
**Framework for integration and
operation of smart community
infrastructures —**

**Part 2:
Holistic approach and the strategy
for development, operation and
maintenance of smart community
infrastructures**

*Cadre pour l'intégration et l'exploitation des infrastructures
communautaires intelligentes —*

*Partie 2: Approche holistique et stratégie pour le développement,
le fonctionnement et la maintenance des infrastructures
communautaires intelligentes*



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Foreword

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Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

In the foreseeable future, urban density is likely to increase, resulting in further urbanization complexity. From this perspective, a “smart community” approach is an important concept to address the urban challenges by integrating different forms of infrastructures in a rational and efficient manner.

An important aspect of a smart community is integrating infrastructures as “a system of systems”. In addition to that, smart community has various stakeholders including users, and each smart community infrastructure has an extended scope lifecycle (See [Figure 1](#)). A major benefit of a system of systems is that the sector specific performance of all infrastructures can be validated with regard to their contribution to the overall goals of a community. As a result of this validation, these goals can be adapted and improvement targets for each infrastructure can be derived. Thus, an intended concept of a smart community being validated and updated through its lifecycle concerning the integration and operation of smart community infrastructures is realized efficiently at all times (See [Figure 2](#)).

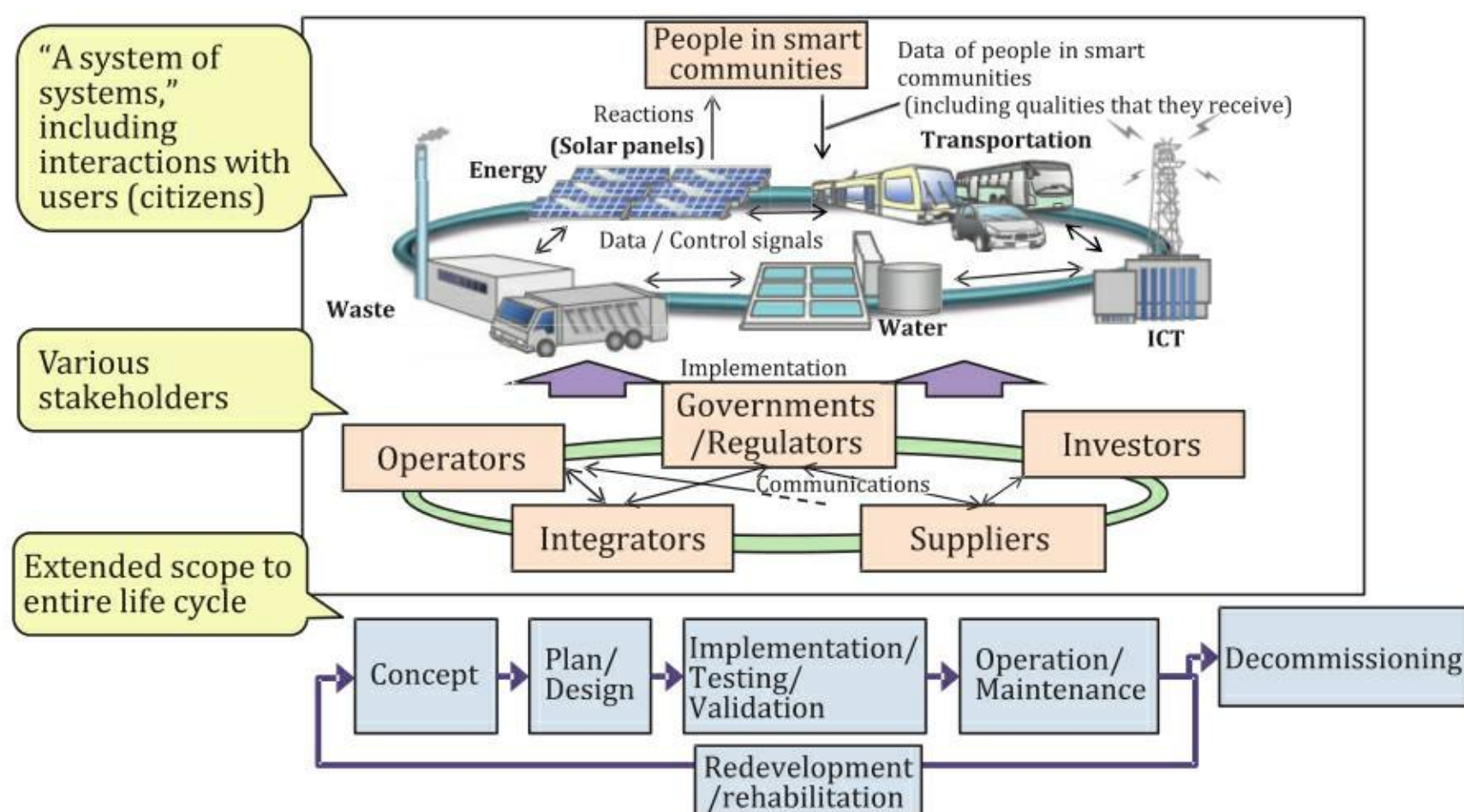
Until now, it has not been possible to ensure consistency across infrastructure types to meet the requirements for smart community infrastructures as owners have focused on just assembling solutions to each subsystem of infrastructures. In order to ensure consistency of the specification of smart community infrastructures as a whole, firstly, functions of each subsystem need to be clarified and arranged based on the needs for a smart community, and secondly, the perspectives of various stakeholders and lifecycle of infrastructures need to be considered.

To solve the above issues and realize well-functioning smart community infrastructures as a whole, infrastructure development and operation processes are expected to include a common framework, as described in ISO/TR 37152, composed of three elements (See [Figure 3](#)):

- element (A), allocation of consistent specification requirements to each component of a system and validation of the allocating procedures;
- element (B), specification requirements associated with interaction and adoption of adequate measures into planning and operation;
- element (C), process to facilitate information sharing and communication among stakeholders.

On conducting the study, it was found that each stakeholder will have various benefits through applying this framework. (See [Clause 5](#))

This document provides the guideline to realize element (A), providing guidelines for specification to ensure consistency of smart community infrastructure and to adopt adequate measures into planning and operation. Part 1 is about element (B).



NOTE The infrastructures, stakeholders and lifecycle phases pictured in this figure are only some of the examples. Other infrastructure, such as urban agricultural system, might also be included.

Figure 1 — Characteristics of smart community infrastructure

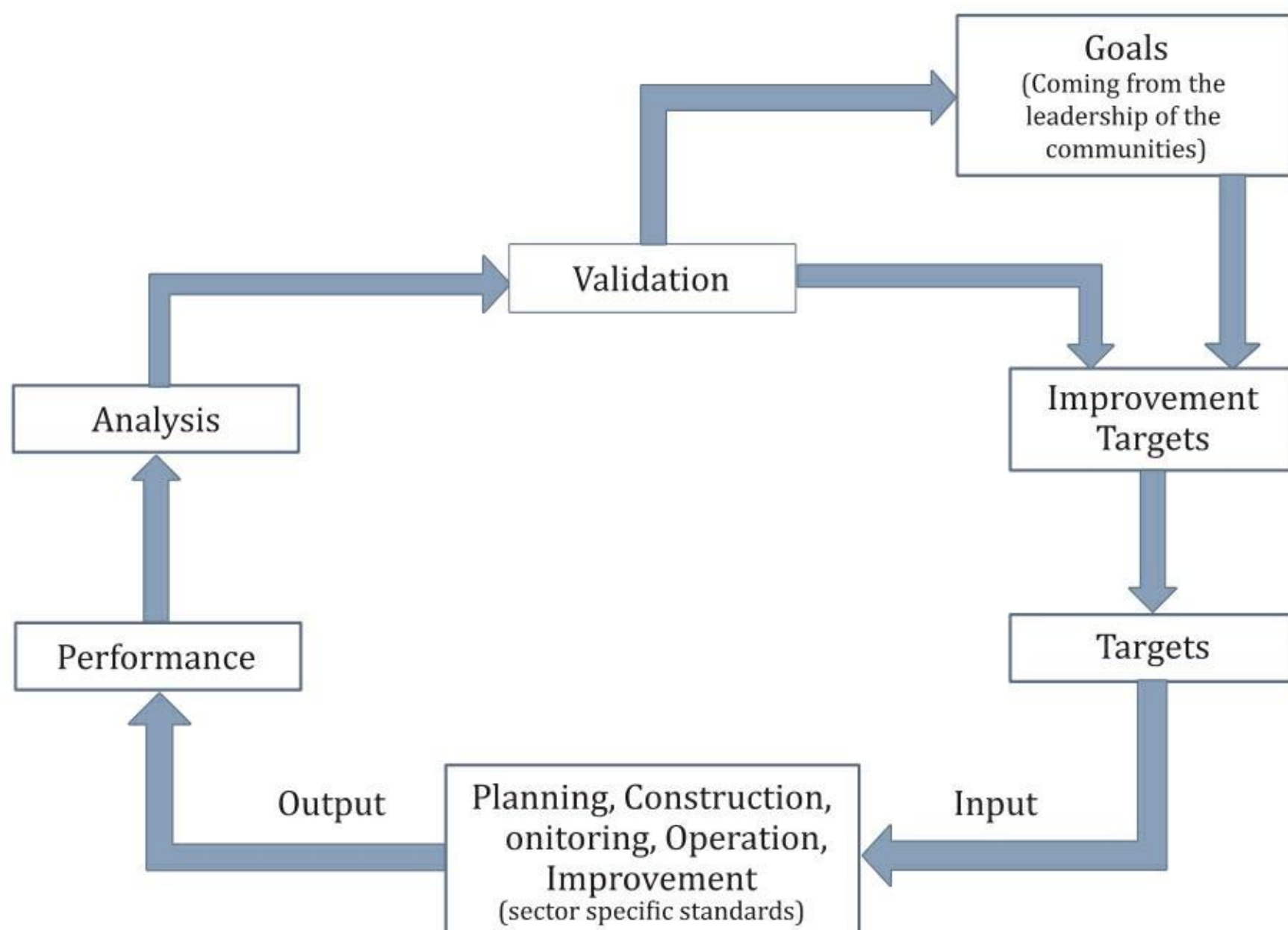


Figure 2 — Workflow of a system of systems concerning integration and operation of smart community infrastructures

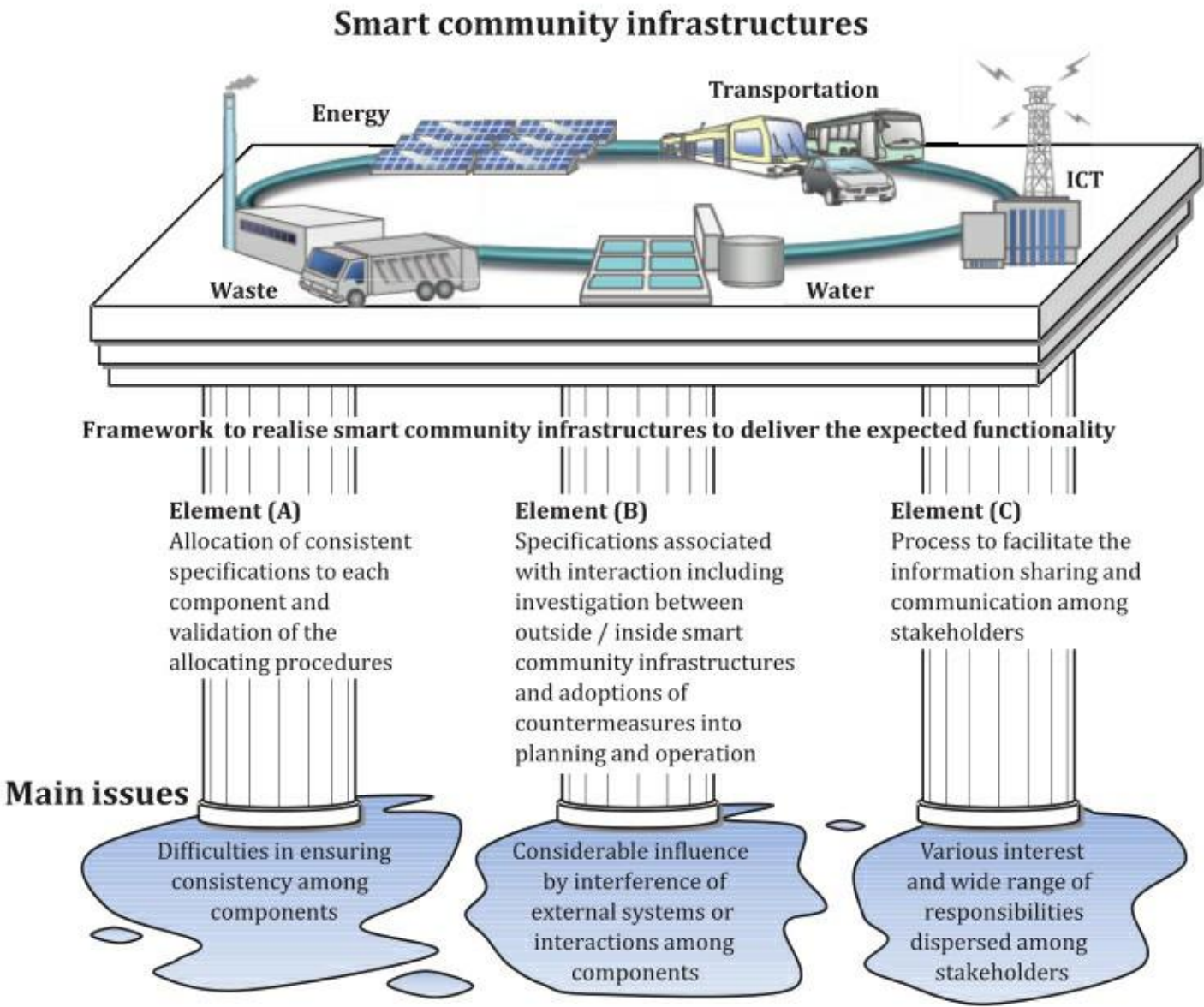


Figure 3 — Three elements of the framework