



UNIVERSITY OF TARTU
Institute of Computer Science

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Doctoral Consortium

Towards More Secure and Data Protective Intelligent Infrastructure Systems

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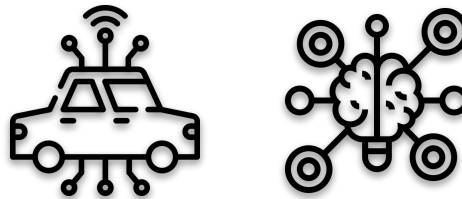


Context

Hyperconnectivity & for smart solutions ⇒ systems of systems
in eGov, eHealth,
Intelligent transportation

Intelligent Infrastructure (II) systems

- heterogeneous components
- composition enables delivering new value proposition
- non-compositional nature of SoS



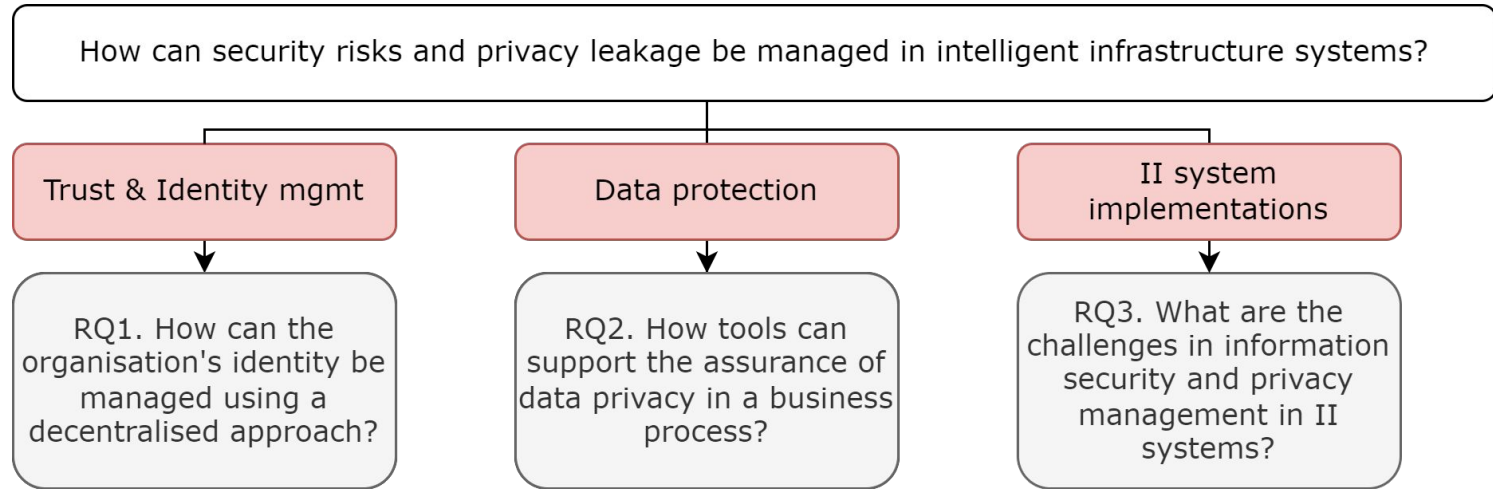
Problem

Do classical information security & privacy management approaches match new context?



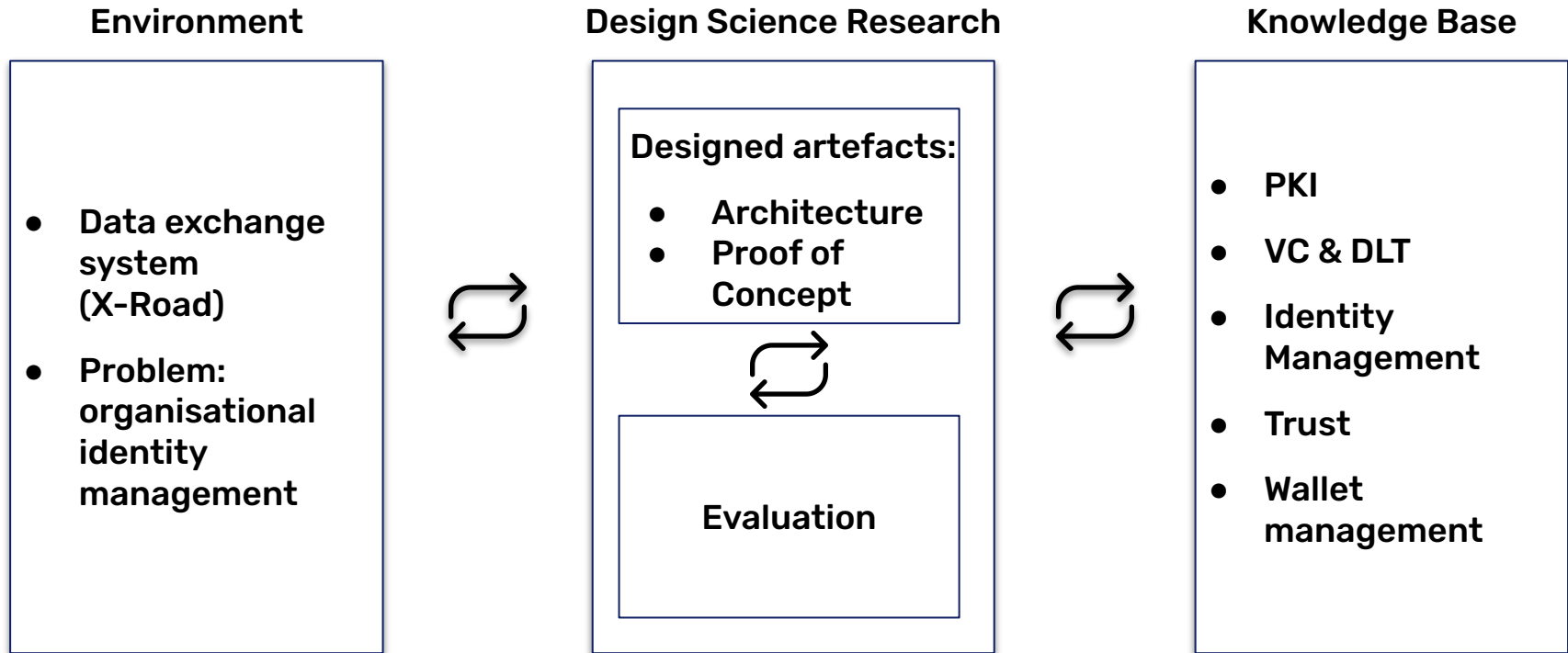
RQ: How can security risks and privacy leakage be managed in intelligent infrastructure systems?

Problem decomposition



Trust & Identity Management

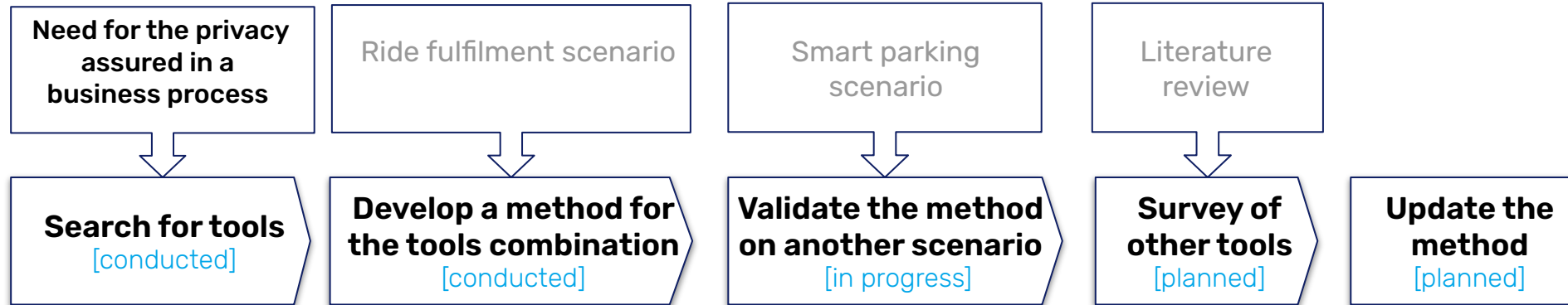
RQ1: How can the organisations' identity be managed using a decentralised approach?



Data protection & privacy assurance

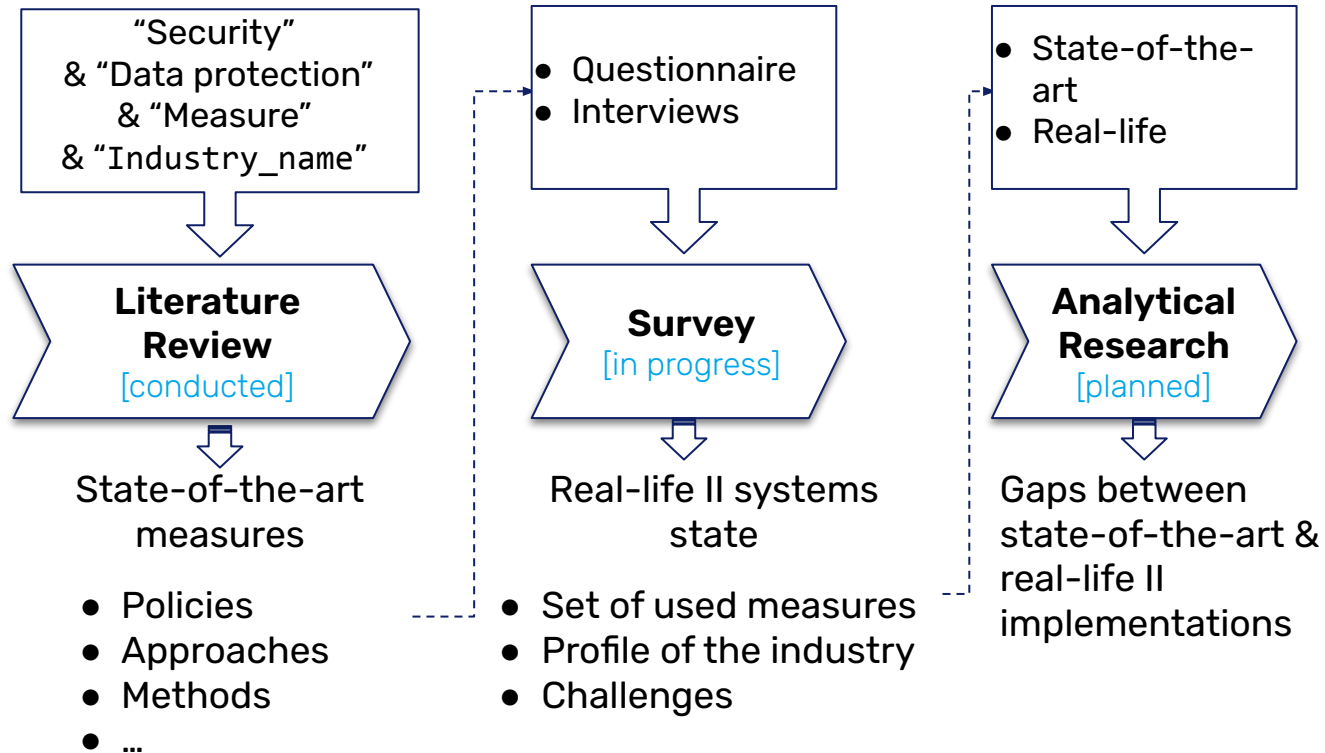
RQ2: How can tools support the assurance of privacy in a business process?

II systems relies on the sensitive data -> ensure privacy

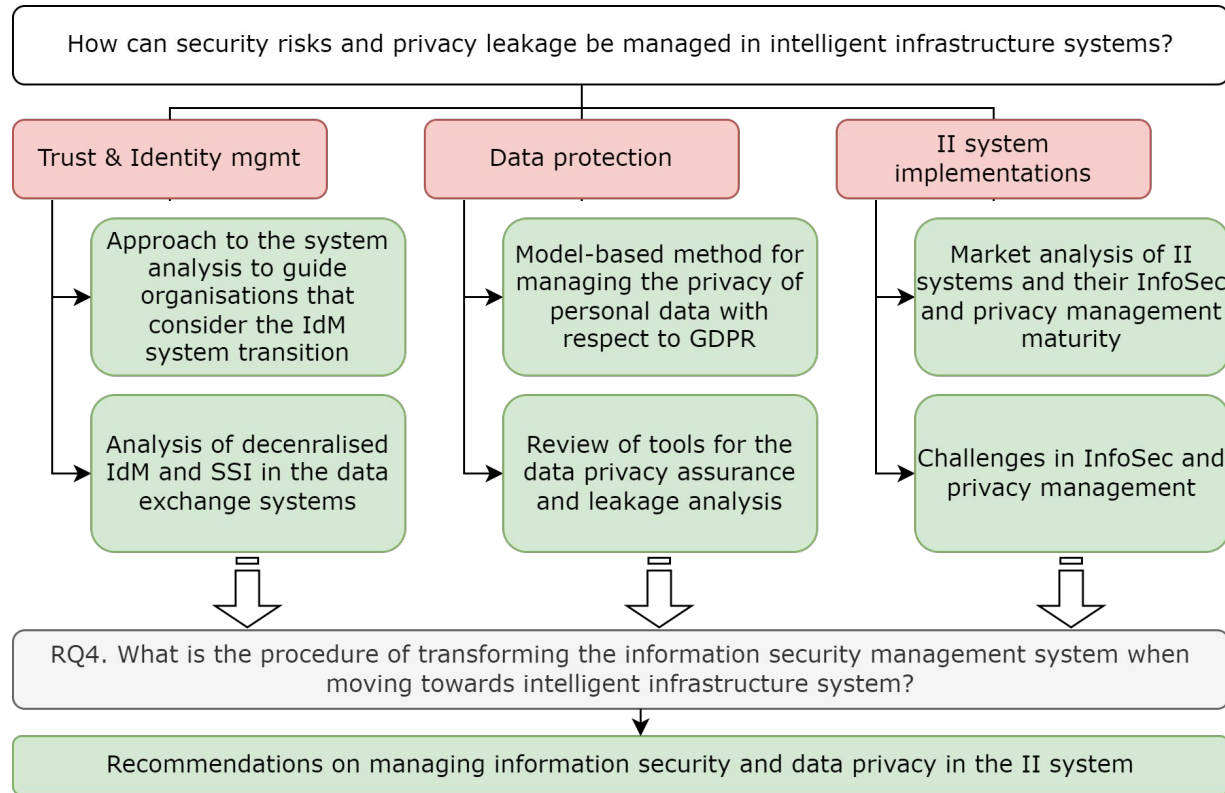


Current State & Challenges in II systems

RQ3: What are the challenges in information security and privacy management in II systems?



Recommendation for II systems



European Union Agency for Cybersecurity, C. Skouloudi, R. Dede, A. Malatras, R. Naydenov, Guidelines for securing the internet of things : secure supply chain for IoT (2021).

Peffers, Ken, et al. "A design science research methodology for information systems research." (2007)

Conclusion

Expected contributions:

- Challenges of security risks and data protection in the intelligent infrastructure systems
- Recommendation on changing SRM and data protection measures when shifting to II systems



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Thank you for attention!

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