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Smart community infrastructures — Common framework for development and operation

Infrastructures urbaines intelligentes — Cadre commun pour le développement et les opérations

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Foreword

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The committee responsible for this document is Technical Committee ISO/TC 268, *Sustainable development in communities*, Subcommittee SC 1, *Smart community infrastructures*.

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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 such 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". 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 smart community infrastructures as a whole, first, 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.

Thus, a new framework is needed to develop a procedure followed by all stakeholders in order to establish an orchestration function of each smart community infrastructure component and to achieve information sharing as well as consensus amongst the stakeholders.

For this purpose, ISO/TC 268/SC 1/AHG 1 "Common framework for development and operation of smart community infrastructures" was established to conduct preliminary studies to develop international standards to formulate a framework which realizes well-functioning smart community infrastructures as a whole, considering their characteristics, i.e. "a system of systems", having various stakeholders, and long lifecycle. These standards will formulate technical procedures for stakeholders to achieve their accountability in developing, operating and maintaining smart community infrastructures as a system of systems. This document presents the results of the study conducted in the AHG. The framework aims to ensure consistency between smart community infrastructures without overlapping with existing work (see Figure 1). It incorporates the metrics as a KPI of the development, operation and maintenance methodology.

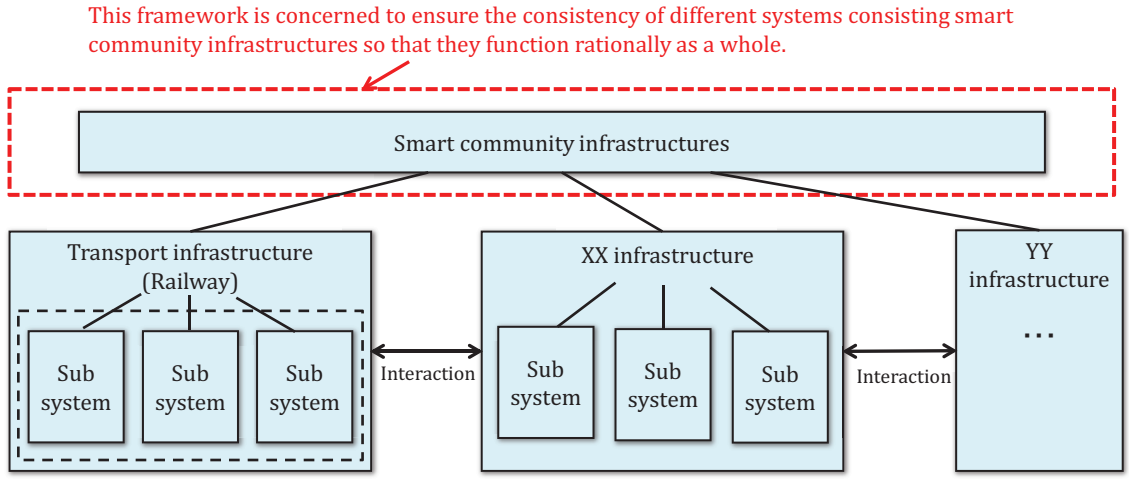

Figure 1 — Scope of the framework

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