
**Smart community infrastructures —
Data framework for infrastructure
governance based on digital
technology in smart cities**

*Infrastructures urbaines intelligentes — Cadre de données pour la
gouvernance des infrastructures fondée sur la technologie numérique
dans les villes intelligentes*



Contents

	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 General	2
5 Database	3
5.1 Geospatial data.....	3
5.1.1 General.....	3
5.1.2 Geospatial framework data.....	3
5.1.3 City unit grid data.....	3
5.2 Event data.....	4
5.2.1 Event classification.....	4
5.2.2 Event data coding.....	4
5.2.3 Event data attributes.....	4
5.3 Operation data.....	4
5.3.1 Overview.....	4
5.3.2 Event handling process data.....	4
5.3.3 Evaluation data of event handling results.....	4
5.4 System operation supporting data.....	5
5.4.1 Overview.....	5
5.4.2 User authentication configuration data.....	5
5.4.3 Regional configuration data.....	5
5.4.4 Organization configuration data.....	5
5.4.5 Workflow configuration data.....	5
5.4.6 Grid administrator configuration data.....	5
5.4.7 Map-related configuration data.....	5
5.4.8 Configuration data of data dictionary item.....	5
5.5 Metadata.....	5
5.6 Data updating.....	6
6 Data platform and system	6
6.1 Data capture system.....	6
6.2 Filing system.....	6
6.3 Collaborative work system.....	6
6.4 Monitoring system.....	6
6.5 Geocoding system.....	6
6.6 Evaluation system.....	6
6.7 Application maintenance system.....	7
6.8 Basic data resource management system.....	7
7 Governance and applications	7
8 Data sharing, security and privacy	7
Annex A (informative) Case studies	8
Bibliography	11

Introduction

With more than half of the world's population living in cities, the city is the place where resources and economic and social activities are concentrated. As a space carrier for human beings in economic, social, cultural, and political activities, the city has become a source of technological innovation, an engine of economic growth, a platform for cultural development, a centre for decision-making, and a node for external connections. In the context of globalization, the city has become increasingly important. However, poor management of the city causes states of confusion and disorder, e.g. traffic congestion, environmental pollution, shortage and waste of resources, which is incompatible with sustainable development and the UN Millennium Development Goals.

City infrastructures are the foundation of city operations and the goal of city management, including municipal infrastructures, information and communications technology (ICT) infrastructures (see ISO/TR 37150). Information and digital technologies, e.g. mobile Internet, Internet of Things, and systems integration, provide a fundamental basis for infrastructure management. Based on digital technologies and systems, the digital city management framework can be expanded by integrating information, ICT and public facilities and services. Meanwhile, the city management database can be constructed by adopting various data bases from existing city data sources, e.g. environmental monitoring, traffic monitoring, energy supply, and demographic statistics. The collection and integration of various factors of city management will improve the data standardization and promote collaboration across departments and businesses. This can improve the service capabilities of city infrastructures and contribute to improving processes and services that facilitate and support liveability within the city. The specific practices of infrastructure governance will depend on the characteristics and actual demands of the city and considering protection of data privacy, public participation, the sovereignty of data.

This document provides a unified data framework of city infrastructure governance, underpinned by management and applications, security and privacy principles. This document is a reference for stakeholders and provides a data framework and system structures, which help city governments, enterprises, organizations and individuals participate in city activities and infrastructure governance.

NOTE [Annex A](#) outlines useful case studies of data framework for digital governance of infrastructure in smart cities.