



Spatial Data Infrastructures and Interaction Paradigms





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of GIScience

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Welcome to UNIGIS International

Life-Long Learning in GIScience
- flexible through distance learning

The **UNIGIS International Association** is the world's premier distance education initiative offering masters and diploma programmes in **Geographical Information Science and Systems (GISc)**. As a global network of higher education institutions UNIGIS is dedicated to enhance the competence of GIS professionals like you!

■ GIScience and Geoinformatics via Distance Learning

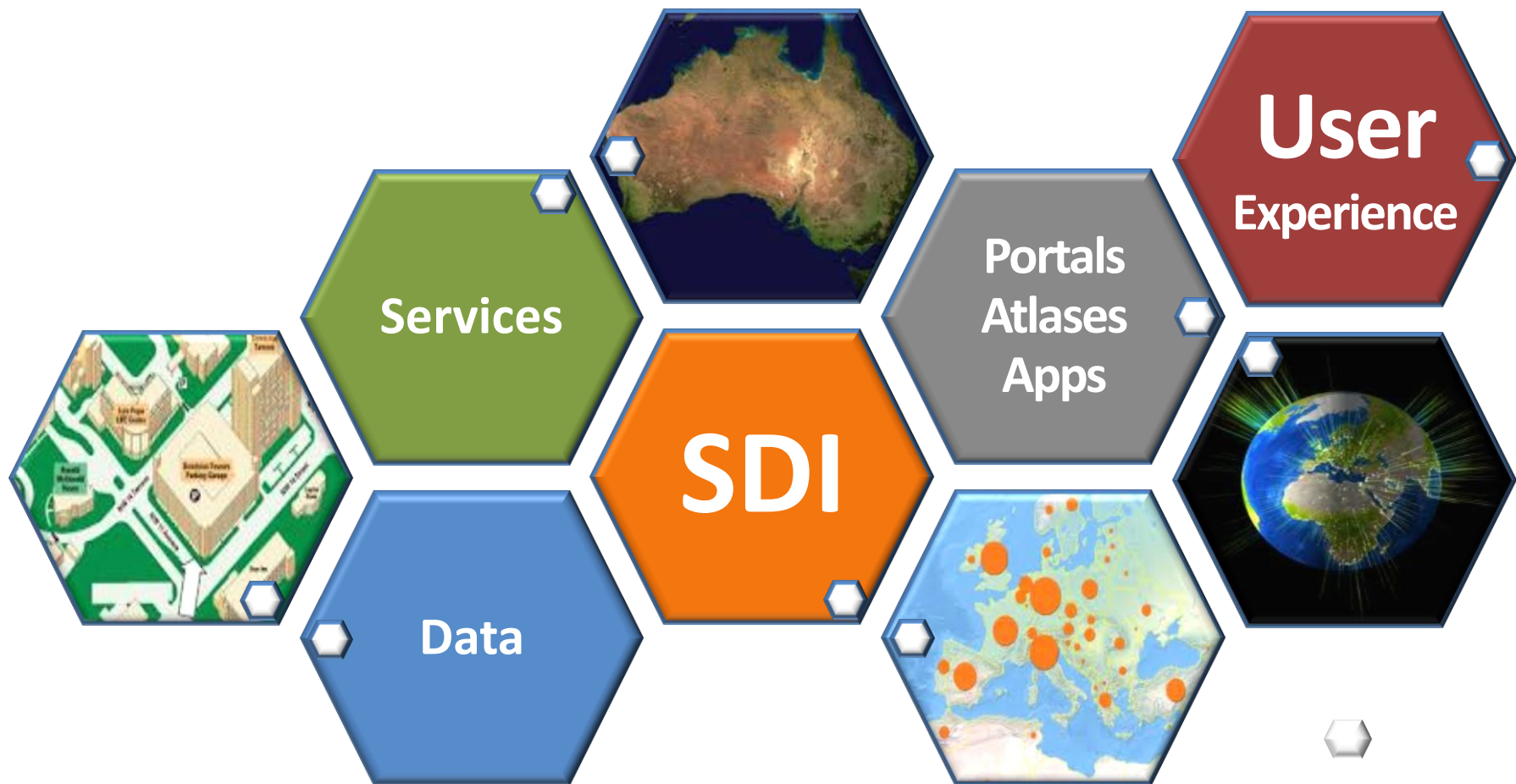
- Aspiring to an internationally recognised qualification in GIScience?
- Searching for high quality academic learning environments?
- Prefer a flexible alternative to full-time studies compatible with family and work?
- Want to enhance your long-term career prospects?

■ UNIGIS News Worldwide

[Directions of Geospatial Technology - India Geospatial Forum](#)



At this year's
India Geospatial
Forum in



Spatial Data Infrastructures

... a relevant base collection of technologies, policies and institutional arrangements that facilitate the availability of and access to spatial data. An SDI provides a basis for spatial data discovery, evaluation, and application for users and providers ...



Infrastructure

A reliable environment supporting

- **multiple and diverse applications**
- **for different users,**
- **provided and maintained by different stakeholders**
- **under defined business models.**
- ***like:* transportation, telecommunication, electricity, ...**



Interoperability

Core concept for (spatial data) infrastructures:

„Interoperability is the capability of a product or system - whose interfaces are fully disclosed- to inter-act and function with other products or systems“

- **Components, services and clients can ,talk‘ to each other and exchange information**
- **Based on standards!**



International
Organization for
Standardization

International Standards for Business, Government and Society

Search >>

Home Products Standards development News and media About ISO

For ISO Members · FAQs · Fr | Ru ISO Store

Products > ISO Standards > By TC > TC 211 Geographic information/Geomatics

ISO Store

ISO Standards

By ICS

>> By TC

How to use the ISO
Catalogue

Standards in action
Management and
leadership standards

The ISO portfolio

FAQs

Country codes (ISO
3166/MA)

Directory of aerospace
standards

Publications and e-products

ISO Concept Database
(ISO/CDB)

Copyright

ISO 19115:2003



Geographic information -- Metadata

Media and price

Language	Format	Add to basket
English	PDF (2 157 kB)	CHF 224,00
English	Paper	CHF 224,00

General information

Number of Pages: 140

Edition: 1 (Monolingual)	ICS: 35.240.70
Status: Published	Stage: 90.92 (2009-02-18)
TC/SC: TC 211	

Abstract

ISO 19115:2003 defines the schema required for describing geographic information and services. It provides information about the identification, the extent, the quality, the spatial and temporal schema, spatial reference, and distribution of digital geographic data.

ISO 19115:2003 is applicable to:

These standards could also interest you

- [ISO/TS 19130:2010](#)
Geographic information - Imagery sensor models for geopositioning
- [ISO 19146:2010](#)
Geographic information -- Cross-domain vocabularies
- [ISO 19143:2010](#)
Geographic information -- Filter encoding





GSDI

Global Spatial Data
Infrastructure Association



GSDI

- Association Information
- Join GSDI Association
- Newsletters
- News List Archive
- Discussion Lists
- Electronic Gateways
- Upcoming Conferences
- Upcoming Webinars
- Past GSDI Conferences
- Publications
- Committees
- Members & Sponsors
- Founding Members
- SDI Consulting
- International Geospatial Society
- GIKNetwork
- Contacts
- Members Only
- Site Search

14 Feb 2015

Navigation

- ▶ Feed aggregator

GLOBAL SPATIAL DATA INFRASTRUCTURE ASSOCIATION

The GSDI Association is an inclusive organization of organizations, agencies, firms, and individuals from around the world. The purpose of the organization is to promote international cooperation and collaboration in support of local, national and international spatial data infrastructure developments that will allow nations to better address social, economic, and environmental issues of pressing importance.

GSDI and IGS News

EARSC Survey on global EO Services Industry

Posted 02/10/2015: The European Association of Remote Sensing Companies (EARSC) is conducting a survey of the global (EO) services industry and would greatly appreciate your support by: 1) completing the survey for your...

[Read More...](#)

United Nations/Germany International Conference on Earth Observation, 26-28 May, Bonn, Germany

Posted 01/29/2015: The "United Nations/Germany International Conference on Earth Observation & Global solutions for the challenges of sustainable development in societies at risk" is now open for applications. The confe...

[Read More...](#)

CIESIN Memorial fund for former GSDI Board Member Mark Becker

Posted 01/29/2015: The Earth Institute at Columbia University has set up a fund to receive monetary gifts in memory of former GSDI Board Director Mark Becker, who tragically died in an auto accident in February 2014. Ma...

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President's Corner

[Past-President Abbas Rajabifard Statement at UN-GGIM High-level Meeting](#)

[Additional listings](#)

Members' Corner

[Carl Reed retires as OGC's CTI and Executive Director Standards Program](#)

[OGC seeks public comment on candidate 3D Portrayal Service Standard](#)

[Scott Simmons to lead OGC's Standards Program](#)

[Additional listings](#)

Official Scholarly Journals

IJSDIR

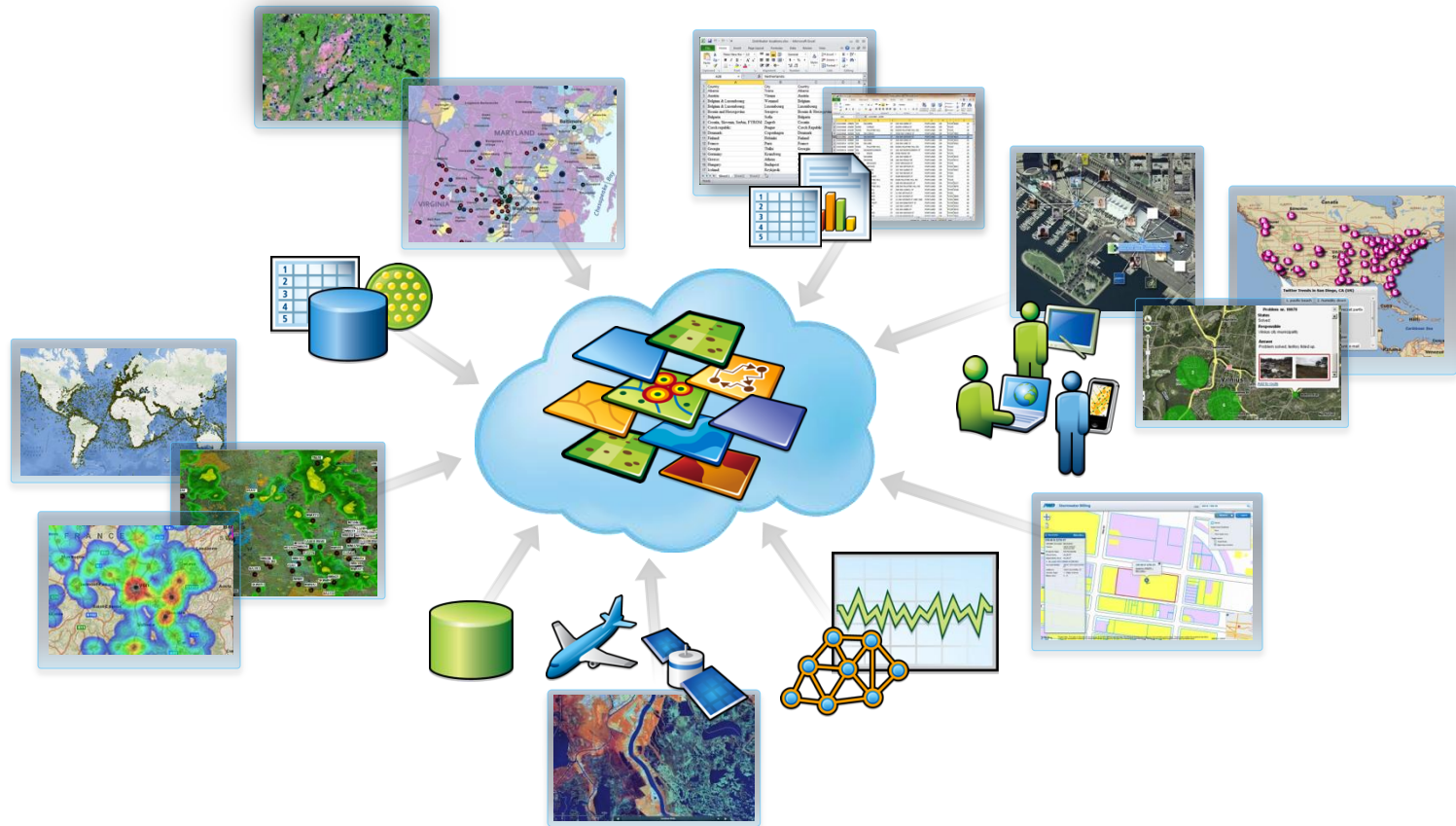
JGIS

Newsletter

[GSDI SDI Regional Newsletter](#)
[Newsletter Archives](#)



Bringing it all together!



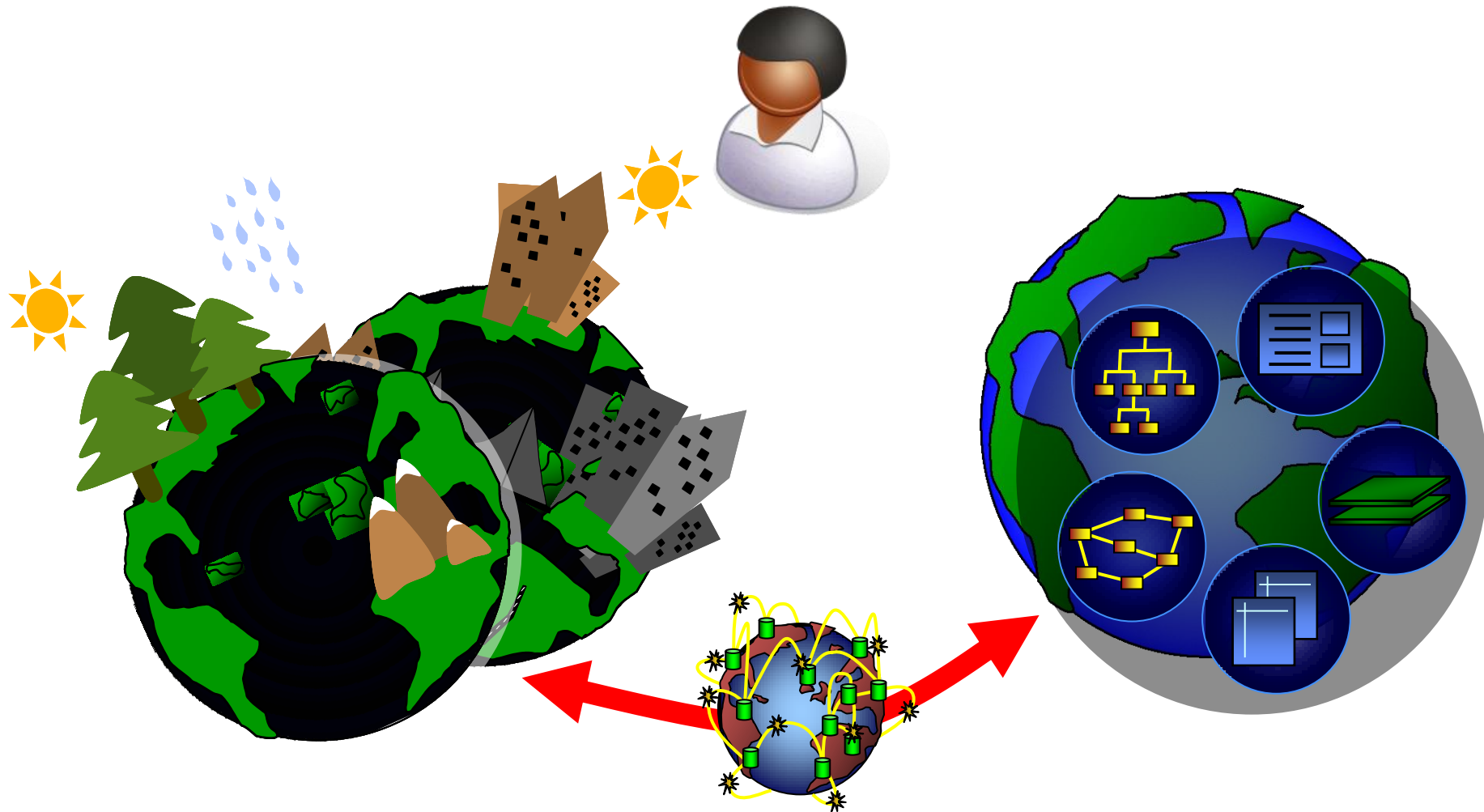
Sensors, Sensors Everywhere

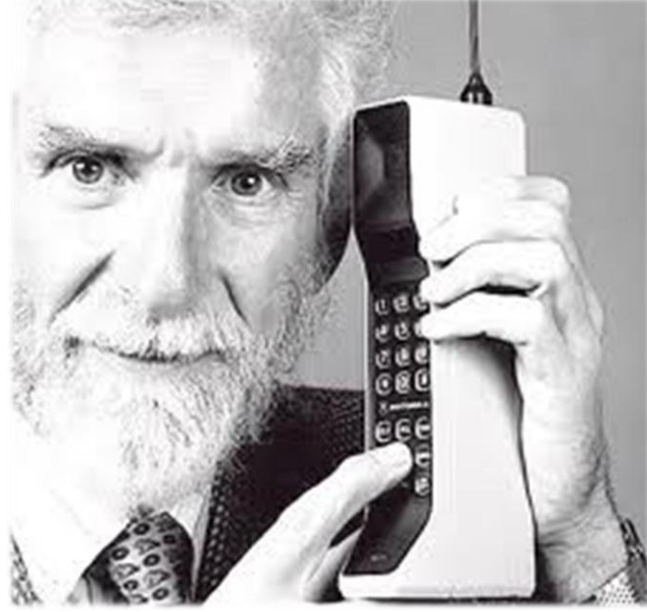


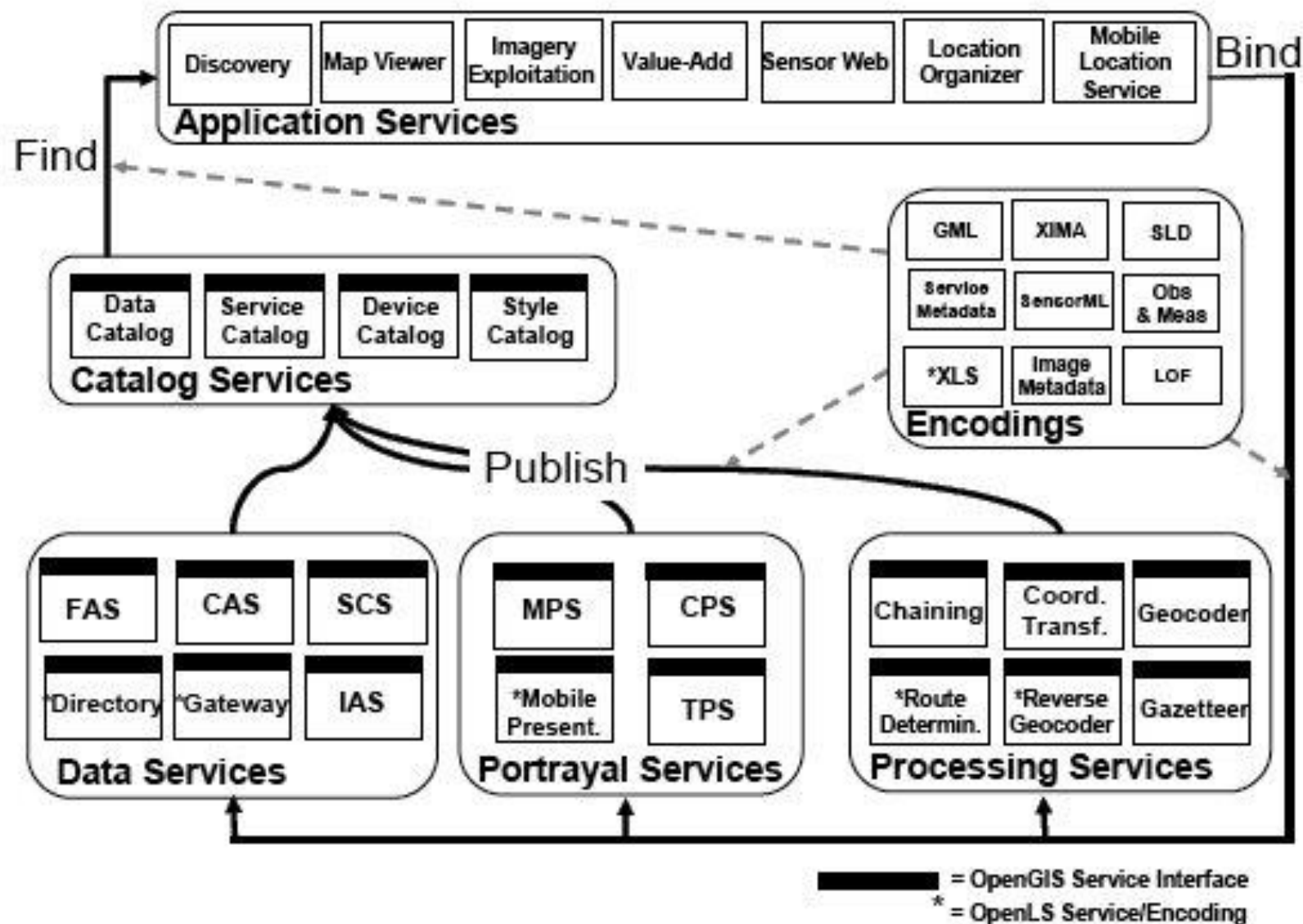


Real vs Virtual Worlds

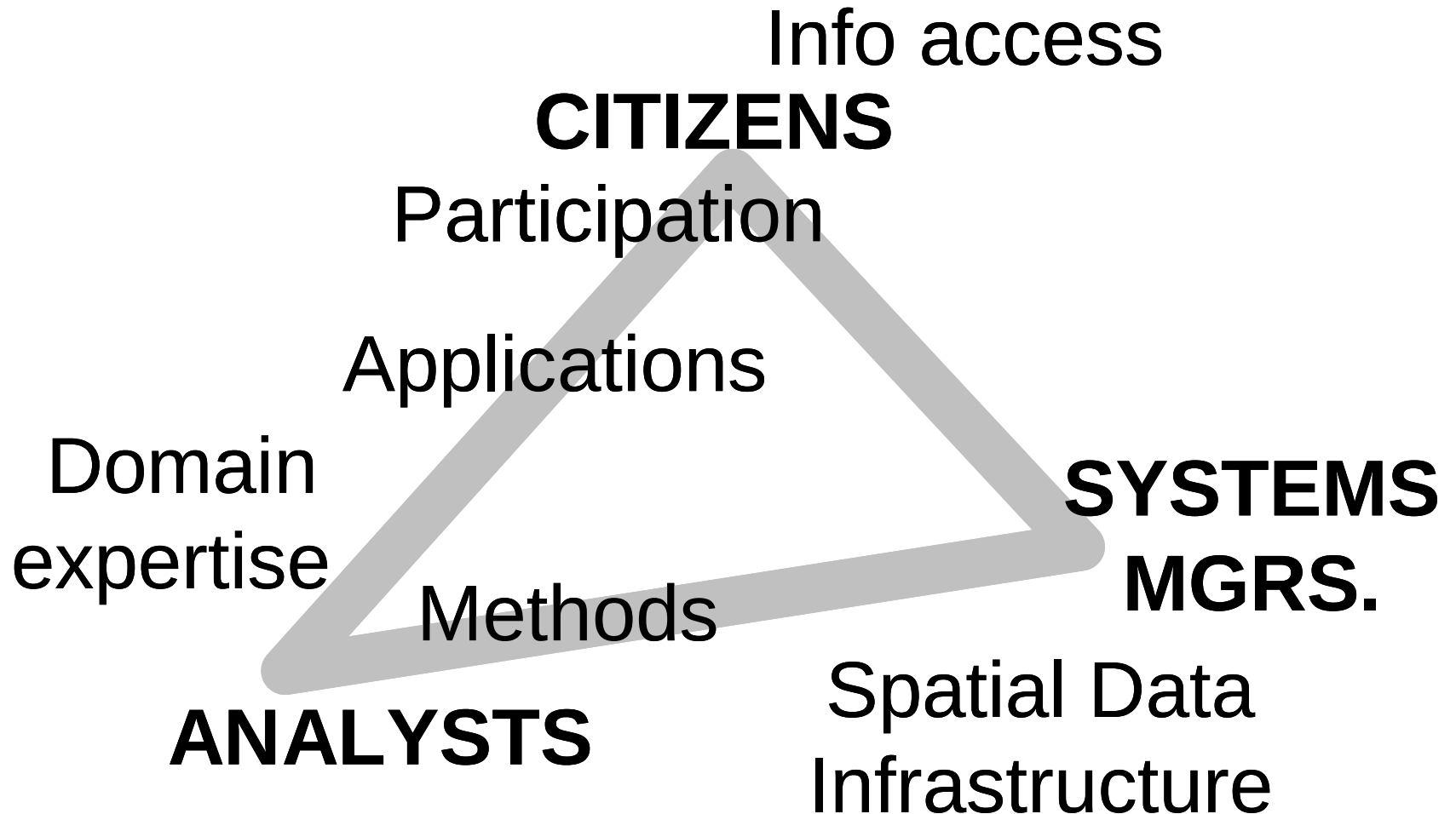
Earth vs Model







Target Audiences



SDI - User Interaction

Geo-Portals

- Professional GUI for discovery and access

Online Atlas

- Access point for a defined domain or community

Geospatial App

- Single- and specific-purpose tools

Internet of Things

- 'Back to URL' – links enabling situated action



European Commission INSPIRE Geoportal

[Contact](#) | [Legal notice](#)

EUROPEAN COMMISSION > INSPIRE GEOPORTAL > Discovery

[Home](#)[Discovery](#)[Viewer](#)[Metadata Editor](#)[Metadata Validator](#)

Technical

INSPIRE SOAP primer for INSPIRE Discovery and View Services providing simple examples of the proposed INSPIRE SOAP framework and additional clarifications

Proposals for the documentation of the communication of the view and discovery service using the Web Service Description Language

Technical Guidance Discovery Services (2.0)

Technical Report: INSPIRE NETWORK SERVICES SOAP Framework

Technical Report: SOAP HTTP Binding Status - Survey on OGC and ORCHESTRA Specifications Relevant for the INSPIRE Network Services

**INSPIRE
Website****INSPIRE**

Search

Advanced Search[Browse](#)[About](#)

Title

Abstract

Keywords

Search

Reset

Unique resource identifier

Code

Namespace

Resource type

all

dataset

series

service

Topic category

climatology meteorology atmosphere

economy

environment

farming

Temporal Extent

From

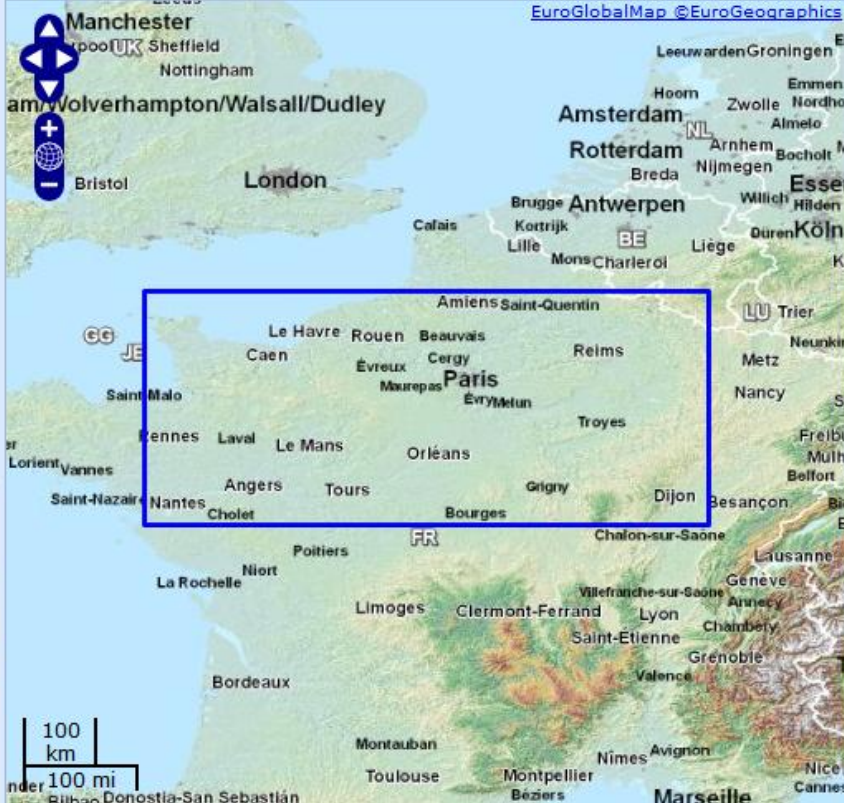
1999-01-01

To

2011-04-01

[More criteria](#)

S 43.06 W -3.81 N 53.87 E 7.34 13.49478, 61.0498

[EuroGlobalMap ©EuroGeographics](#)

Results

[10-days MERIS Fraction of Absorbed Photosynthetically Active Radiation on demand](#)[10-days MERIS Fraction of Brown Vegetation on demand](#)[10-days MERIS Fraction of Soil on demand](#)[10-days MERIS Fraction of Vegetation Cover on demand](#)

The Fraction of Vegetation Cover indicates the fraction of area covered by green vegetation, i.e. the green part of the canopy foliage (natural vegetation of any type and crops). The product is gener...

[more details](#)[10-days MERIS Fraction of Water on demand](#)[10-days MERIS Leaf Area Index on demand](#)[Global 10-days SPOT-VEGETATION Directional Hemispheric Reflectance](#)

Page 1 of 3 Record 1 - 10 of 22

Statistics

Resource Type Statistic

Total records found	22
series	22

http://services.arcgis.com/Sf0q24s0oDKgX14j/arcgis/rest/services/Gemeinden/FeatureServer/1

ArcGIS REST Services Directory

[Home](#) > [services](#) > [Gemeinden \(FeatureServer\)](#) >

[JSON](#)

Layer: Gemeindegrenzen (ID:1)

View In: [ArcGIS.com Map](#)

Name: Gemeindegrenzen

Display Field:

Type: Feature Layer

Geometry Type: esriGeometryPolygon

Description:

Copyright Text:

Min. Scale: 0

Max. Scale: 0

Default Visibility: true

Max Record Count: 2000

Supported query Formats: JSON

Extent:

XMin: 1342240.6572114
YMin: 5931941.28642764
XMax: 1559321.79191921
YMax: 6113818.7481687
Spatial Reference: 102100

Drawing Info:

Renderer:
Simple Renderer:
Symbol:

Style: esriSFSSolid, Color: [76, 129, 205, 191]

Outline:

Simple Line Symbol:

Style: esriSLSSolid, Color: [0, 0, 0, 255], Width: 0.75

Label:

Description:

Transparency: 0

Labeling Info: N/A

HasZ: false

HasM: false

Has Attachments: false

HTML Popup Type: esriServerHTMLPopupTypeNone

Global ID Field:

Type ID Field:

Fields:

- FID (type: esriFieldTypeInteger, alias: FID, SQL Type: sqlTypeInteger, nullable: false, editable: false)
- OBJECTID (type: esriFieldTypeInteger, alias: OBJECTID, SQL Type: sqlTypeInteger, nullable: true, editable: true)
- NAME (type: esriFieldTypeString, alias: NAME, SQL Type: sqlTypeNVarchar, length: 50, nullable: true, editable: true)
- GEMNR (type: esriFieldTypeInteger, alias: GEMNR, SQL Type: sqlTypeInteger, nullable: true, editable: true)
- Kurzname (type: esriFieldTypeString, alias: Kurzname, SQL Type: sqlTypeNVarchar, length: 50, nullable: true, editable: true)
- Kuerzel (type: esriFieldTypeString, alias: Kuerzel, SQL Type: sqlTypeNVarchar, length: 50, nullable: true, editable: true)
- SHAPE_area (type: esriFieldTypeDouble, alias: SHAPE_area, SQL Type: sqlTypeFloat, nullable: true, editable: true)
- SHAPE_len (type: esriFieldTypeDouble, alias: SHAPE_len, SQL Type: sqlTypeFloat, nullable: true, editable: true)

Templates:

Name: New Feature

Description:

Drawing Tool: esriFeatureEditToolPolygon

Prototype:

Attributes:

Is Data Versioned: false

Supports Rollback On Failure Parameter: true

Supported Operations: [Query](#) [Generate Renderer](#) [Validate SQL](#)

Themes

All

Basemaps

Imagery

Demographics

Lifestyles

Landscape

- ☐ Climate
- ☐ Ecology
- ☐ Species Biology
- ☐ Ecological Disturbance
- ☐ Elevation
- ☐ Environmental Impact
- ☐ Land Cover
- ☐ Natural Hazards
- ☐ Oceans
- ☐ Soils/Geology
- ☐ Subsurface
- ☐ Water
- ☐ Weather

Earth Observations

Urban Systems

Transportation

Boundaries and Places

Historical Maps

Story Maps



Africa Climate

By esri_Landscape



Ocean Basemap

By esri



USA Soil Erosion Hazard Forest Roads

By esri_Landscape



USA Wetlands

By esri_Landscape



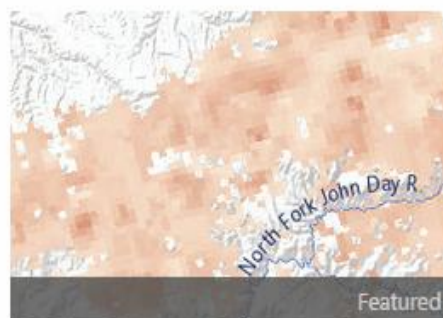
USA Woody Biomass

By esri_Landscape

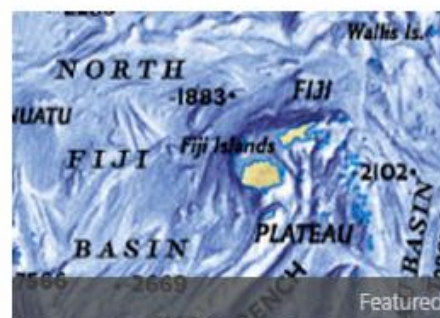


USA Forest Type

By esri_Landscape



USA Insect and Disease Risk



Pacific Ocean Floor Map



2 ft Sea Level Rise: Inundation Map Arou ...



Online Atlas

A collection of geospatial apps with a common UX, accessible from online devices, addressing a theme or region of interest to a defined target audience.

- **Navigation and discovery**
- **Default Aol incl. spatial bookmarks**
- **Behaviour (and limitations) re scale and LoD**
- **Default basemaps**
- **Style & Design**

... are some of the common elements.



This means, inter alia ...

From curated content towards curated UX

Online atlas as a flexible GUI to dynamic data and information, including but not limited to SDI

Native 'web platform' with responsive design tied in with services architectures

Authors are communication designers, focused on a region and/or theme of interest

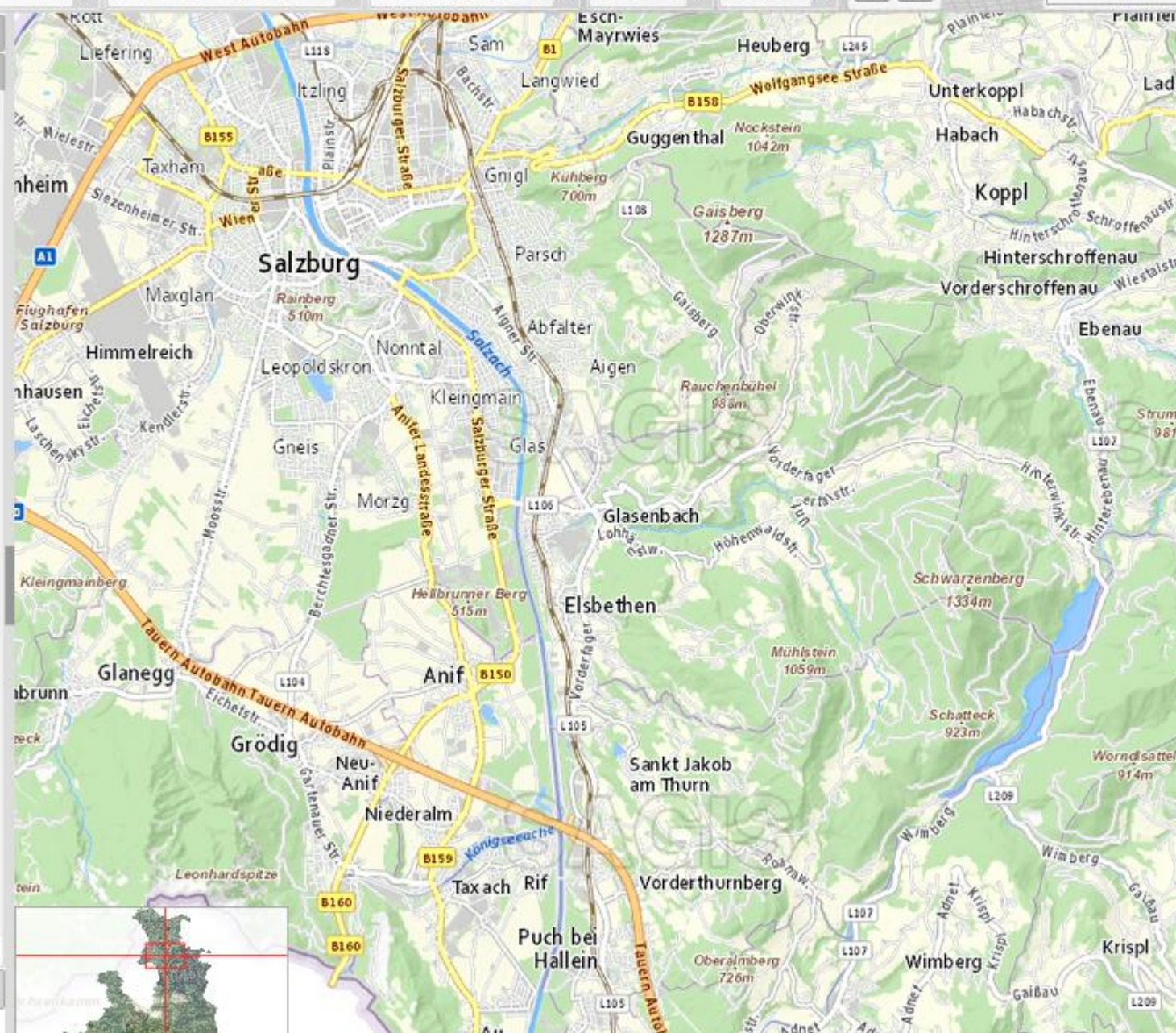
An online atlas is a node, an access point into a universe with no strictly defined boundaries

Allgemein

Inhaltsverzeichnis

- ☐ Höheninformation
- ☐ Grenzen
- ☐ Francisczäischer Kataster
- ☐ Digitale Katastralmappe
- ☐ Boden
- ☐ Energie
- ☐ Freizeit und Kultur
- ☐ Gesundheitseinrichtungen
- ☐ Öffentl. u. wirtschaftl. Ei
- ☐ Land- und Forstwirtschaft
- ☐ Landnutzung/Landbedeck
- ☐ Natur
- ☐ Naturgefahren
 - ☐ Gefahrenzonenpläne der WL
 - ☐ Gefahrenzonen der Bundesv
 - ☐ Ereigniskataster
- ☐ Nationalpark
- ☐ Rohstoffe und Geologie
- ☒ Raumordnung
 - ☐ Örtliche Raumplanung
 - ☒ Überörtliche Raumordnungs
 - ☐ zentralörtliche Struktur
 - ☐ Strukturgliederung laut L
 - ☐ Planungsregionen
 - ☐ Regionalverbände
 - ☐ Standortverordnungen fü
 - ☐ Grüngürtel Stadt Salzburg

Legende





HOME

Allgemein
Landkarten
Fachinformation
GEO-Suche
Download

SERVICES

☒ Geographie
☒ Land Oberösterreich
☒ geoland.at
☒ basemap.at



doris.at

DORIS mobile NEU

Ab sofort steht Ihnen die neue Browserversion unserer mobilen Angebote zur Verfügung. Diese wurde speziell nach den Wünschen unserer User entwickelt. Über weitere Anregungen würden wir uns freuen.

[zur neuen Browserversion](#)



Abfall



Adressen &
Orthofotos



Ateliers &
Galerien



Baustellen-
führer



Bergmarathon



Boden



Bodenordnung



Brücken



Bibliotheken



Burgen &
Schlösser



Dialekte in Oö.



Elekt.
Einrichtungen



Eltern-Kind-
Zentren



Erste Landes-
aufnahme



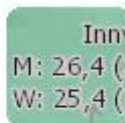
Flächenwid-
mungsplan



Forst



Geschichtsorte



Gesundheits-
atlas



Historische
Grenzen



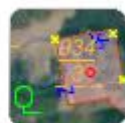
Historische
Wahlen



Höhenrausch



Jugendzentren



Kataster (DKM)



Kinderkompass



Kirchliche
Topographie



KZ-Gedenk-
stätten



Linz-Marathon



Maibäume in
Oberösterreich



Umfahru



Donautal
und Aschauer



GutsMuths



GutsMuths



GutsMuths



GutsMuths



GutsMuths



Suche starten
Eingabe: Ort oder Adr

TOP Landkartendienste

Kataster (DKM)
 Orthofotos
 Adressensuche
 ONLINE-Bestellung
 Urmappe
 Grundkarte (ÖK)
 Basisdaten
 Flächenwidmungsplan
 Wasser & Geologie
 Verkehrszählungen
 DORIS easyMAP

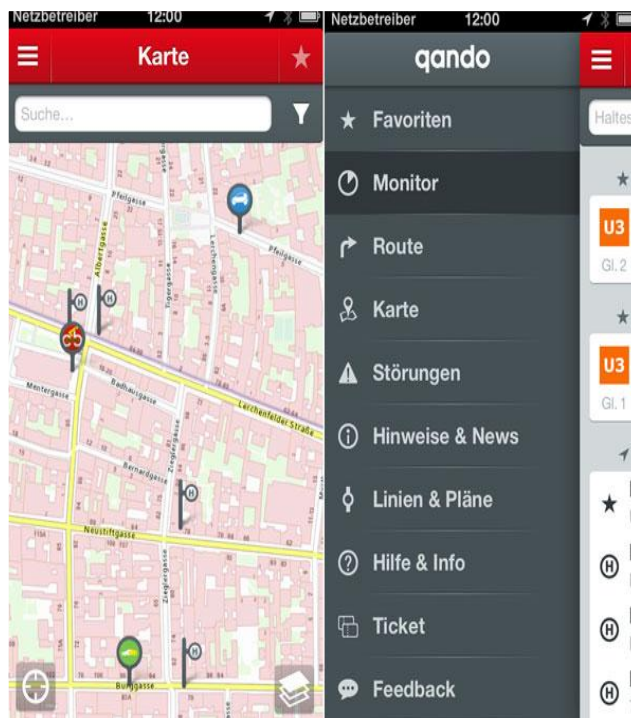
Mobile Endgeräte

Use Browser-App
m.doris.at

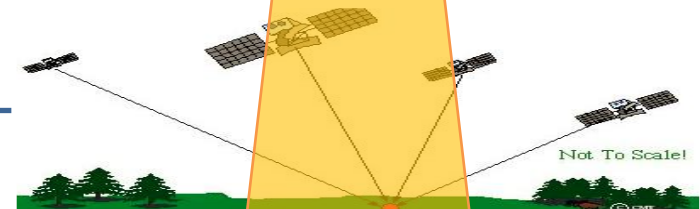
Available on the
App Store

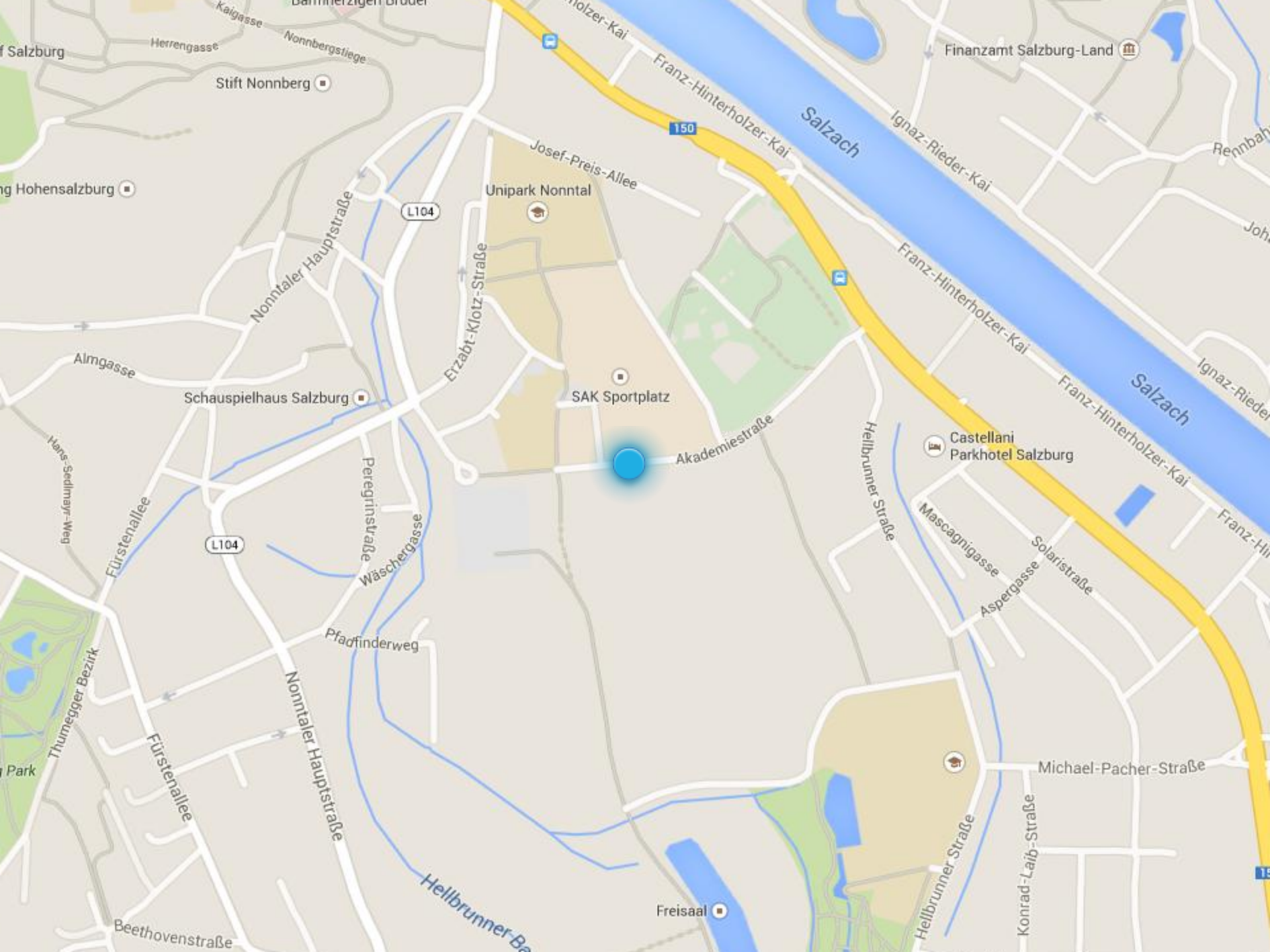
ANDROID APP ON
Google play

Public Transport App



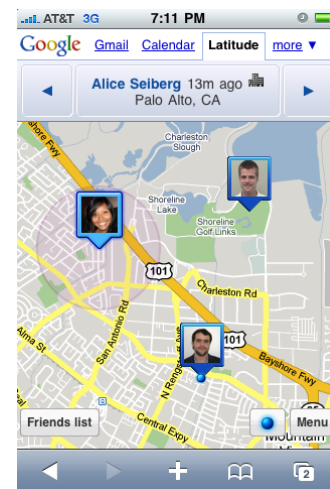
Salzburg Süd S-Bahn	18	38	58	09	29	49	59	09	19	29	39	49	59	09	19	29
Salzburg Süd Kaindlweberweg	19	39	59	10	29	40	50	10	20	30	40	50	10	20	30	40
Glasenbach	20	40	00	12	21	32	42	52	02	12	22	32	42	52	02	12
Ursulinen	21	41	01	13	22	33	43	53	03	13	23	33	43	53	03	13
Valkenauerstraße	23	43	03	14	24	34	44	54	04	14	24	34	44	54	04	14
Josef Kaut Straße	24	44	04	15	25	35	45	55	05	15	25	35	45	55	05	15
Salzachstraße	25	45	05	16	26	36	46	56	06	16	26	36	46	56	06	16
Aigen S-Bahn	26	46	06	17	27	37	47	57	07	17	27	37	47	57	07	17
Überfuhrn/Diakoniezentrum	27	47	07	18	28	38	48	58	08	18	28	38	48	58	08	18
Ernst Gren Straße	28	48	08	19	29	39	49	59	09	19	29	39	49	59	09	19
Rennbahnstraße	29	49	09	20	30	40	50	00	10	20	30	40	50	00	10	20
Finanzamt	30	50	10	21	31	41	51	01	11	21	31	41	51	01	11	21
Volksgarten	33	53	13	24	34	44	54	04	14	24	34	44	54	04	14	24
Dr Franz Rehr Platz/UKH	33	53	13	25	35	45	55	05	15	25	35	45	55	05	15	25
Außerer Stein	51	15	35	55	15	27	37	47	57	07	17	27	37	47	57	07











0805411

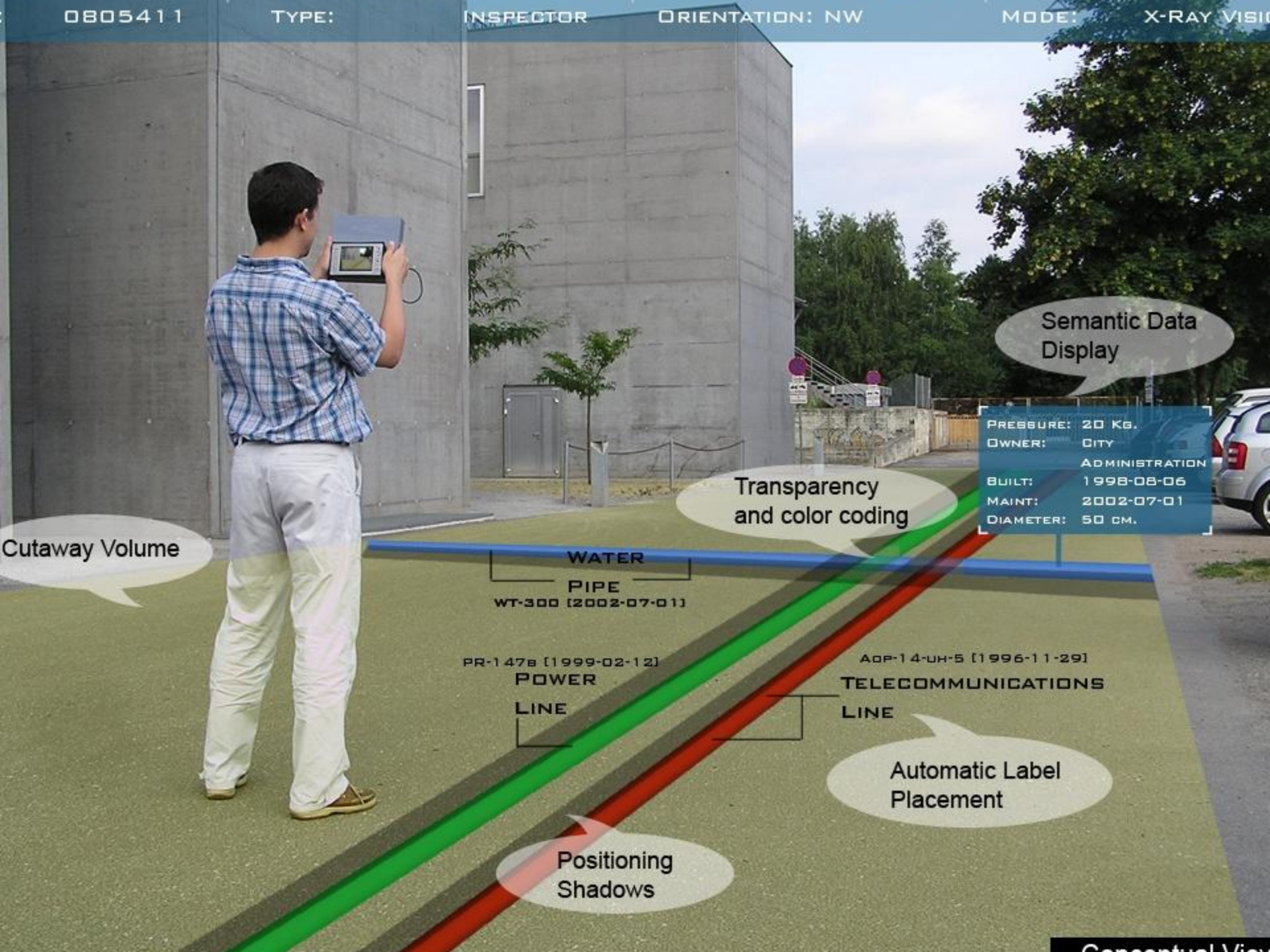
TYPE:

INSPECTOR

ORIENTATION: NW

MODE:

X-RAY VISION



Semantic Data
Display

PRESSURE: 20 KG.
OWNER: CITY
ADMINISTRATION
BUILT: 1998-08-06
MAINT: 2002-07-01
DIAMETER: 50 CM.

Transparency
and color coding

Cutaway Volume

WATER
PIPE
WT-300 [2002-07-01]

PR-147B [1999-02-12]
POWER
LINE

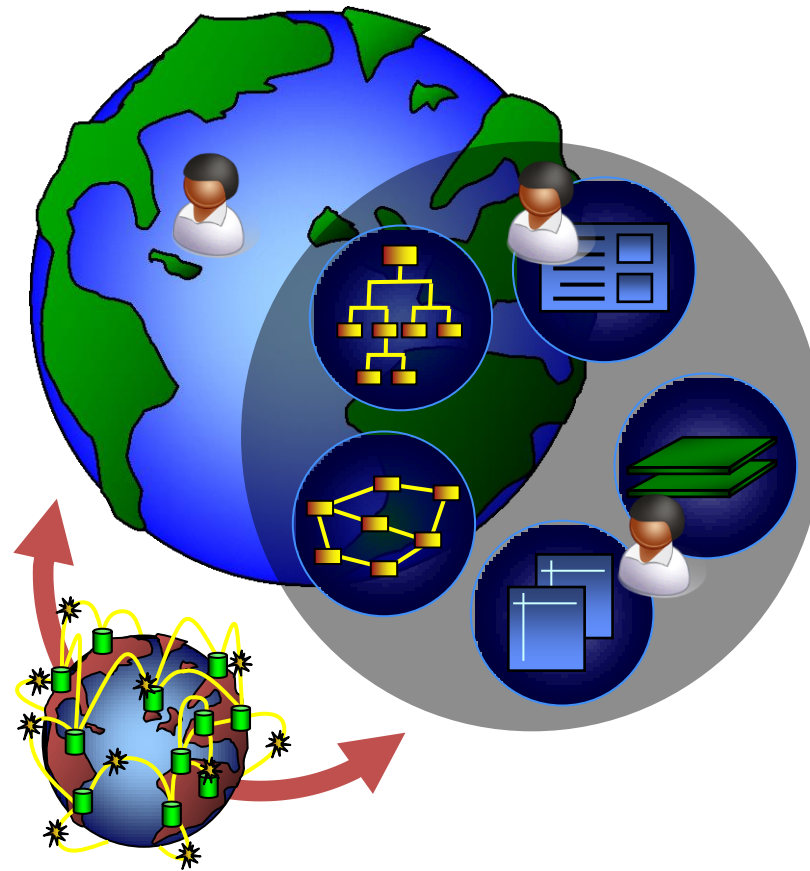
ADP-14-UH-5 [1996-11-29]
TELECOMMUNICATIONS
LINE

Automatic Label
Placement

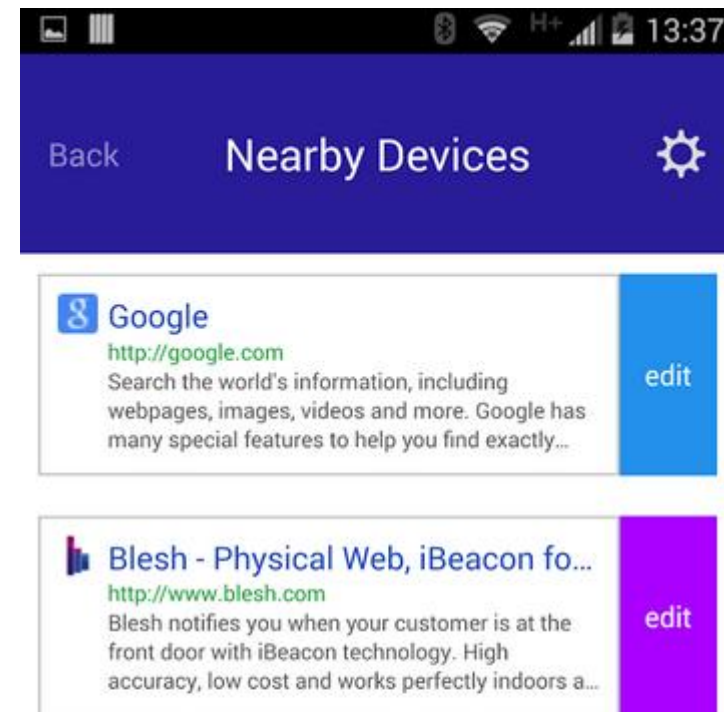
Positioning
Shadows

Conceptual View

Real vs Virtual Worlds Convergence and Overlap



The Physical Web



SDI - User Interaction

Geo-Portals

- Professional GUI for discovery and access

Online Atlas

- Access point for a defined domain or community

Geospatial App

- Single- and specific-purpose tools

Internet of Things

- 'Back to URL' – links enabling situated action

Geospatial Minds for Society

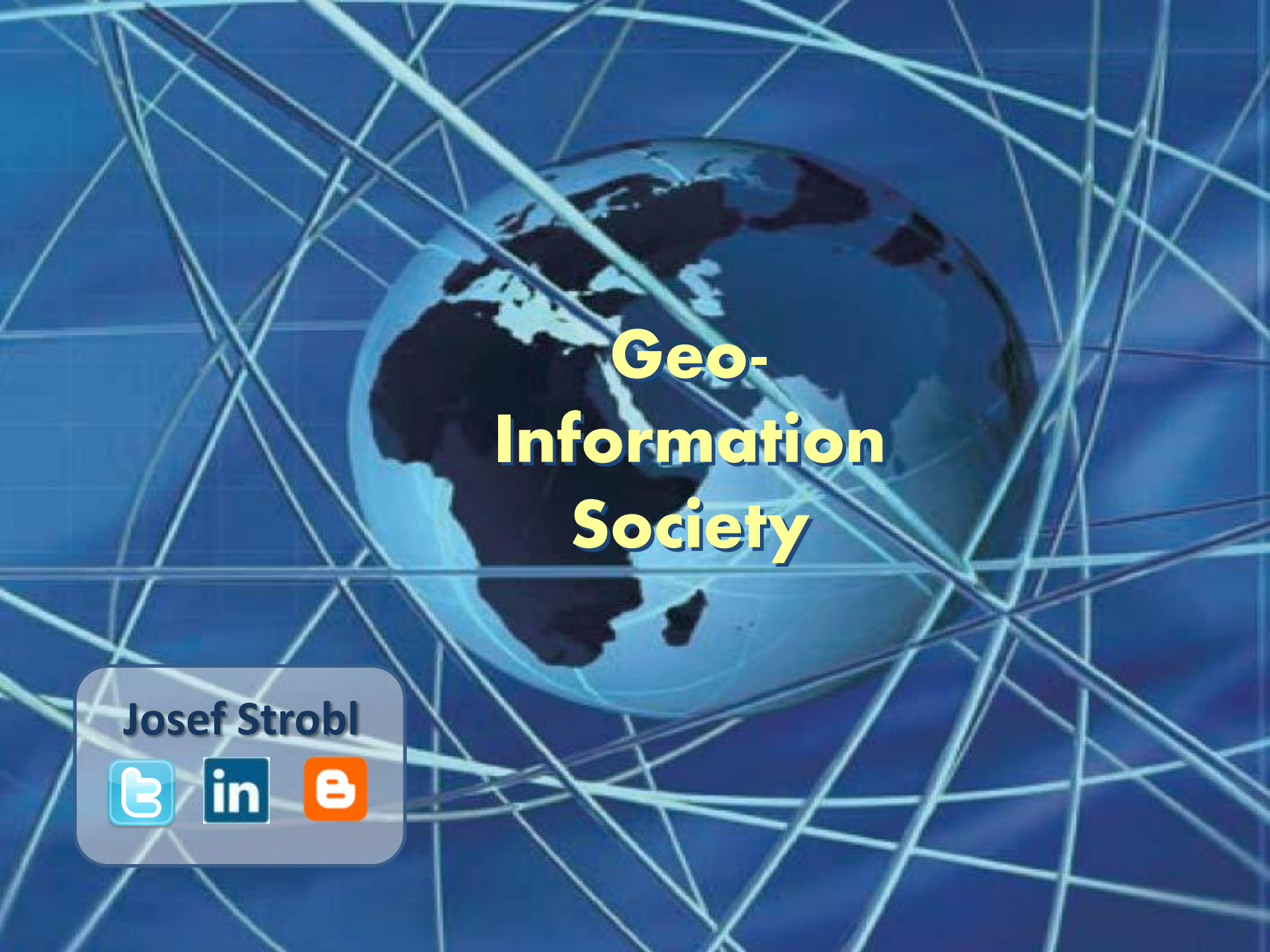
> www.gi-forum.org



GI Forum

SYMPOSIUM and EXHIBIT

Salzburg, July 7 – 10, 2015



Geo- Information Society

Josef Strobl

