



BSI Standards Publication

Smart community infrastructures — Best practice guidelines for transportation

National foreword

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**Smart community infrastructures —
Best practice guidelines for
transportation**

*Infrastructures territoriales intelligentes — Lignes directrices
relatives aux pratiques optimales pour le transport*



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Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Fundamentals	2
4.1 Basic ideas and goals.....	2
4.2 Location and objective for the development and installation of transportation infrastructures to provide smart transportation solutions.....	3
4.2.1 General.....	3
4.2.2 Location where transportation infrastructures should be installed to achieve smart transportation solutions.....	3
4.2.3 Objectives for smart transportation infrastructures.....	4
4.3 Consideration of city planning.....	5
5 Selection of transportation modes, features and services for smart transportation solutions in communities	6
5.1 General.....	6
5.2 Selection criteria.....	6
5.2.1 General.....	6
5.2.2 Parameters to be considered in the selection of public transportation modes.....	6
5.2.3 Subsidization to transportation operating business.....	6
5.2.4 Transportation mode.....	7
5.2.5 Technical and business contents of transportation modes.....	7
5.2.6 Services provided by transportation.....	9
5.2.7 Feasibility of transportation business.....	12
6 Application of selected transportation features and services	12
6.1 General.....	12
6.2 Conditions for transportation features.....	12
6.3 Conditions for transportation services.....	12
6.3.1 General.....	12
6.3.2 Services in the same transportation mode.....	12
6.3.3 Inter-modal services.....	13
6.3.4 Services on interfaces between public and private transportation.....	13
6.4 Monitoring of the performance of smart transportation.....	14
7 Optimization of transportation services, features and modes along with generation and social trend changes	14
7.1 General.....	14
7.2 Optimization of transportation services for current and future communities.....	14
7.3 Holding/discarding transportation features used for currently existing communities.....	14
7.4 Reselection of transportation modes used for currently existing communities.....	14
Annex A (informative) Potential or expected smart transportation performance or features	16
Annex B (informative) Example of relationship between two parameters used to select suitable transportation modes in cities	22
Annex C (informative) Examples of smart transportation used to develop compact cities	23
Bibliography	24

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 268, *Sustainable cities and communities*, Subcommittee SC 1, *Smart community infrastructures*.

Introduction

A well-functioning community infrastructure, of which energy (power), water and wastewater, solid waste disposal, information and communications technology and transportation are essential elements, is critical to the quality of life and economic productivity of any city or human settlement. Transportation plays a highly visible role in the lives of residents, ensuring people can get to work, engage in social activities, take part in commerce and access cultural institutions and any other amenity the city offers. In addition, transportation networks are needed for the distribution of goods throughout a city or region. Inadequate or poorly designed transportation systems can create significant economic costs from lost productivity, environmental impacts and health problems.

The features and services provided by such infrastructures are intended to assist people in communities with their businesses and lives, and to help stimulate activities to promote their businesses and enhance their lives by providing opportunities to come to, stay in and move within/outside communities. People do not want to spend all their time at home or in an office, even though improved information and communication technologies would bring them possibilities to do business or take action anywhere they like and anytime without moving. There is more to life than just business supported by electronic communication. People want to be able to move around independently and see, hear, touch, taste and smell directly what they have an interest in.

Transportation networks can be very complex, interweaving many different modes: by air, ship, ferry, train, truck and passenger vehicle, and by human-powered modes, like walking or biking. In particular, transportation serviced for intra-/inter-city communication by commuter rail, inter-city rail, high-speed rail, metro, trams, monorail, light rail transit, automated guideway transit systems, buses, trucks, ferries and air vehicles is popular and convenient for people, including the disabled, the elderly and those whose physical performance is declining, working or living in communities and coming to or out from there. This is because such means of transportation successfully convey passengers, delivery items and freight in large lots, punctually and at low cost, supported by established basic technologies that have developed over a long period and that are still being steadily improved even now. Cities need to have transportation systems that meet the needs of a diverse group of users, including commuters both within and outside the city, persons with disabilities and the elderly, and those shipping freight or other goods and parcels.

This document describes how transportation is planned, designed, implemented, operated, maintained and upgraded to take into account the points of view of different stakeholders, including the residents and governing authorities of communities, as well as the needs of the environment. This document also outlines minimum conditions to be respected in the performance of transportation systems, even after they have been installed, in order to realize the objectives of a smart transportation infrastructure, i.e. economically efficient transportation systems that meet or exceed user needs while minimizing environmental impact.

Decisions ranging from large-scale planning and investments to individual choices can shape the impact of transportation systems on a city. Decision makers need to think critically about transportation modes, as well as the features and services of those modes, to ensure the positive impacts of transportation infrastructure outweigh the potential negative impacts. In addition, given that populations and technologies change, decision makers need to monitor transportation systems to ensure that they continue to meet transportation goals. This document describes the smart transportation objectives and offers support for the development of integrated urban mobility plans, including the selection and application of transportation services.

Smart community infrastructures — Best practice guidelines for transportation

1 Scope

This document provides general guidance on the planning, design, development, organization, monitoring, maintenance and improvement process of smart transportation systems and infrastructures, which can help promote solutions for intra- and inter-city issues, i.e. for issues both within and outside the city that impact quality of life, the environment or any other areas of city performance. This document applies to transportation infrastructures used for the movement of people, freight or other goods, including items transported for delivery.

This document is intended for use by city planners and other community decision makers, government officials, insurance providers, investment and financing organizations, transportation operators and service providers and manufacturers of transportation equipment. In particular, this document is intended to be used by those involved in making decisions about transportation modes to meet the objectives related to affordability, convenience, low environmental impact and reliability, while satisfying the needs of a diverse group of stakeholders, including city residents, visitors, government authorities, transportation operators.

This document addresses smart transportation by considering the factors that shape communities, such as population, demographics, locations, local culture and history. It addresses the scope of services, features and objectives to be met through smart transportation solutions. This document does not contain technical specifications for the construction of transportation assets or facilities.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <http://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1

city issue

problem or challenge that negatively impacts the quality of life for residents, visitors and workers in cities, the environment or any other aspects of city performance

3.2

transportation mode

specific means by which passengers, freight or goods, including delivery items, move throughout a city or area

3.3

transportation feature

feature of transportation technologies

EXAMPLE A feature of a light rail transit (LRT) system is that it can transport a specified number of passengers each hour.