

Digital Product Passports for universal access to circularity and sustainability information


, A. . . , E.


SUPSI DTI, Viganello, Switzerland


EcoWise Ekodenge Ltd., London, United Kingdom


WEEE Forum a.i.s.b.l., Brussels, Belgium

Agenda

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01 Digital Product Passport to access Sustainability & Circularity information
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02 Focus on Circular Critical Raw Materials information
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03 Focus on Life Cycle Sustainability information
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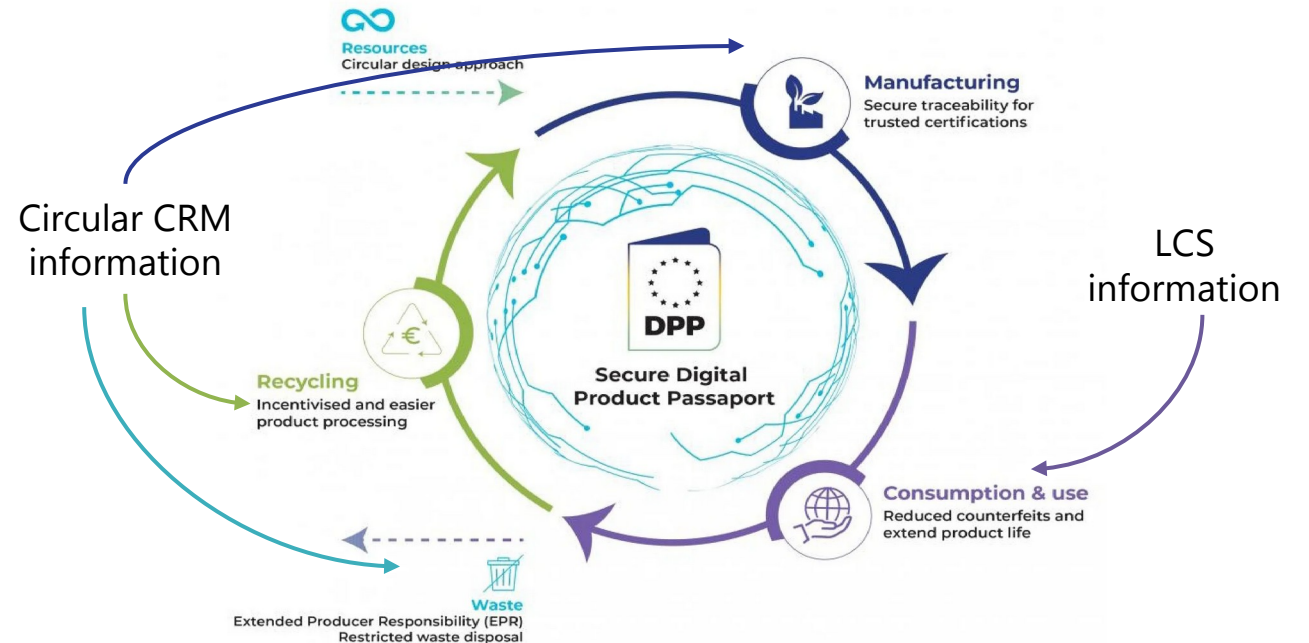
04 Conclusions & Next Steps

Digital Product Passport (DPP)

DPP provides information about products' sustainability accessible by scanning a data carrier. It should help consumers and businesses make informed choices when purchasing products, facilitate repairs and recycling and improve transparency about products' life cycle impacts [EU's Eco-design for Sustainable Products Regulation].

Goal of the study – to provide the design of DPP systems enabling two scopes:

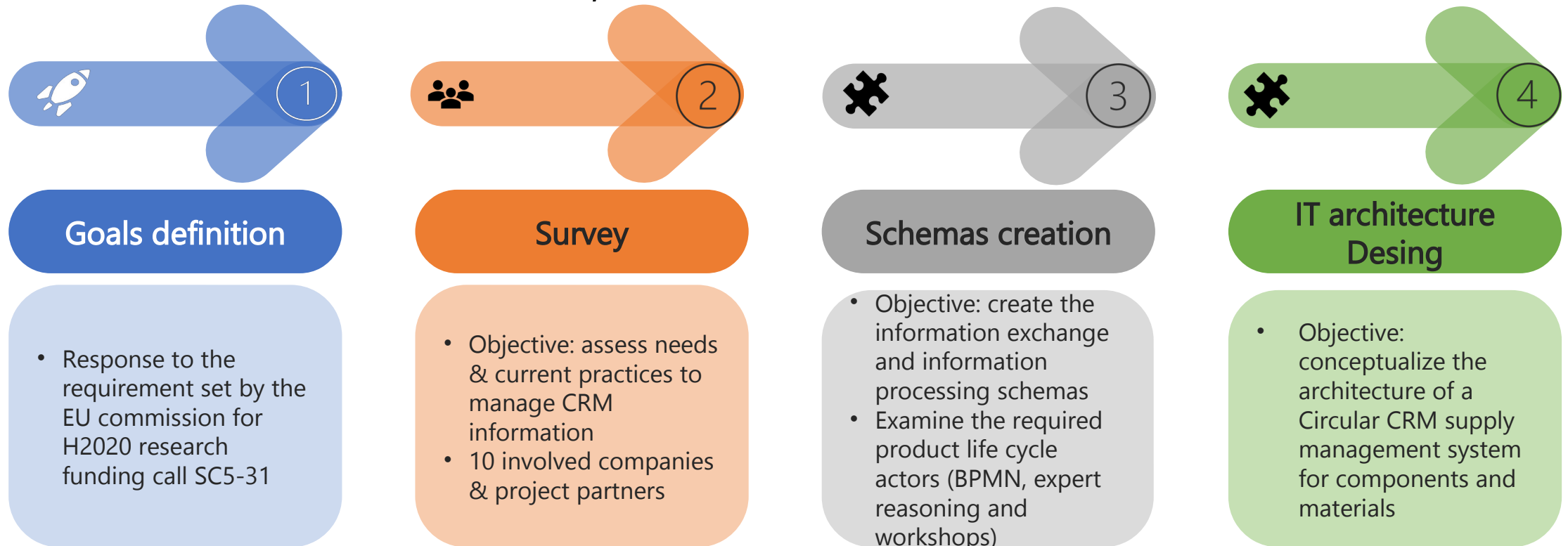
- Sharing **Critical Raw Materials (CRM)** information for reuse operators and recyclers
- Disclosing **Life Cycle Sustainability (LCS)** information for consumers



DPP scope (1): Circular CRM Information

Objective: sharing Circular CRM information for reuse operators and recyclers


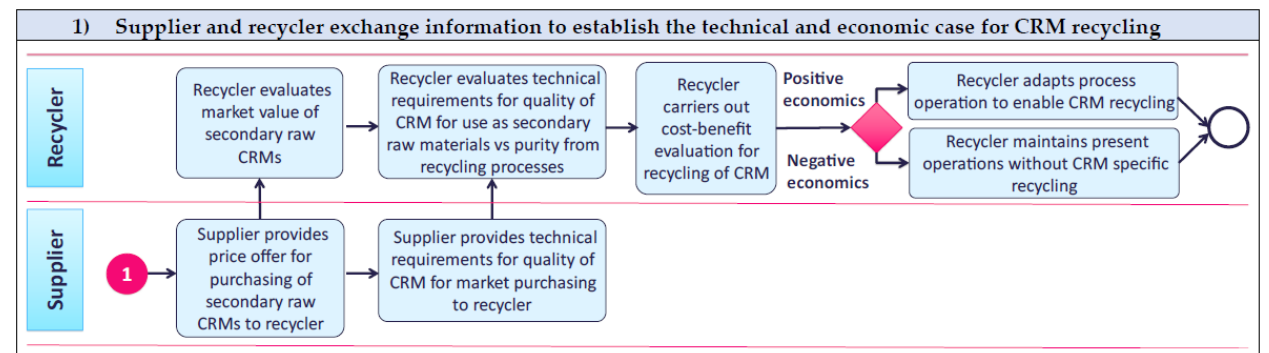
Implementation framework



DPP scope (1): Circular CRM Information

Main **results** of the study:

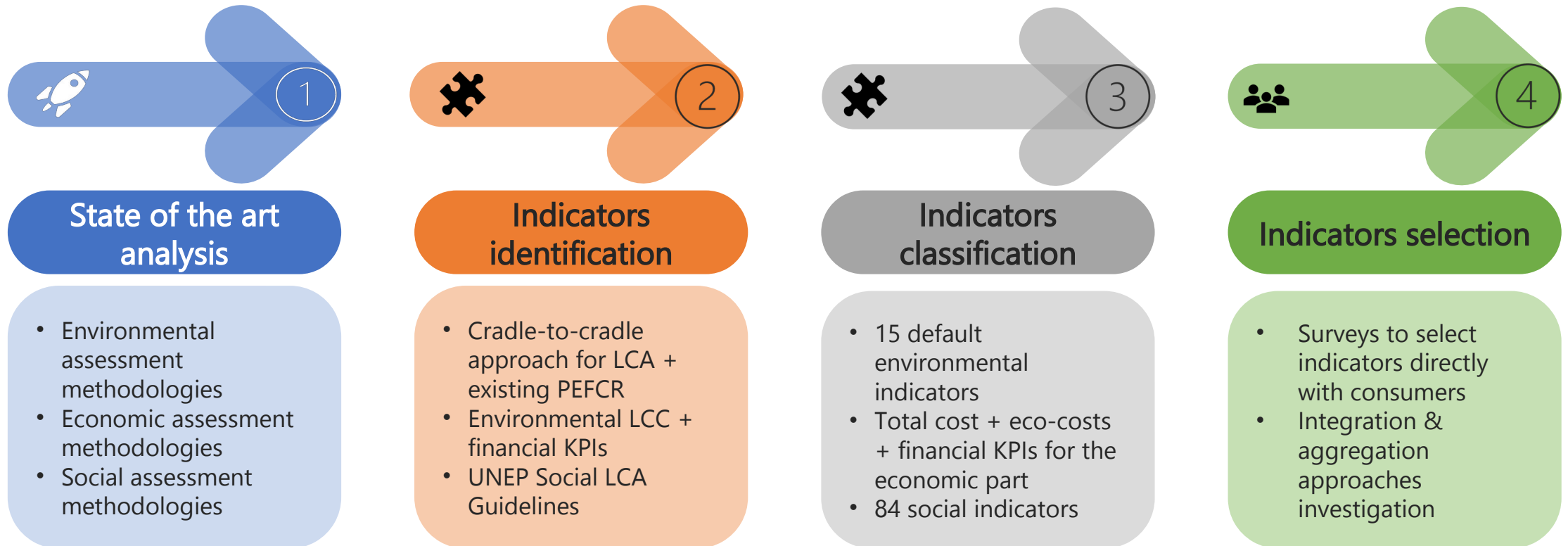
- Development of **workflows** between life cycle actors & IT systems (published in a paper):
 - **12 workflows** to specify the information exchange for **Circular CRM supply management system**;
 - **2 workflows** to specify the information exchanges for enhancing disassembly processes for CRM component recovery.
- Development of the system **Architecture** for the workflows, based on a shared **DataSpace** between manufacturers and recyclers.

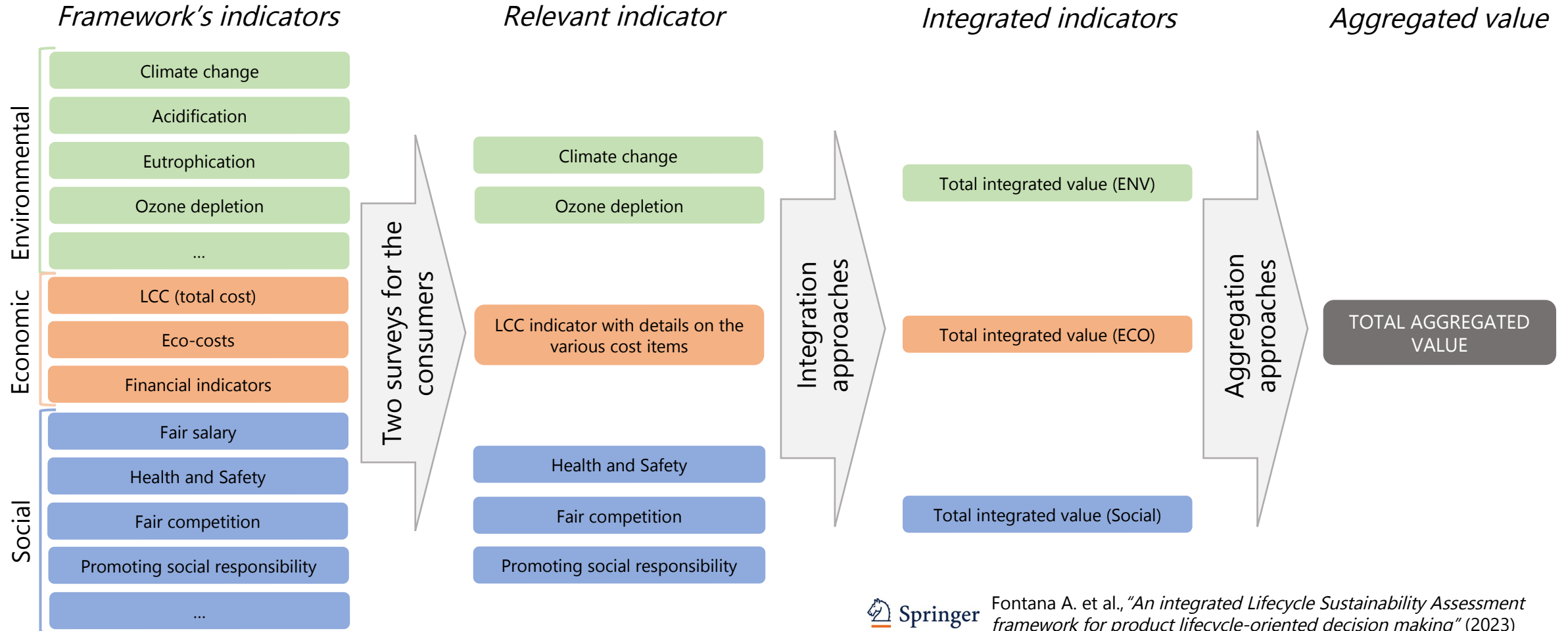
DPP scope (2): LCS Information

Objective: disclosing Life Cycle Sustainability for consumers

Implementation framework



DPP scope (2): LCS Information



Fontana A. et al., "An integrated Lifecycle Sustainability Assessment framework for product lifecycle-oriented decision making" (2023)

Conclusions

BENEFICIAL POINTS

- 1 Creation of the sustainability reference framework
- 2 European initiative and recognized guidelines-based framework
- 3 Creation of the reference architecture for CRM information processes
- 4 Improving trust and security

CRITICAL POINTS (& possible next steps)

- 1 Many indicators: the selection of indicators can vary greatly depending on the consumers surveyed
- 2 Need to standardize the sustainability framework
- 3 Need to standardize the architecture for the CRM information processes
- 4 Need to deepen the technical design of the IT architecture

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Authors: Deborah Leone, Alessandro Fontana, Rembrandt Koppelaar, Eniko Hajósi

Presented by: Deborah Leone
deborah.leone@supsi.ch

Thank you for your attention