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

Part 1:

**Recommendations for considering
opportunities and challenges from
interactions in smart community
infrastructures from relevant aspects
through the life cycle**

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

*Partie 1: Recommandations pour la prise en compte des opportunités
et des défis découlant des interactions dans les infrastructures
communautaires intelligentes, des aspects pertinents tout au long du
cycle de vie*



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A list of all parts in the ISO 37155 series can be found on the ISO website.

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

Urban density is likely to increase for the foreseeable future, resulting in further urbanization complexity. From this perspective, a “smart community” approach is an important tool for addressing such urban challenges by integrating different forms of infrastructure in a rational and efficient manner.

An important aspect of a smart community is integrating infrastructures as “a system of systems”. In addition, a smart community has various stakeholders, including users, and each smart community infrastructure has extended scope life cycle (see [Figure 1](#)).

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.

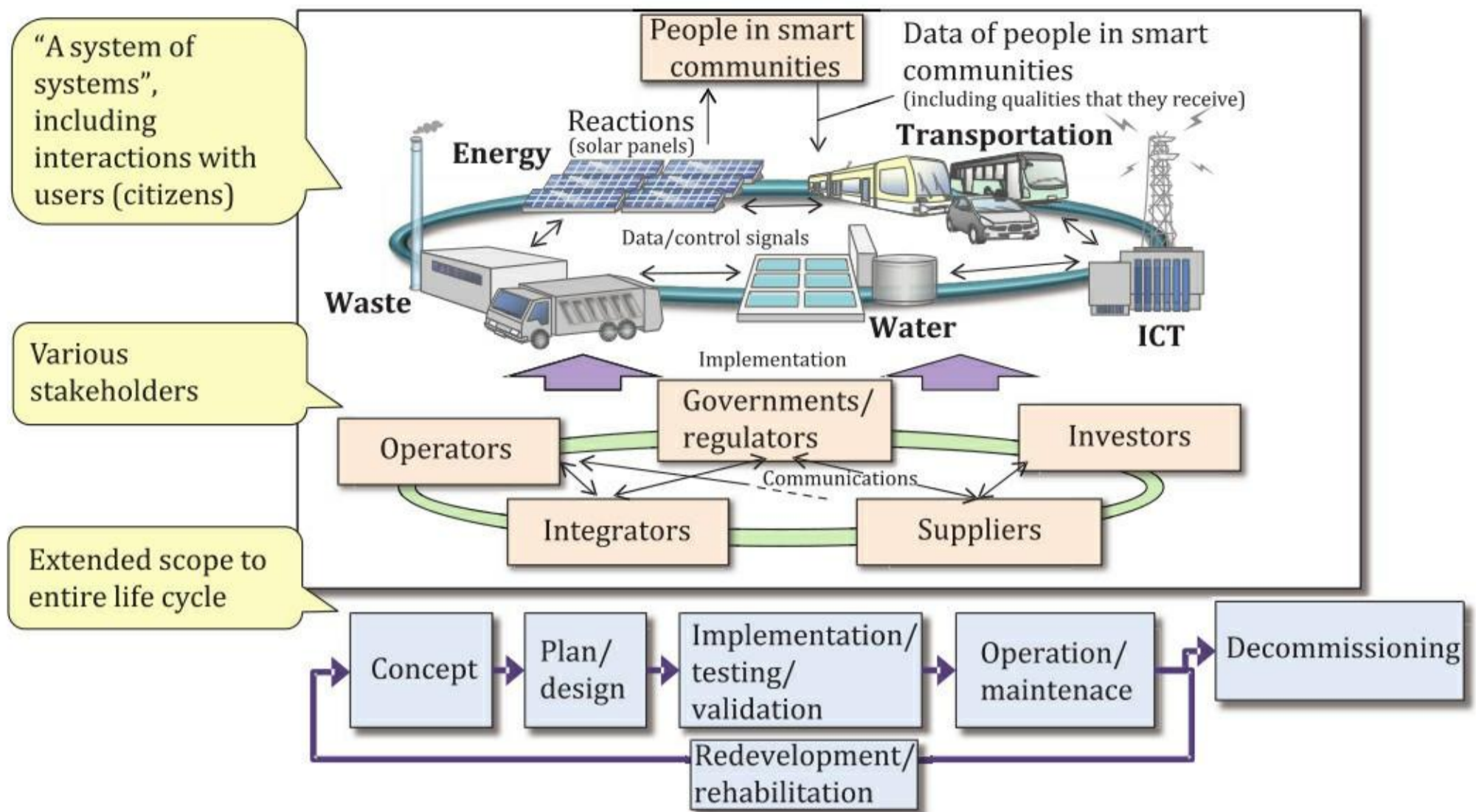
In order to ensure consistency of the specification of smart community infrastructures as a whole, firstly the functions of each subsystem need to be clarified and arranged based on the needs of a smart community. Secondly, the perspectives of various stakeholders and the life cycle of infrastructures need to be considered.

To solve these 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 2](#)):

- 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 a study, it was found that all stakeholders will benefit from applying this framework (see [Clause 5](#)).

This document provides guidelines for realizing element (B), providing specification requirements to manage interactions and to adopt adequate measures into planning and operation. Parts 2 and 3 in the ISO 37155 series will be about elements (A) and (C), respectively. Should it be required, a guidelines document will be developed to support Parts 1 to 3.



NOTE The infrastructures, stakeholders and life cycle phases pictured in this figure are only examples. Other infrastructures, such as an urban agricultural system, could be included.

Figure 1 — Characteristics of a smart community infrastructure

Smart community infrastructures

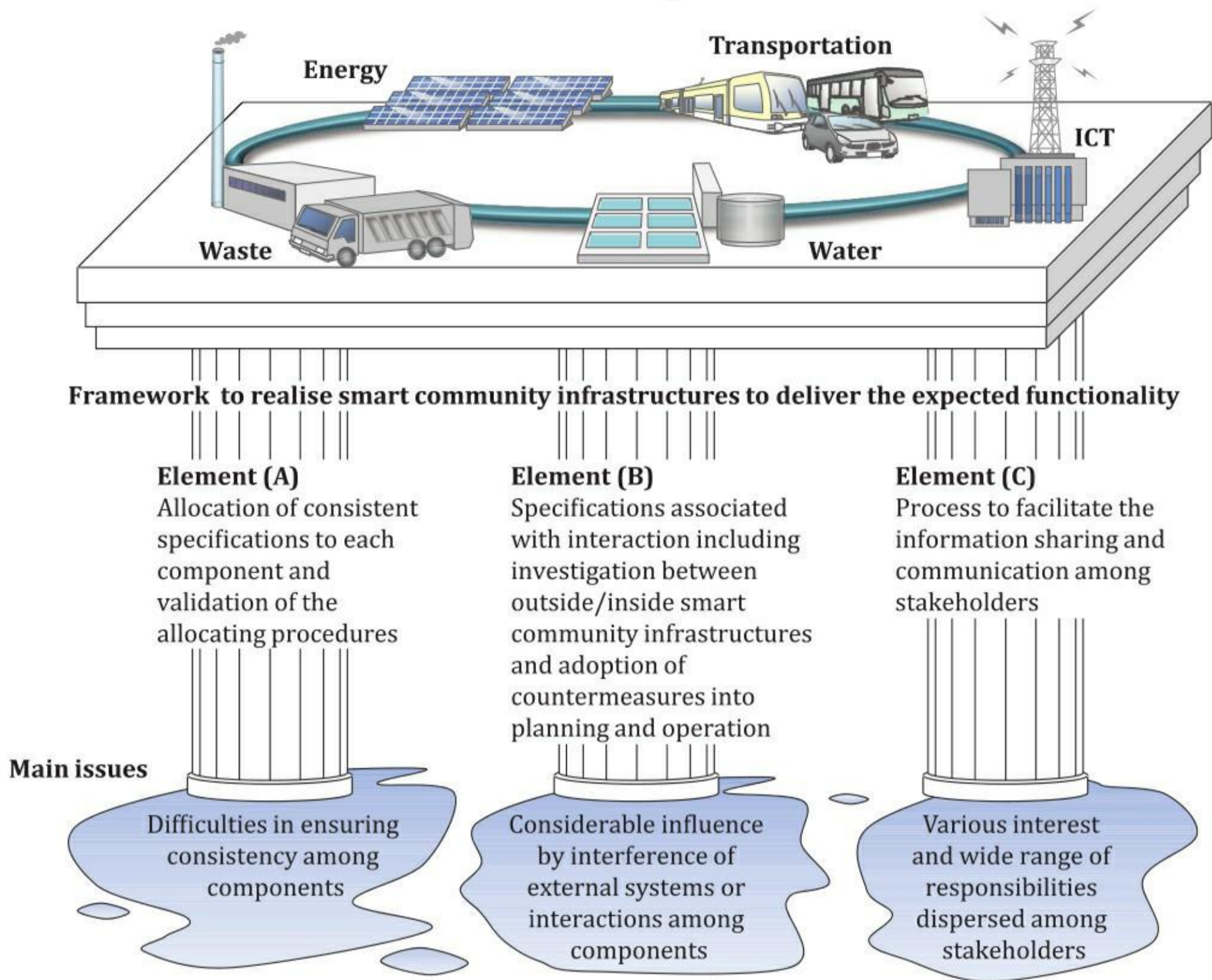


Figure 2 — Three elements of the framework