

Smart City Architectural Metamodel

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1 Motivation and Objectives

- » Smart city architectures provide services based on information and technology. However, the alignment between them and the city strategy is missing

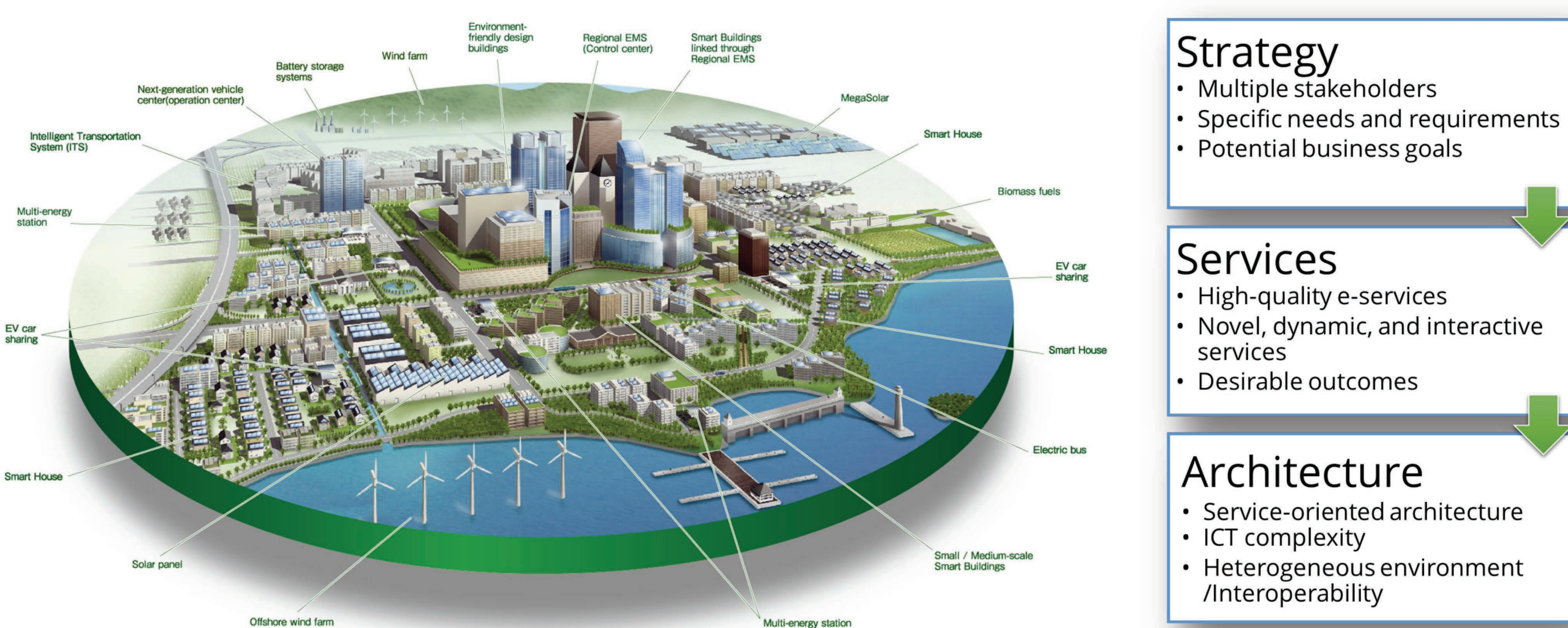


Fig 1: Smart City Strategy, Services and Architecture

» Objectives

- » Apply Enterprise Architecture approach based on the strategic plan of the city and needs of the citizens
- » Define a Metamodel to specify core components and to align smart city strategy with architectural layers
- » Model architectural views using Archimate

2 Findings

- » Comparison of Smart City Frameworks based on Enterprise Architecture core requirements
- » Core requirements and relations between layers are still absent

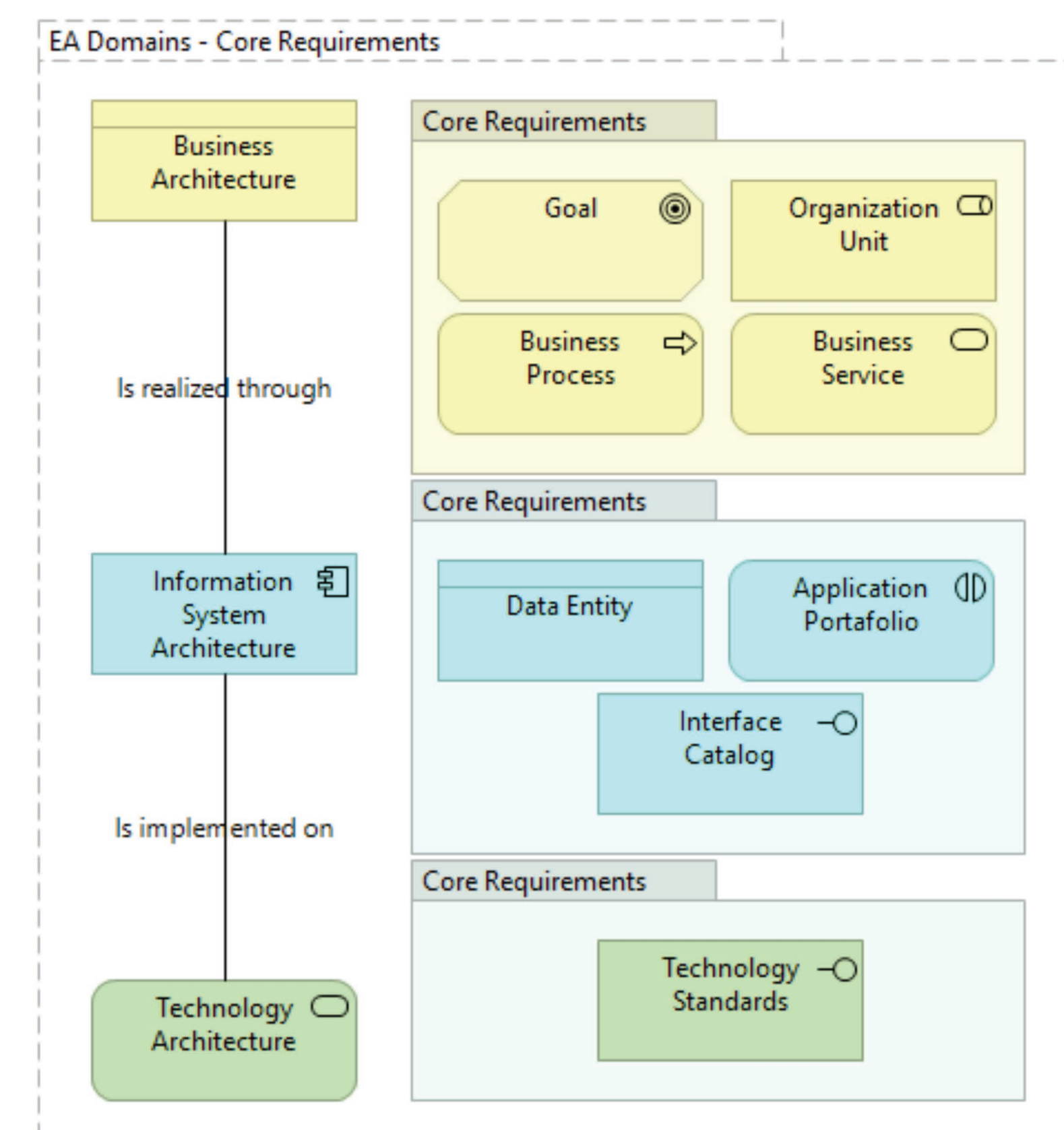


Fig 2: TOGAF Content Metamodel

- » TOGAF Content Metamodel specifies core requirements which are essential to model architecture components and to establish relationship between these components

3 Methodology and Evaluation

- » Case study (Limerick City & County Council) to explore and identify the connection between service, information and technology layers

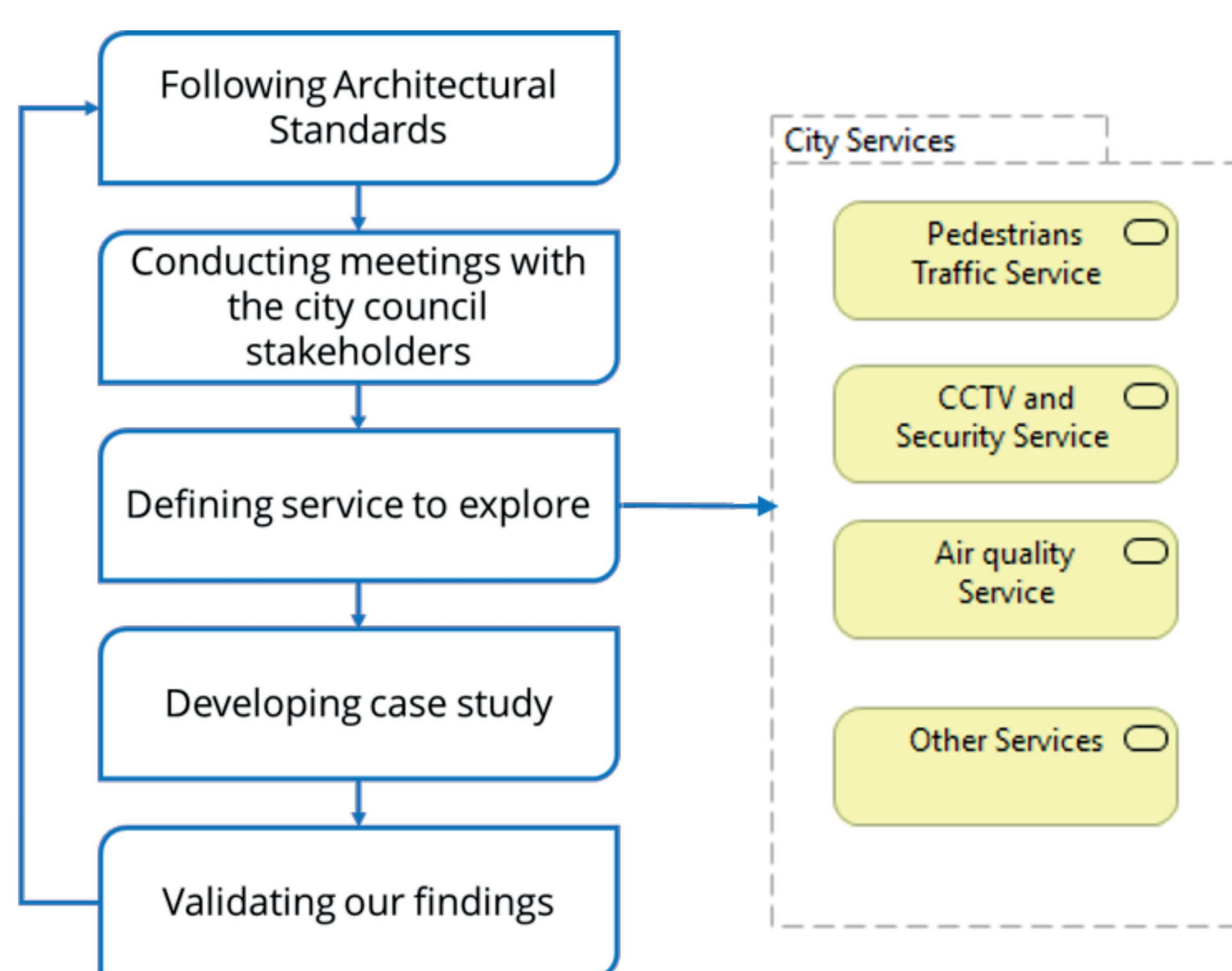


Fig 3: Methodology and Evaluation

» Architectural Standards

- » Apply Enterprise Architecture (EA) approach to align and integrate strategy, people, business and technology
- » Include aspects from Architecture standards such as IEEE (1471) and ISO/IEC (42010)

4 Future Work

- » Defining relations between services and information: Data sharing. (Metamodeling architectural concepts)
- » Defining requirements for an effective smart city reference architecture

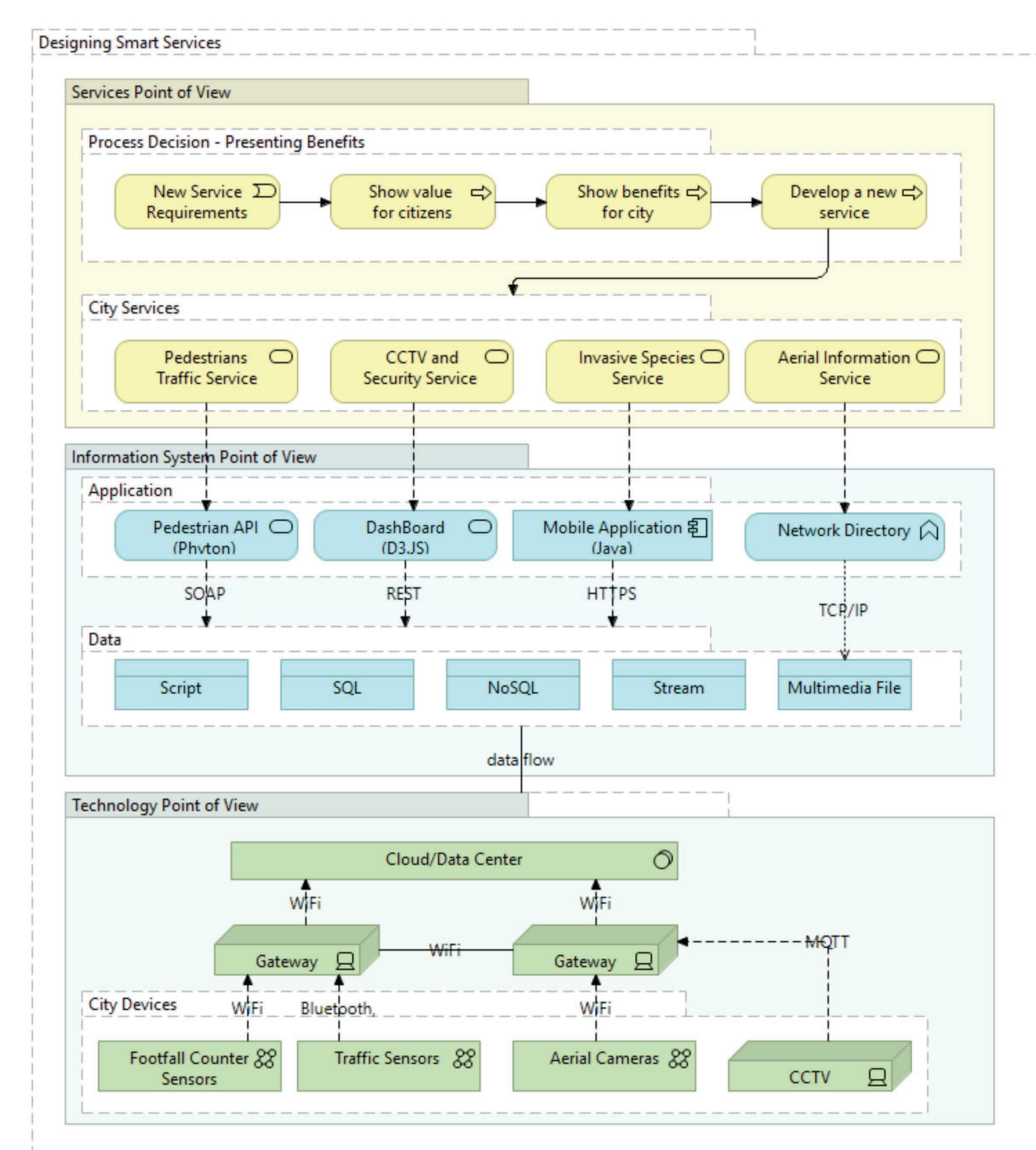


Fig 4: Service Architecture - Example

References

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- » Mamkatis, A., Bezbradica, M., Helfert, M.: Urban enterprise: A review of Smart City frameworks from an enterprise architecture perspective. IEEE 2nd Int. Smart Cities Conf. Improv. Citizens Qual. Life, ISC2 2016 - Proc. 1-9 (2016)