An ArchiMate Extension for Modelling the Alignment of Services and Information in Smart City Architectures

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1 Motivation and Objectives

❑ Traditional business-IT alignment approaches do not consider the specific concepts of smart cities to align services and information. This causes that city services do not meet the citizens' needs.
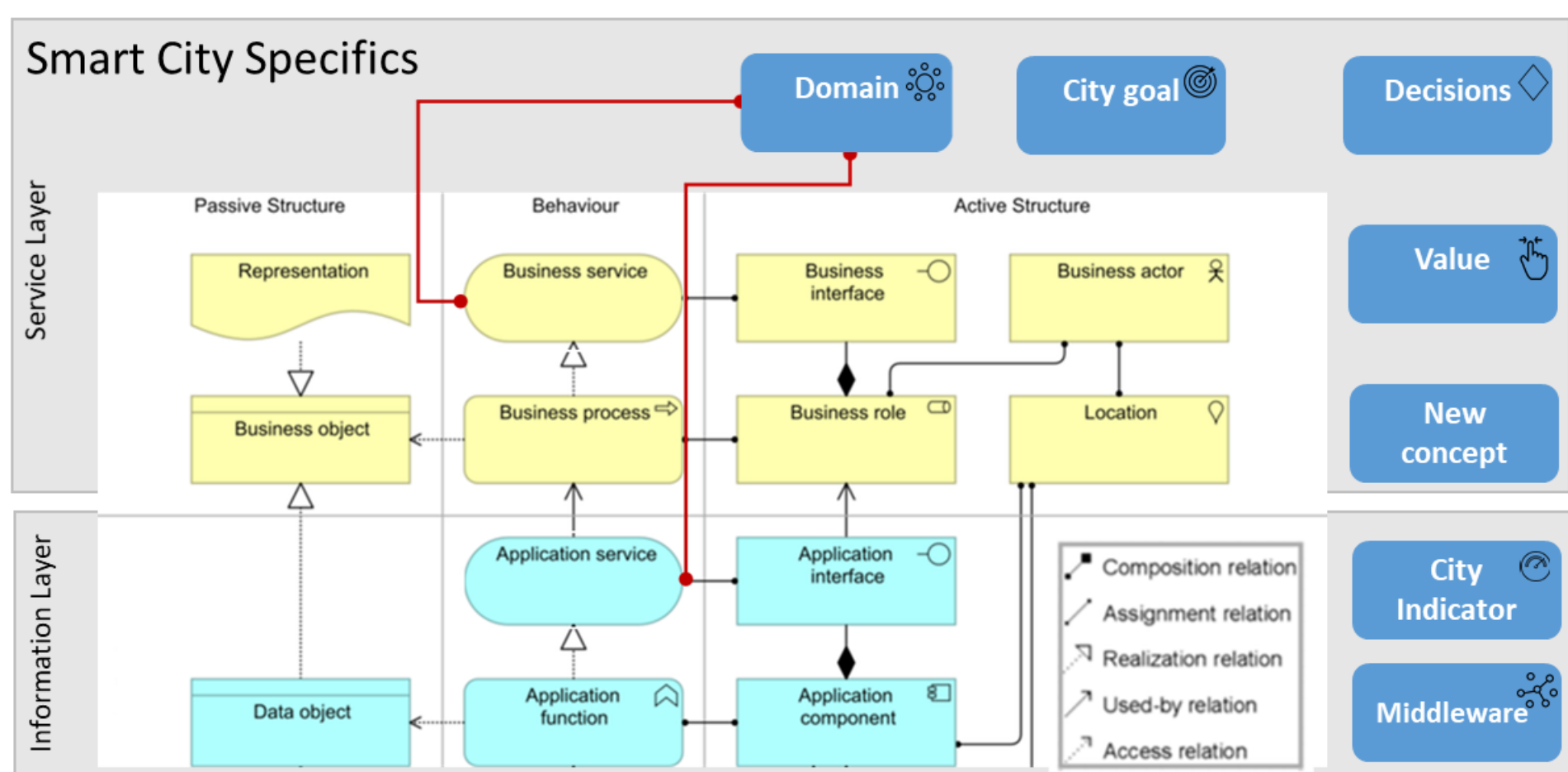

Fig 1: Specific of Smart Cities to Ensure the Alignment

Objectives

❑ Identifying the principles to address the alignment

❑ Extending the ArchiMate language to model the specifics of smart cities in order to ensure the alignment

❑ Providing results of the application and evaluation of the proposed ArchiMate extension

2 Findings

❑ A review of smart city architecture frameworks based on the architectural concepts of TOGAF metamodel

❑ A requirements framework for the design of smart city reference architectures

❑ Design of architectural diagrams of smart city services for Limerick City & County Council
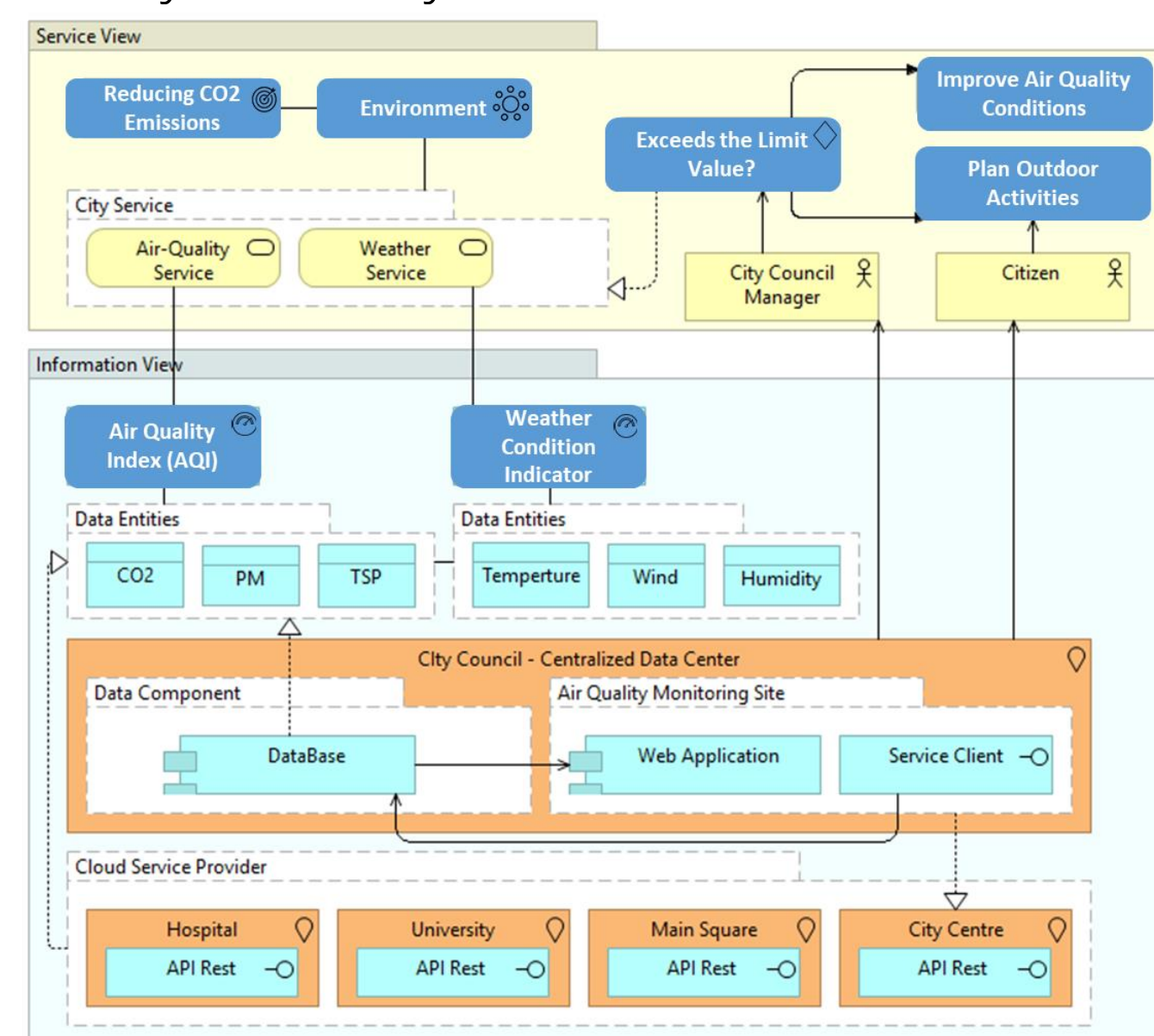

Fig 2: Service and Information Model Sample

❑ Identification of the design principles for addressing the alignment

3 Methodology and Evaluation

❑ This research follows Design Science Research methodology (DSR). Limerick City & County Council is a case study used to explore and identify the connection between the service and information layers
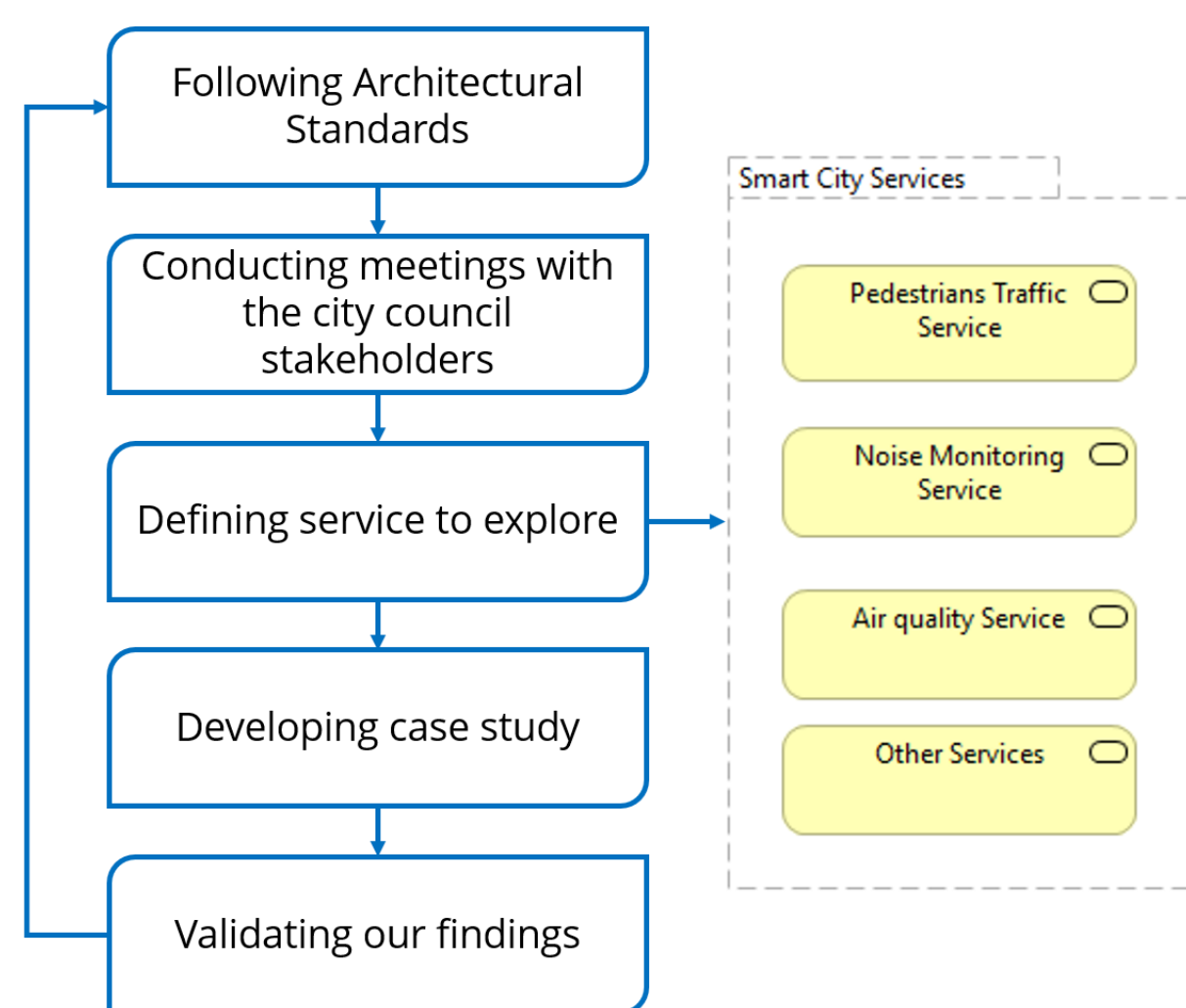

Fig 3: Methodology and Evaluation

Architectural Standards

❑ Apply Enterprise Architecture (EA) approach to align and integrate strategy, people, services, and information

❑ Include aspects from Architecture standards such as IEEE (1471) and ISO/IEC (42010)

4 Future Work

❑ Appling and evaluating the proposed extension of ArchiMate based on the defined design principles to ensure the alignment
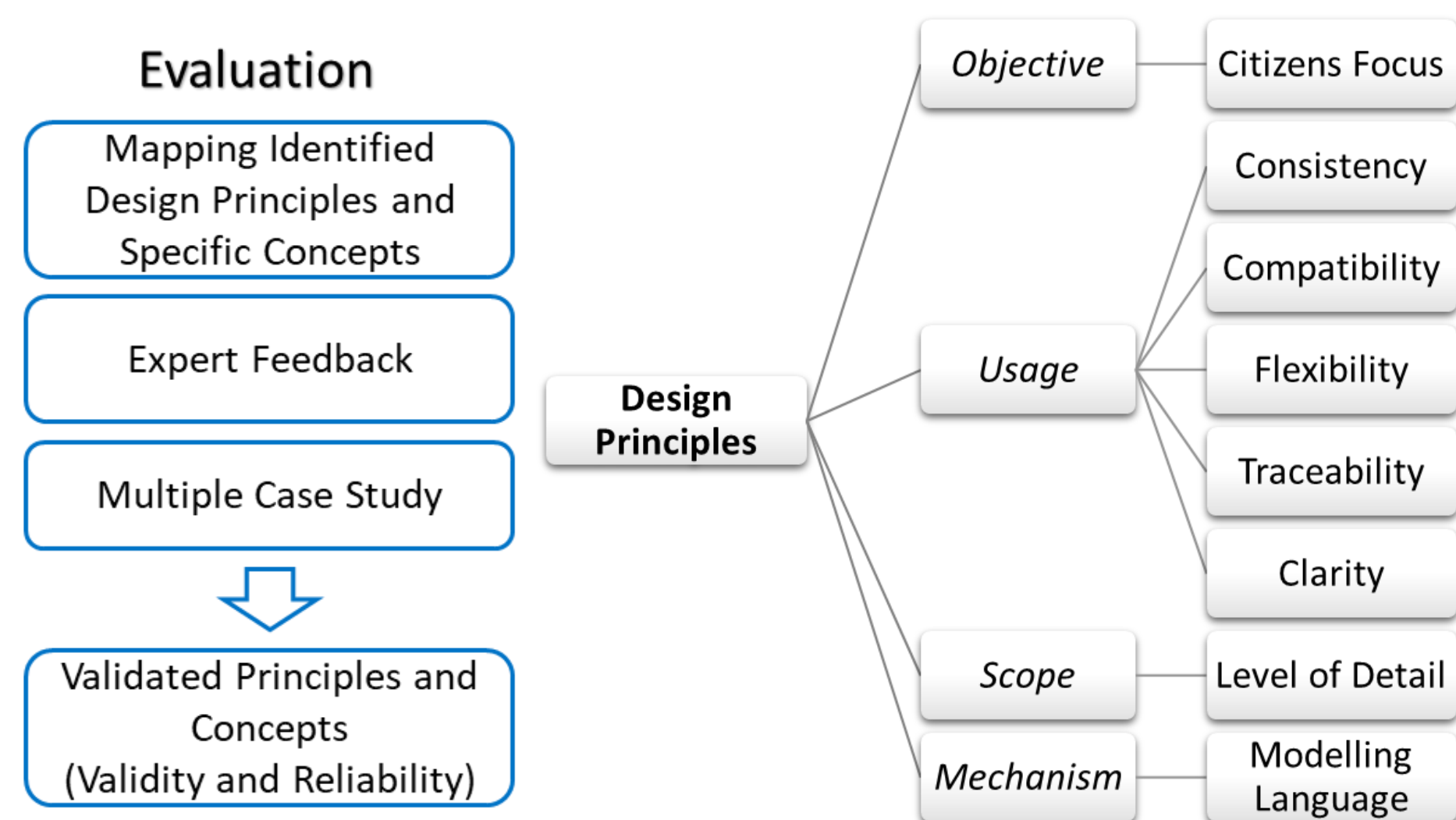

Fig 4: Application and Evaluation

References

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