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# Platforms4CPS

**Key Outcomes and Recommendations** 





Haydn Thompson, Meike Reimann (Lead Authors) Platforms4CPS



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### **Executive Summary**

Europe has key strengths in the CPS domain with many world leading companies in important business sectors such as Automotive, Aerospace, Rail, Energy and Health, as well as supporting technology and research providers in terms of SMEs and academia. This document summarises the findings of the Platforms4CPS project, co-financed by the European Commission under the H2020 Research and Innovation Programme, to identify business opportunities, develop a CPS Community Roadmap, a Technology and Research Radar and make recommendations for strategic action required for operational and future deployment of Cyber-Physical Systems (CPS). In order to exploit the business opportunities highlighted in this report, recommendations are provided for Research, Innovation, Societal, Legal and Business challenges, that need addressing to ensure that:

- The right technology areas are supported
- There is successful transfer of new ideas to European companies via innovation mechanisms
- Societal concerns which are barriers to uptake of new technologies such as trust, privacy, regulation, liability, and security of employment are addressed
- European citizens can rely on trustable systems

In the shorter term these can begin to be addressed under Horizon 2020 and existing Digitising European Industry activities via engagement with and expansion of the Digital Innovation Hubs, linking PPPs to work in synergy and supporting the development of platforms and large-scale pilots in key domains such as Automotive, Agriculture, Medicine, etc. Further in the future the recommendations address Horizon Europe linking with developing ideas within the Commission such as the Edge 2030 vision.

### Key needs identified for the future

- Increase digital capacity and capability through Digital Innovation Hubs
- Enhance multi-disciplinarity, cross-fertilisation (application domain & engineering domain)
- Foster collaboration, European coordination and defragmentation across Europe
- Support large-scale demonstrators in key areas, e. g. autonomous driving, etc.
- Tackle the issue of the confused landscape of business support for SMEs
- Explore CPS enabled business models and business services, facilitate access of SMEs
- Provide help to SMEs in allaying fears that are significant barriers to adoption, such as risks around cybersecurity
- Encourage the development of common standards to connect different technologies
- Establish a "Science of Design for CPS"
- Address the skills shortage, particularly in digital engineering capabilities and encourage systematic engagement between education and industry to encourage life-long learning and reskilling to avoid a future digital divide
- Revitalise EU engineering education, raise the status of engineering embracing multi-disciplinarity and incorporate CDIO (Conceive Design Implement Operate) ideas to provide T-shape (broad and deep) education considering that around two-thirds of children in primary school today will work in jobs which do not even exist yet
- Ensure that European citizens can rely on European supplied trusted systems