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Titel des Beitrags: Towards Trusted Apps platforms for open CPS

Abstract: For many cyber-physical systems, there is a strong trend towards open systems, which can be extended during operation by instantly adding functionalities on demand. We discuss this trend in the context of automotive and medical systems. The goal of this paper is to elaborate the research challenges of new platforms for such open systems. A main problem is that such CPS apps shall be able to access and modify safety critical device internals. We present results of the TAPPS (Trusted Apps for open CPS) project, which develops an end-to-end solution for development and deployment of trusted apps. The main approach is to devise different execution environments for highly-trusted CPS apps. We present the architecture approach and its key components, and methods for CPS apps, including tool chain and development support.

Stichworte: cyber-physical systems; open systems; safety-critical software; CPS apps; TAPPS; automotive systems; cyberphysical systems; medical systems; open CPS; open systems; safety critical device internals; tool chain; trusted apps platforms; Automotive engineering; Computer architecture; Electronic mail; Hardware; Real-time systems; Security; Vehicles; architecture; cyber-physical-systems; open-source; real-time systems; trusted apps

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