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Geographic information - Securing interoperability among heterogeneous city domain information models (ISO/TR 19174:2025)

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CEN ISO/TR 19174

June 2025

ICS 13.020.20; 35.240.01

English Version

Geographic information - Securing interoperability among heterogeneous city domain information models (ISO/TR 19174:2025)

Information géographique - Sécuriser l'interopérabilité entre des modèles d'information hétérogènes dans le domaine de la ville (ISO/TR 19174:2025)

Geoinformation - Sicherstellung der Interoperativität unter verschiedenen Stadtinformationsmodellen (ISO/TR 19174:2025)

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European foreword

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ISO/TR 19174

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Geographic information — Securing interoperability among heterogeneous city domain information models

Information géographique — Sécuriser l'interopérabilité entre des modèles d'information hétérogènes dans le domaine de la ville

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Foreword

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Introduction

Local governments are actively implementing various smart city services. The heterogeneity of private and public data generated from the smart city services is one of the major concerns standard development organizations (SDOs) are actively proceeding to solve for interoperability. Information modelling fields are moving towards integrated geospatial information environments, such as digital twins, cyber-physical systems and the meta-verse. These trends have produced new needs for standards in both private and public sectors that enable effective information sharing in terms of the geospatial context for smart city services. Building efficient and effective interconnectedness and sharing information between silo data models across domain fields and cities is one of the major concerns to make seamless smart city services operational.

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Technical Report **ISO/TR 19174:2025(en)**

Geographic information — Securing interoperability among heterogeneous city domain information models

1 Scope

This document analyses a feasible way to accommodate interoperability elements for the data component of a spatial data infrastructure (SDI) and extend the meta model framework for interoperability (MFI) in securing interoperability among heterogeneous domain information models under the smart city context.

This document:

a) outlines the interoperability issues for city domain information models;

b) reviews relevant standards and best practices and examines methodologies or solutions to tackle the interoperability issues;

c) supposes a use case and provides an example to secure interoperability among different domain information models using model registry;

d) specifies technical requirements in concern about how to apply the interoperability elements of the meta model framework to support the interoperability of smart city services;

e) highlights the standardization items to be developed to secure interoperability.

2 Normative references

There are no normative references in this document.

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