Technical Report

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Intelligent transportation systems — Energy-based green ITS services for smart city mobility applications via nomadic and mobile devices —

Part 1: General information and use case definitions

Systèmes de transport intelligents - Services STI écologiques basés sur l'énergie pour les applications de mobilité des villes intelligentes via des dispositifs nomades et mobiles —

Partie 1: Informations générales et définitions des cas d'utilisation

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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.

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Introduction

Environmentally friendly and energy-efficient mobility services have been deployed around the world to address rising urban energy problems caused by population growth, rapid climate change and increased energy use. While attempts are being made to combine technical solutions for transportation and energy use for improved energy efficiency, there are no traffic-energy-related guidelines that meet the various needs of diverse stakeholders in the transportation industry.

A smart city uses foundation technologies to manage energy efficiency. A smart city does this by measuring, metering and forecasting demand for energy, and by providing data platforms on the transport sector. These can be presented as management technology for solving urban problems.

An energy-based green intelligent transport systems (G-ITS) service provides users with customized services to meet their energy needs. The service does this by keeping users informed about their energy use and integrating management using nomadic devices to maximize energy efficiency.

This document considers the conversion of the existing efficiency and safety-oriented transportation system into a more energy-efficient system through the distribution of urban energy, allowing for improved management and energy consumption measurements.

Specifically, this document:

— identifies the general information of the applicable framework for energy-based green intelligent transport systems(G-ITS) services;

— identifies the method to describe the general information for all subjects related to energy-based G-ITS services interfaced with smart city cloud and charging infrastructure, with vehicle stations based on nomadic devices;

— specifies the general use cases for inclusion in energy-based G-ITS as services.

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Intelligent transportation systems — Energy-based green ITS services for smart city mobility applications via nomadic and mobile devices —

Part 1:
General information and use case definitions

1 Scope

This document provides a framework and information on the total amount of energy appropriate for the deployment of smart city mobility and energy efficiency technologies. These technologies can increase operational energy efficiency and unlock enhanced transportation waste-free energy applications, as well as measuring energy consumption.

The standard framework for energy-based green intelligent transport systems (G-ITS) builds on the best practices for energy efficient transport and management systems, as well as applications of intelligent transport systems (ITS), and aims to accommodate the specific needs of energy-based green ITS in smart cities.

G-ITS use data platforms to measure energy for transport and to forecast demand. A smart city provides G-ITS services to improve energy efficiency by using nomadic devices and by monitoring energy supply and demand.

This document describes the change in the traffic paradigm from the perspective of energy efficiency. It outlines:

— general information for energy-based G-ITS as a service using nomadic and mobile devices;

— use cases for energy-based G-ITS services using nomadic and mobile devices;

— use cases for energy-based mobility services, for example electric vehicles (EV), transportation infrastructure and other mobility services using nomadic devices.

2 Normative references

There are no normative references in this document.

3 Terms and definitions and abbreviated terms

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

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

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
nomadic device
ND
device that provides communications connectivity via equipment such as cellular telephones, mobile wireless broadband (e.g. WIMAX, HC-SDMA), WiFi, etc.

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