IEC SRD 63302-1

Edition 1.0 2025-04

SYSTEMS REFERENCE DELIVERABLE

Smart city use case collection and analysis – Intelligent operations centre for smart cities –
Part 1: High-level analysis

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 13.020.20; 03.100.70

ISBN 978-2-8327-0243-7

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

_____

SMART CITY USE CASE COLLECTION AND ANALYSIS – INTELLIGENT OPERATIONS CENTRE FOR SMART CITIES –

Part 1: High-level analysis

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
6) All users should ensure that they have the latest edition of this publication.
7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
9) IEC draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). IEC takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, IEC had not received notice of (a) patent(s), which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at https://patents.iec.ch. IEC shall not be held responsible for identifying any or all such patent rights.

IEC SRD 63302-1 has been prepared by IEC systems committee Smart Cities: Electrotechnical aspects of Smart Cities. It is a Systems Reference Deliverable,

The text of this Systems Reference Deliverable is based on the following documents:

Draft	Report on voting
SyCSmartCities/356/DTS	SyCSmartCities/369/RVDTS

Full information on the voting for the approval of this systems reference document can be found in the report on voting indicated in the above table.

The language used for the development of this Systems Reference Deliverable is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

A list of all parts in the IEC SRD 63302 series, published under the general title *Smart city use case collection and analysis – Intelligent operations centre for smart cities*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn, or
- revised.

INTRODUCTION

Digital solutions are accelerating the integration of real world applications in urban areas, including city governance, healthcare, environment, traffic, education, security and so on. However, many smart solutions are still implemented within single-domains. Isolated city services, data flows and data need integration. To be effective, the coordination of data and service requires an overarching framework coupled with an intelligent operations centre (IOC). The first step to identify solution options is by collecting and analysing relevant use cases.

IOC is tailored to provide urban managers, enterprises and citizens with access to operational and organized solutions. Based on city-level database and new technologies, such as big data, AI, cloud computing, blockchain etc., IOC processes city information and provides innovative services for urban managers, operators and other stakeholders. Compared with single-domain systems, IOC can better support monitoring and visualizing, decision making and cross-domain cooperation. IOC will play an important role in integrating city services such as police, health services traffic management and rescue services, including but not limited to the following methods.

a) The centralized operations dashboard and mobile application will allow real-time monitoring and information processing to improve response to emergencies.

b) The centralized and intelligent platform will enable noticeable improvements in the management of public safety, like crime prevention, emergency response, threat prevention and response, and traffic management.

c) The IOC's technologically advanced analysis, integrated communications, GPS and video surveillance capabilities will help residents and domain (energy, water, horticulture, waste and security) supervisors to collaborate in a smarter way.

d) The integrated data visualization, near real-time collaboration and deep analytics it provides will help agencies prepare for problems, coordinate and manage response efforts and enhance the efficiency of services,

e) IOC will enable residents to report issues such as broken street lights, electricity failure, water wastage, etc. and check resolution status using their mobile devices.

Currently, IOC solutions are being implemented in different cities around the world, and the stakeholders of these smart cities face similar challenges, including cross-domain cooperation, monitoring and visualizing, intelligent analysis, user-oriented experience, etc. The provision of standardization should be considered as one of key factors to support IOC development, including the development of the conceptual model, data exchange, IT infrastructures, services, and so on. This document focuses on collecting and analysing use cases from diversified areas, with the goal of developing consensus-based descriptions of IOC features and capabilities across all stakeholders, and uses this to scope out the standardization requirements related to the field of IOC.

SMART CITY USE CASE COLLECTION AND ANALYSIS – INTELLIGENT OPERATIONS CENTRE FOR SMART CITIES –

Part 1: High-level analysis

1 Scope

This part of IEC SRD 63302 provides use case collection and analysis, identifies the market relationships of relevant stakeholders, scopes out capabilities and a reference model of intelligent operations centre (IOC) for smart cities, and proposes the requirements for standards development in this field.

This document is for use by authorities, solution providers, utilities, citizens, and other relevant stakeholders, to identify good practices regarding IOC, and how they can implement them.

2 Normative references

There are no normative references in this document.