scenarios. Thus, safe cooperation realized on wireless communication and security is an important concern.

Relevance and Impact

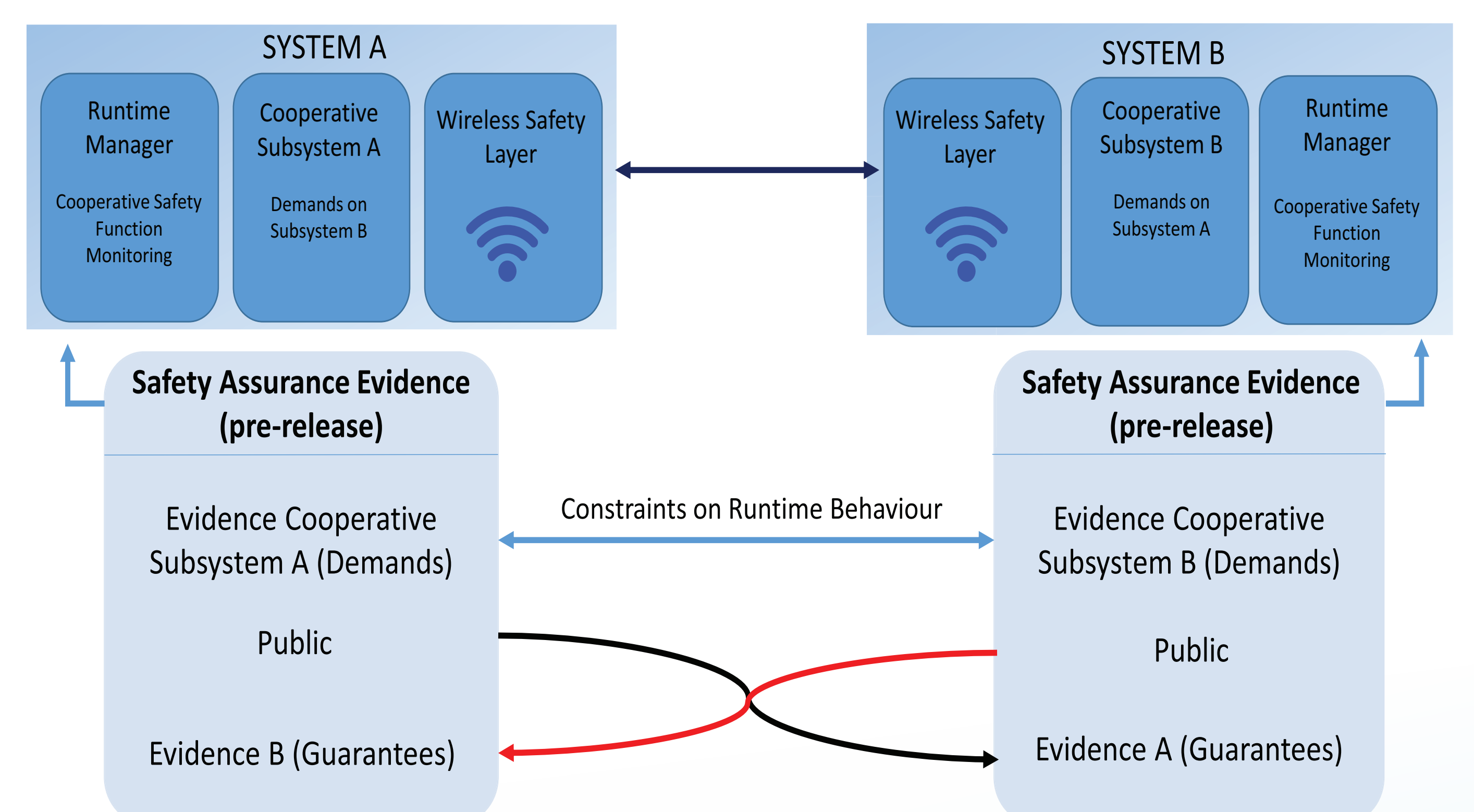
The project will provide:

- Lower certification costs
- Increased trustworthiness of wireless communication
- Better management of increasing complexity
- Reduced effort for verification and validation
- Lower total system costs
- Shorter time to market
- Increased market share

On the one hand SafeCOP develops and provides novel tools and methods contributing to the certification process. On the other hand, these tools and methods go beyond the certification and allow quantifying how safe CPS are under different security premises. The dissemination of such quantification methods from science to the certification stakeholders in the industry provides for clear and justifiable protocols in the decision making process.

Technical Innovation

SafeCOP will provide an approach to the safety assurance of CO-CPS, enabling thus their certification and development. The project will define a platform architecture and will develop methods and tools, which will be used to develop safety assurance evidence needed to certify cooperative functions. SafeCOP will extend current wireless technologies to ensure safe and secure cooperation. SafeCOP will also contribute to new standards and regulations. The consortium is supporting by providing certification authorities and standardization committees with the scientifically validated solutions. Valuable tools needed to craft standard extensions to address cooperation and system-of-systems issues.



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23M€

Participating organisations
28

Number of countries
6

