

	TECHNICKÁ NORMALIZAČNÁ INFORMÁCIA	TNI CEN/TR 15449-4 01 9344
---	--	---

Geografické informácie
Infraštruktúry pre priestorové informácie
Časť 4: Pohľad zameraný na služby

Geographic information
Spatial data infrastructures
Part 4: Service centric view

Táto technická normalizačná informácia obsahuje anglickú verziu CEN/TR 15449-4: 2013.

This technical standard information includes the English version of CEN/TR 15449-4: 2013.

Anotácia

V tejto technickej správe sa opisuje infraštruktúra pre priestorové informácie (IPI) z pohľadu zameraného na služby.

Pohľad zameraný na služby sa venuje konceptom špecifikácií služieb, metodike vývoja špecifikácií služieb pomocou aplikácie relevantných medzinárodných noriem a obsahu tých špecifikácií služieb, ktoré sú opísané z perspektívy nasledujúcich piatich hľadísk Referenčného modelu otvoreného distribuovaného spracovania (RM-ODS):

- podnikové hľadisko zamerané na aspekty služieb z organizačného, obchodného a používateľského pohľadu,
- počítačové hľadisko zamerané na aspekty služieb z pohľadu systémového architekta,
- informačné hľadisko zamerané na aspekty služieb z pohľadu odborníka na geopriestorové informácie,
- technické hľadisko zamerané na aspekty služieb z pohľadu návrhára systému,
- technologické hľadisko zamerané na aspekty služieb z pohľadu tvorcu a realizátora systému.

Táto technická správa je určená osobám zodpovedným za tvorbu rámcov pre IPI, odborníkom v rámci INSPIRE, expertom v informačných a komunikačných technológiách, osobám pôsobiacim v oblasti elektronickej štátnej správy, ktoré si potrebujú osvojiť vedomosti z oblasti geografických informácií a konceptov IPI, ako aj vývojárom a tvorcom noriem.

Národný predhovor

Táto norma obsahuje národnú prílohu NA (informatívnu), v ktorej je zoznam slovenských a anglických termínov.

Vypracovanie normy

Spracovateľ normy: SvF STU v Bratislave, Ing. Jana Faixová Chalachanová, PhD.

Technická komisia: TK 89 Geodézia a kartografia

TECHNICAL REPORT

CEN/TR 15449-4

RAPPORT TECHNIQUE

TECHNISCHER BERICHT

July 2013

ICS 35.240.70

English Version

Geographic information - Spatial Data Infrastructure - Service centric view

Information Géographique - Infrastructure de données
spatiales - Vue centrée services

Geoinformation - Geodateninfrastrukturen - Teil 4: Service-
zentrierte Sicht

This Technical Report was approved by CEN on 20 November 2012. It has been drawn up by the Technical Committee CEN/TC 287.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

1	Scope.....	7
2	Normative references.....	7
3	Terms and definitions	7
4	Abbreviated terms.....	9
5	Service-centric view on SDI.....	10
5.1	Introduction	10
5.2	Use of RM-ODP viewpoints.....	11
5.2.1	The enterprise viewpoint	11
5.2.2	The computational viewpoint	12
5.2.3	The information viewpoint.....	12
5.2.4	The engineering viewpoint	12
5.2.5	The technology viewpoint.....	12
5.3	Relationships between viewpoints.....	12
5.4	Service models, processes and service oriented architectures	13
5.5	The model-driven approach.....	13
5.6	System-of-Systems Engineering.....	13
6	Enterprise viewpoint	15
6.1	Overview	15
6.2	Relevant standards	16
6.3	Example and tools.....	16
7	Computational viewpoint.....	17
7.1	Overview	17
7.2	Relevant standards	17
7.3	Examples and tools.....	18
7.3.1	Service Modeling with SoaML	18
7.3.2	Lifecycle Service Components.....	18
7.3.3	Value Chain of SDI Knowledge Generation.....	19
7.3.4	Overview of Stakeholders.....	19
7.3.5	Requirements for a next generation of SDI Services	20
7.4	Architecture-based Enabler Classification	21
8	Information viewpoint	22
8.1	Introduction	22
8.2	Relevant standards	24
8.3	Examples and tools.....	24
9	Engineering viewpoint	25
9.1	Overview	25
9.2	Multi-style SOA.....	25
9.3	Relevant standards	27
9.3.1	Service-Oriented-Architectures	27
9.3.2	Representational State Transfer (REST)	28
9.3.3	Web 2.0	28
10	Technology viewpoint.....	29
10.1	Overview	29
10.2	Architectural Classification according to Cloud Computing Service Categories	30
11	Services and Security	30
11.1	Services - security and rights management	30
11.2	Managing access and re-use rights	31
11.3	Drivers of effective rights management.....	31

11.4	Challenges of implementing rights management	32
11.5	Securing OGC Web Services	32
11.6	Security Requirements	33
Annex A	(informative) RM-ODP viewpoints and the Parts of CEN/TR 15449	35
Annex B	(informative) Example – Use case based methodology	36
Annex C	(informative) Example – Use case template	39
Annex D	(informative) Service Modeling - SoaML	42

Foreword

This document (CEN/TR 15449-4:2013) has been prepared by Technical Committee CEN/TC 287 “Geographic information”, the secretariat of which is held by BSI.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

CEN/TR 15449, *Geographic information - Spatial data infrastructures*, consists of the following parts:

- *Part 1: Reference model*
- *Part 2: Best practices*
- *Part 3: Data centric view*
- *Part 4: Service centric view.*

Introduction

Spatial Data Infrastructure (SDI) is a general term for the computerised environment for handling data that relates to a position on or near the surface of the earth. It may be defined in a range of ways, in different circumstances, from the local up to the global level.

This Technical Report focuses on the technical aspects of SDIs, thereby limiting the term SDI to mean an implementation neutral technological infrastructure for geospatial data and services, based upon standards and specifications. It does not consider an SDI as a carefully designed and dedicated information system; rather, it is viewed as a collaborative framework of disparate information systems that contain resources that stakeholders desire to share. The common denominator of SDI resources, which can be data or services, is their spatial nature. It is understood that the framework is in constant evolution, and that therefore the requirements for standards and specifications supporting SDI implementations evolve continuously.

SDIs are becoming more linked and integrated with systems developed in the context of e-Government. Important drivers for this evolution are the Digital Agenda for Europe, and related policies¹⁾. By sharing emerging requirements at an early stage with the standardization bodies, users of SDIs can help influence the revision of existing or the conception of new standards. A number of recommendations are made within the Eye on Earth White Paper [1] which provides additional context and background to the service centric view.

The users of an SDI are considered to be those individuals or organisations that, in the context of their business processes, need to share and access geo-resources in a meaningful and sustainable way. Based on platform- and vendor-neutral standards and specifications, an SDI aims at assisting organisations and individuals in publishing, finding, delivering, and eventually, using geographic information and services over the internet across borders of information communities in a more cost-effective manner.

Existing material about SDIs abounds. The following reports have been taken into account in the preparation of this Technical Report:

- legal texts and guidelines produced in the context of INSPIRE;
- documents produced by ISO/TC 211 (and co-published by CEN);
- documents produced by the Open Geospatial Consortium (OGC), including the OpenGIS Reference Model (ORM) [2];
- the European Interoperability Framework and related documents;
- deliverables from European Union-funded projects (e.g. ORCHESTRA, GIGAS, SANY, ENVISION, ENVIROFI, EO2HEAVEN)²⁾.

Considering the complexity of the subject and the need to capture and formalise different conceptual and modelling views, CEN/TR 15449 is comprised of multiple parts:

- *Part 1: Reference model:* This part provides a general context model for the other Parts, applying general IT architecture standards;
- *Part 2: Best Practice:* This part provides best practices guidance for implementing SDI, through the evaluation of the projects in the frame of the European Union funding programmes;

1) As described in Part 1 of this Technical Report.

2) A list of EU Funded projects is given in Part 2 of this Technical Report.

CEN/TR 15449-4:2013 (E)

- *Part 3: Data centric view:* This part addresses concerns related to the data, which includes application schemas and metadata;
- *Part 4: Service centric view:* This current document.

Further parts may be created in the future.

1 Scope

This Technical Report describes a service-centric view of a Spatial Data Infrastructure (SDI).

The Service Centric view addresses the concepts of service specifications, the methodology for developing service specifications through the application of the relevant International Standards, and the content of such service specifications described from the perspective of the five Reference Model of Open Distributed Processing (RM-ODP) viewpoints:

- the enterprise viewpoint addresses service aspects from an organisational, business and user perspective;
- the computational viewpoint addresses service aspects from a system architect perspective;
- the information viewpoint addresses service aspects from a geospatial information expert perspective;
- the engineering viewpoint addresses service aspects from a system designer perspective;
- the technology viewpoint addresses service aspects from a system builder and implementer perspective.

The intended readership of this Technical Report is those people who are responsible for creating frameworks for SDI, experts contributing to INSPIRE experts in information and communication technologies and e-government that need to familiarise themselves with geographic information and SDI concepts, and standards developers and writers.

2 Normative references

Not applicable.

koniec náhl'adu – text ďalej pokračuje v platenej verzii STN