

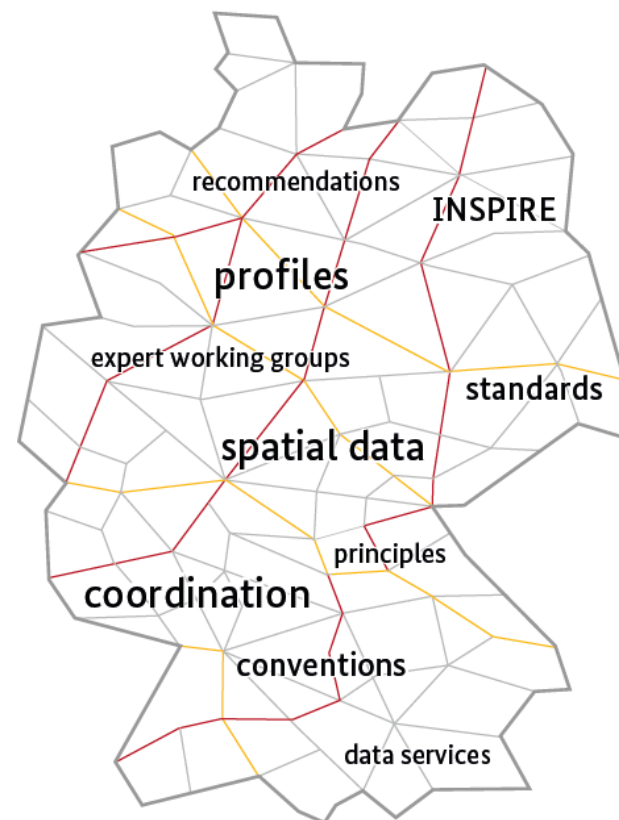
GDI-DE Testsuite – More cooperation, better quality

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Quality Knowledge Exchange Network
Frankfurt, Germany

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Federal Agency for Cartography and Geodesy

- **Background**
- **National technical SDI**
- **Architecture**
- **Quality assurance in GDI-DE**
 - **Why testing?**
 - **Better quality!**
 - **More cooperation!**
- **Technical Background**
- **Outlook / Conclusion**

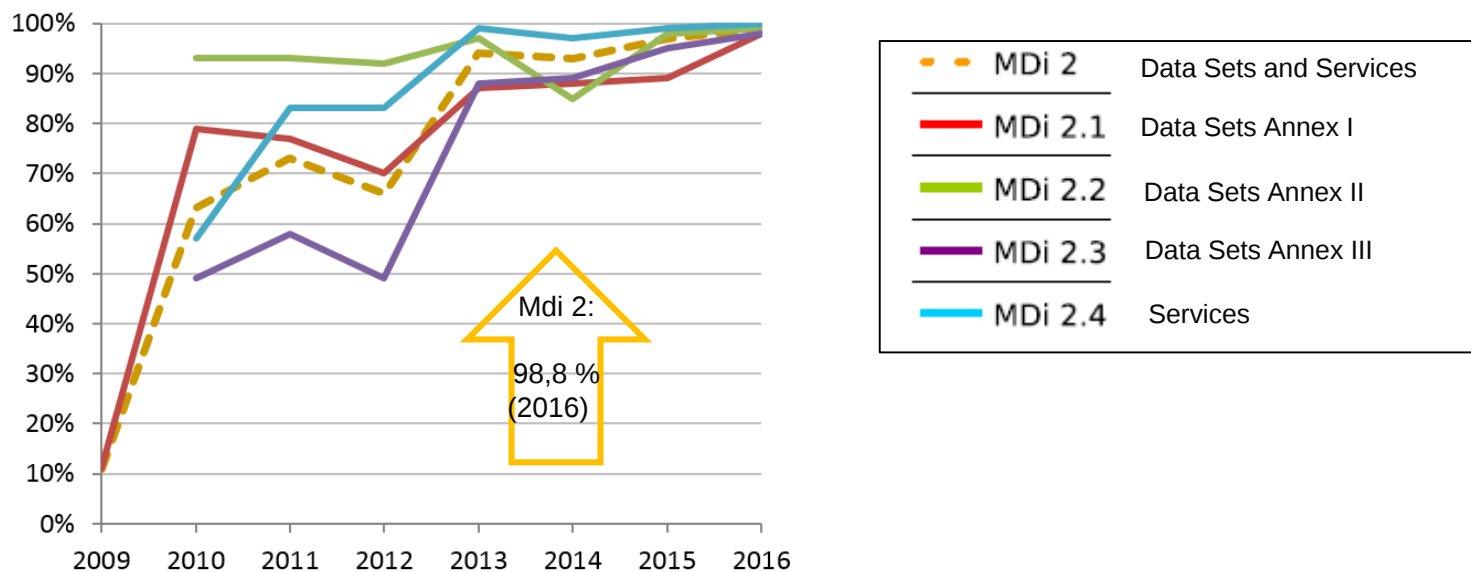


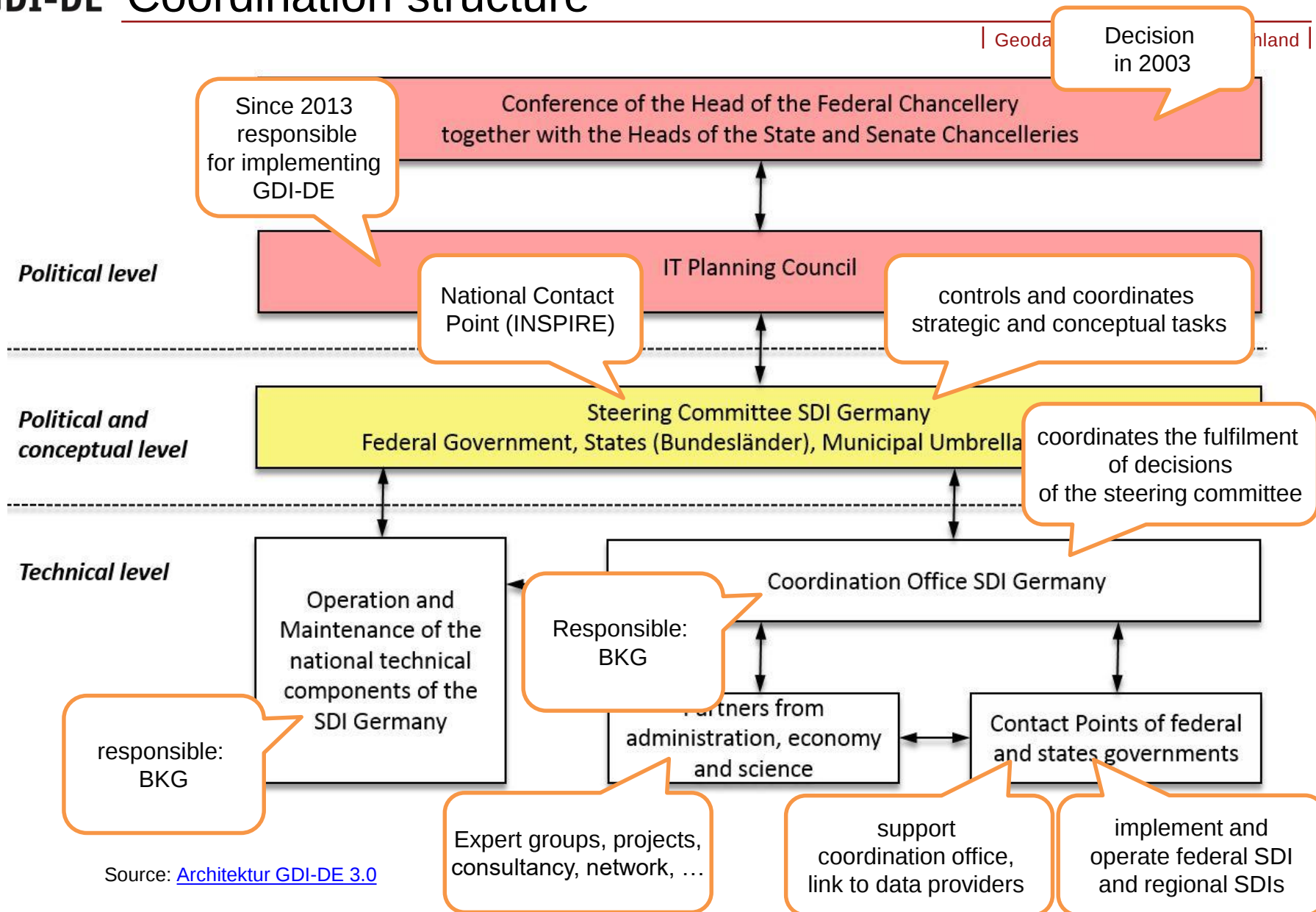
**More cooperation,
better quality**

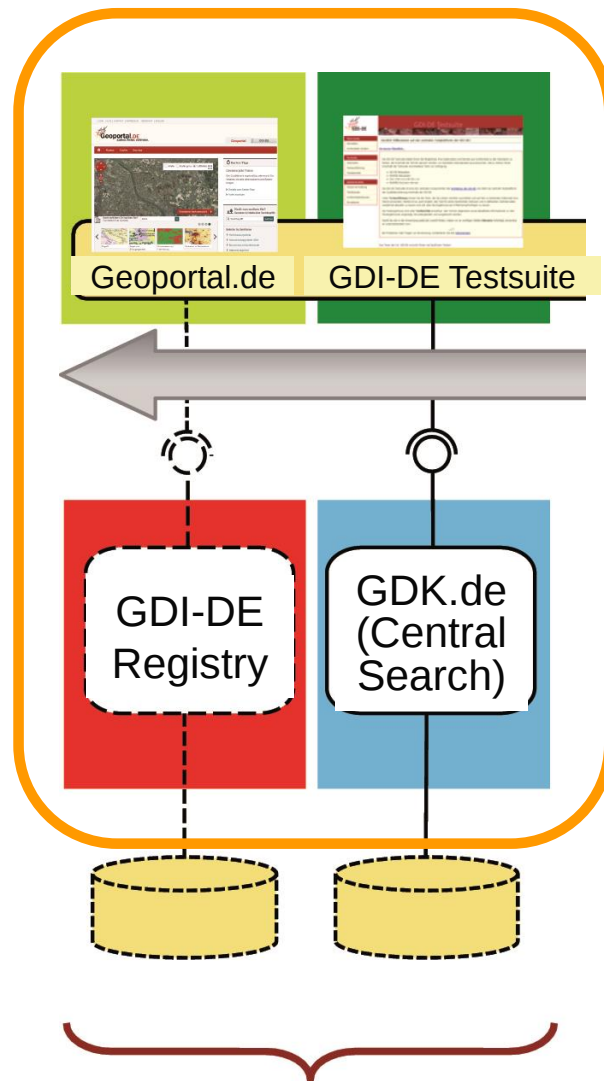
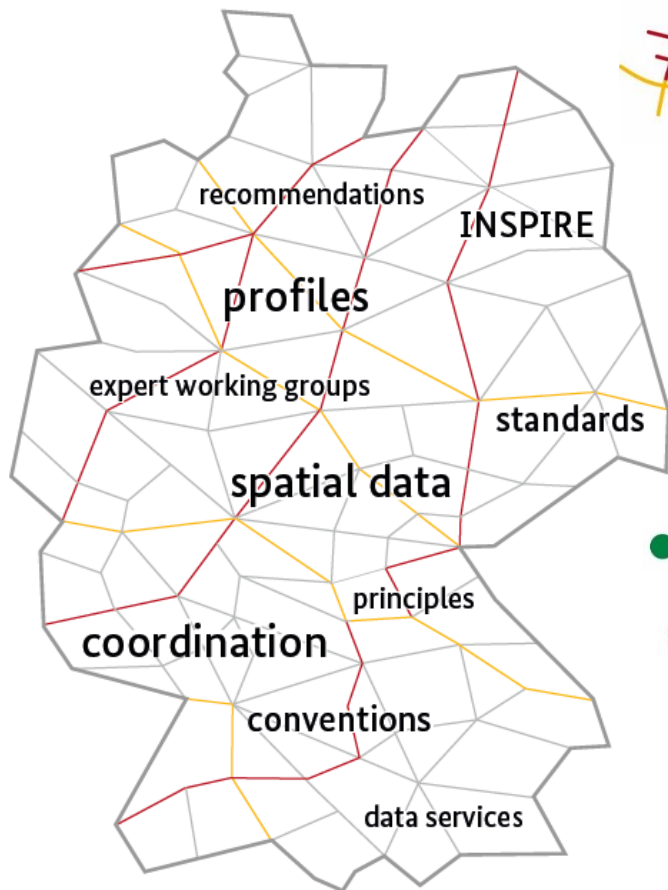


- **Three administrative levels** with various public authorities (Federation, States, Municipalities).
- **Public authorities** are **user and provider** of spatial data sets as well.
- User need to work with spatial data sets **independently from their origin**.
- Providers offering spatial data sets usually **in non-interoperable format for specific purpose**.

- Support interoperability in GDI-DE (common tool)
- Support the implementation process of GDI-DE and INSPIRE (common understanding of the relevant standards and specifications)
- Support INSPIRE Monitoring (conformity indicators)

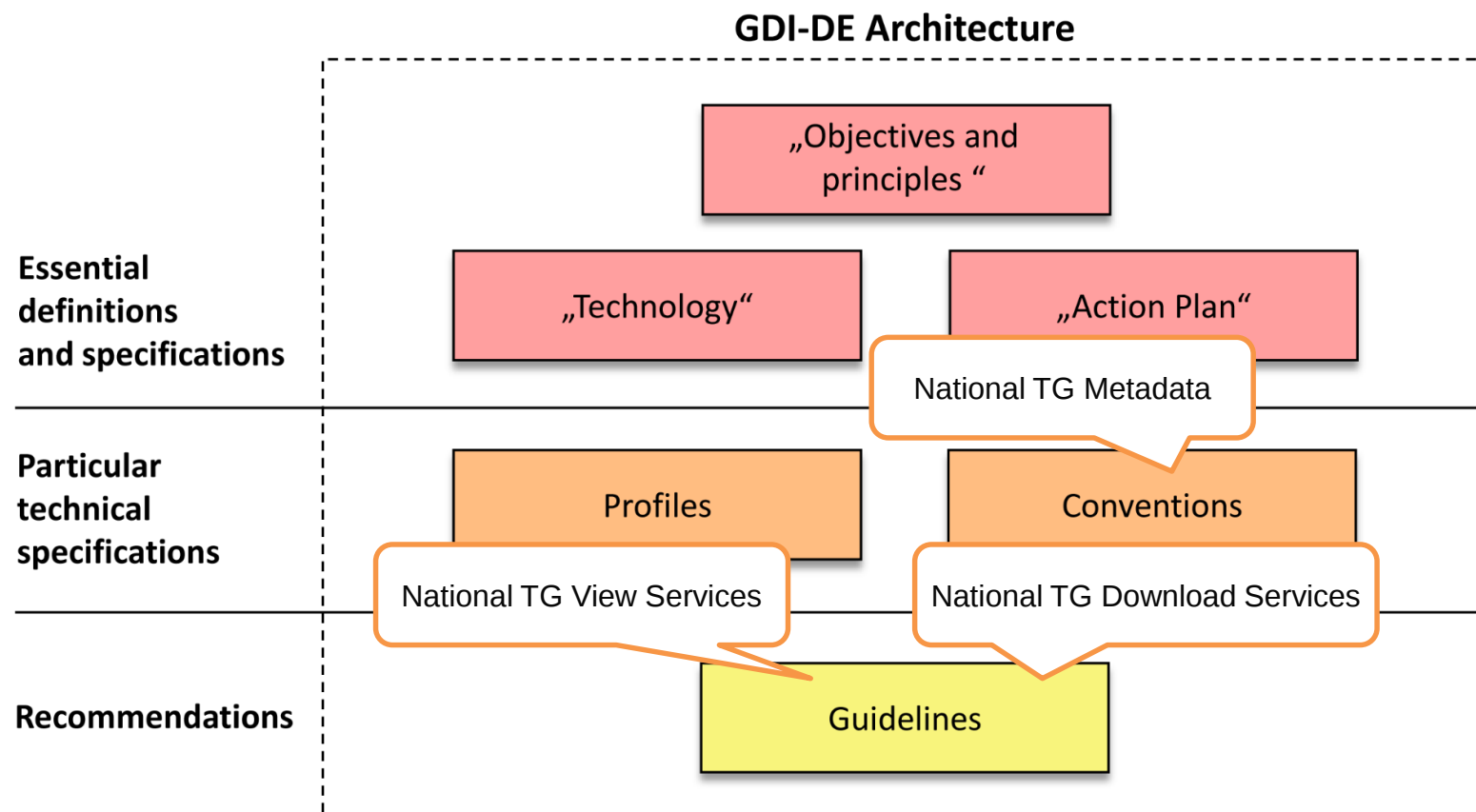






**Networking data –
making better decisions.**

All documents consider INSPIRE regulations and technical guidance documents!



Source: http://www.geoportal.de/SharedDocs/Downloads/EN/GDI-DE/Flyer-Brochures/Infoflyer_Architektur_GDI-DE_en.pdf?__blob=publicationFile

- **INSPIRE/GeoZG:** do my service/data set fulfill the legal requirements?
- **Are my services interoperable**, are they operating together with other services properly?
- **How are the technical requirements** defined in detail?
- And how can we ensure a **common understanding of standards and specifications**?



- One main objective in establishing the German SDI is the interoperable provision of spatial datasets through standardized web services.
- Therefore is necessary to be in compliance with norms and standards from organizations such as ISO (International Organization for Standardization) or OGC (Open Geospatial Consortium).
- Moreover, with the Directive 2007/2/EC of the European Parliament and of the Council establishing an Infrastructure for Spatial Information in the European Community (INSPIRE) there are further technical requirements to enable an Europe-wide usage of spatial datasets and services.
- In order to achieve real interoperability within the German SDI, the provision of a central test environment for checking the conformity of spatial datasets and services with the relevant specifications and standards is quite essential.

- Among others the GDI-DE Testsuite can be used to check, if
 - spatial datasets are accessible and usable,
 - spatial services of the German SDI are functioning with each other and
 - the legal requirements are fulfilled.
- All the implemented test procedures are developed in a coordinated process with different stakeholders of the German SDI. Therefore the GDI-DE Testsuite supports a common interpretation of standards and specifications within the SDI Community.

- The GDI-DE Testsuite is one of the central components of the German SDI.
- As such, it is used by the partners of the GDI-DE **as a common tool for the interpretation and implementation of open standards** recommended in the architectural concept of the German SDI (www.gdi-de.org GDI-DE Dokumente).
- The **GDI-DE Testsuite can be used by everybody** without any restriction.



Handbuch (german)

GDI-DE Testsuite

My Account

[Login](#)[Register](#)

Welcome to the GDI-DE Testsuite, the central testing platform of the GDI-DE!

A short overview...

With the GDI-DE Testsuite, you can test your datasets and services for conformity to the standards used by the GDI-DE to enable an interoperable exchange of geodata. For this purpose, the following tests are at your service:

- GDI-DE Metadata
- INSPIRE Metadata
- OGC CSW 2.0.2 AP ISO 1.0
- OGC WMS 1.1.1 und 1.3.0
- INSPIRE Discovery Service
- INSPIRE View Service

The GDI-DE Testsuite is one of the central components of the [GDI-DE architecture](#) (german only) and serves as a quality assurance testing platform inside the GDI-DE.

To use the GDI-DE Testsuite, you first have to register an account. In case you already have an account, you may login in the box below.

Login

Username:

Password:

[Forgot password?](#)

 Login

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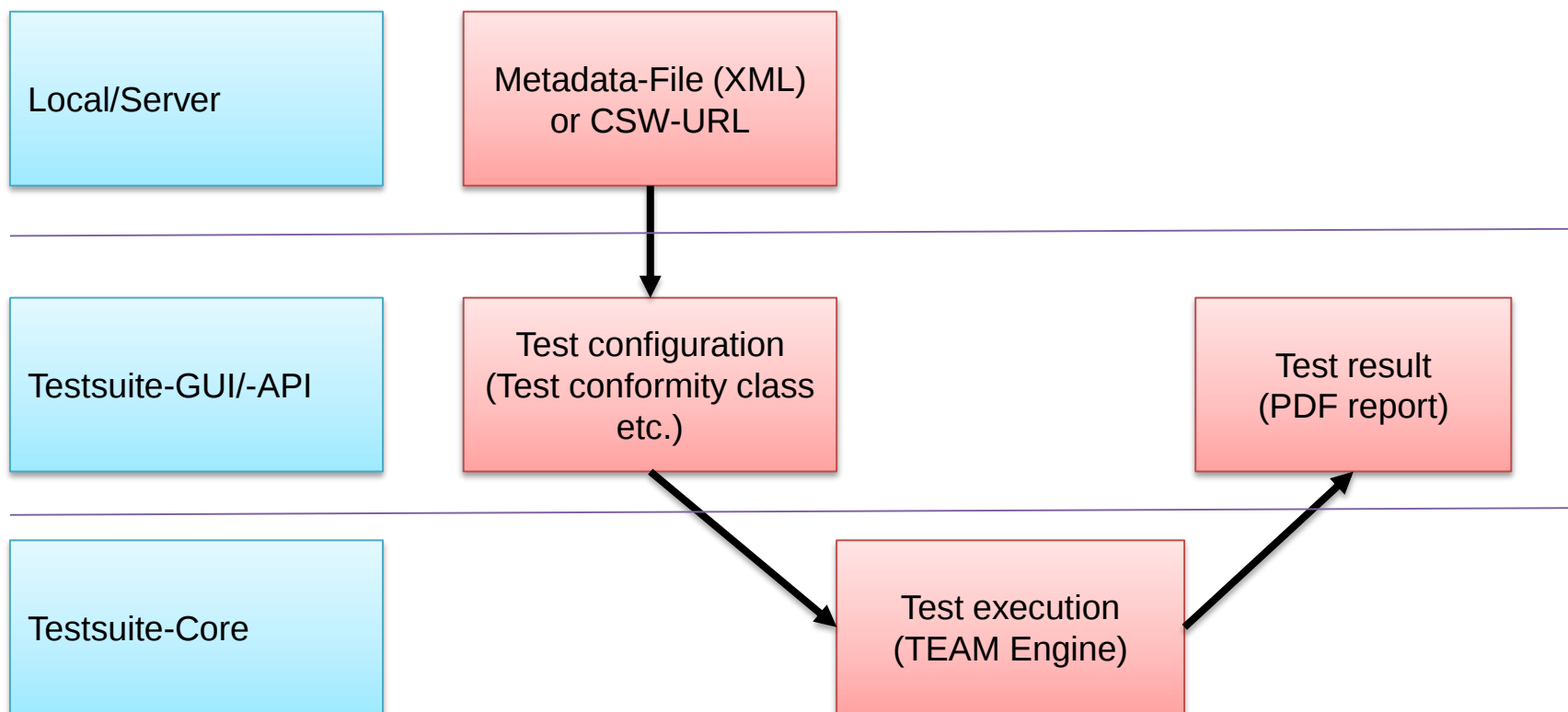
- **Central testing platform** for sustainable quality management
- The quality of the Spatial Data Infrastructure Germany (GDI-DE) depends above all on the degree of accessibility of existing spatial data
- **From a technical point of view** interoperable provision of spatial data by compliance with open standards is the key to data accessibility
- **The GDI-DE Testsuite supports** users with the interoperable provision of data within the GDI-DE and beyond

- Based on OGC TEAM Engine v4, test languages: Compliance Test Language (CTL), TestNG

“The Test, Evaluation, And Measurement (TEAM) Engine is a test script interpreter. It executes test scripts written in Compliance Test Language (CTL).”

“Compliance Test Language is an XML grammar for documenting and scripting suites of tests for verifying that an implementation of a specification complies with the specification.”

```
<ctl:test name="md_292">
  <ctl:param name="response"/>
  <ctl:assertion>Conditions applying to access and use must be described
at least once for the resource</ctl:assertion>
  <ctl:comment>Implements INSPIRE Metadata Implementing Rules 2.9.2
Conditions applying to access and use</ctl:comment>
  <ctl:code>
    <xsl:if test="not($response//gmd:identificationInfo[1]/*/
gmd:resourceConstraints/*/gmd:useLimitation) ">
      <ctl:message>FAILURE: There must be at least one free
text statement on Conditions applying to access and use for the resource but
none was found.</ctl:message>
      <ctl:fail/>
    </xsl:if>
  </ctl:code>
</ctl:test>
```



- **Conformity tests for:**
 - Metadata (ISO, INSPIRE, GDI-DE)
 - Catalogue Services (OGC/ISO CSW, INSPIRE Discovery Service)
 - Web Map Services (OGC/ISO WMS, INSPIRE View Service)
 - Download Services (INSPIRE Download Service)
- **INSPIRE Quality of service tests** (availability, performance)
- **Options of usage:**
 - Online application (testsuite.gdi-de.org)
 - SOAP-API (<http://testsuite.gdi-de.org/gdi/download?id=wsdl>)
 - Local installation and use
 - GIT source code repository (<https://ims.geoportal.de/git/project/testsuite>)



[Handbuch \(german\)](#)

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Test management

Test reports

Testsuite API

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Ticket form

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- OGC CSW 2.0.2 AP ISO 1.0
- OGC WMS 1.1.1 und 1.3.0
- INSPIRE Discovery Service
- INSPIRE View Service
- INSPIRE Direct Access Download Service based on WFS
- INSPIRE Pre-Defined Dataset Download Service based on WFS
- INSPIRE Download Service Atom Implementation
- Konventionen der GDI-DE für INSPIRE-relevante Metadaten ([new](#))
- Konventionen der GDI-DE für ISO-konforme Metadaten ([new](#))

The GDI-DE Testsuite is one of the central components of the [GDI-DE architecture](#) (german only) and serves as a quality assurance testing platform inside the GDI-DE.

At **Test management**, you have access to all tests provided by the GDI-DE Testsuite. Just pick the tests of your choice and apply them to any dataset or service you want to be tested. It is also possible to automatically repeat the test at a defined interval and let the Testsuite inform you about the results per E-Mail.

Results of finished tests are available under **Test Results**. Here, simple and detailed information about the testing progresses can be displayed, downloaded and printed.

Note that **Hints** have been placed at various locations to explain the functions of the Testsuite and help you achieve your desired results. These hints can be recognized by the symbol:  In case of problems or questions about the application, please contact the [Administrator](#).

The GDI-DE Team wishes you a lot of fun!

Note: Certain functions of the Testsuite require popup windows to be opened. Please deactivate any popup blockers or adjust them accordingly.

Version 2.1.27

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- The GDI-DE Testsuite platform is available for all participants of the national SDI. Currently,
 - around 1000 registered users
 - have setup >10.000 test configurations
 - and are executing > 300 tests each day
- Additions of GDI-DE Testsuite software to OGC TEAM Engine:
 - Echo3 (Java-Framework) based web interface
 - PostgreSQL database backend (users, test configurations, test results)
 - Scheduled test execution with e-mail notification (on error situations)
 - Continuous quality of service testing (performance and availability) and reporting (hourly, daily, weekly, monthly, yearly aggregation)
 - Additional level of grouping: multiple test packages („conformance classes“), configurable as required or optional, build one „test class“

- **Structure of tests**
 - (admin) Definition of conformity classes as CTL/TestNG-packages
 - (admin) Combination of conformity classes as required or optional to form test classes
 - (user) Creation of test configurations using one test class, choosing optional conformity classes
- **Example:**
 - Test class:
 - Download Services: INSPIRE Download Service Atom Implementation
 - Conformity classes:
 - INSPIRE Requirements - Predefined Atom (required)
 - INSPIRE Recommendations - Predefined Atom (optional)

GDI-DE

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GDI-DE Testsuite

New test

Configure test

Name:

Test class:

Description:

Conformity classes (mandatory):

Class	Description	Downloads
☒ INSPIRE Requirements Direct WFS 2.0	INSPIRE Direct Access Download Service based on WFS 2.0	

Conformity classes (optional):

Class	Description	Downloads
☐		

Quality of Service:

☒ Dienstqualitätsanforderungen an INSPIRE Downloaddienste (Download Services)	Prüfung der Dienstqualität (Leistung, Verfügbarkeit) von INSPIRE Downloaddiensten auf Basis der Anforderungen der Verordnung (EG) Nr. 976/2009 zur Durchführung der INSPIRE-Richtlinie hinsichtlich Netzdienste. Grundlage ist das Technical Guidance for INSPIRE Download Services, Version 3.1 vom 09.08.2013.
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Dataset/Service to be tested:

☒ URL:

☐ Server requires authentication

☐ File: Keine Datei ausgewählt.

Save test report:

☒ No ☐ Yes ☐ On error

E-Mail notification:

☒ No ☐ Yes ☐ On error

Execution Repeat:

☒ from to

- Automation of tests
 - Scheduled re-execution of conformance test-configuration
 - E-Mail notification of test results
 - Quality of service checks

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GDI-DE Testsuite

Test report for test "LRA Sächsische Schweiz Osterzgebirge INSPIRE Landschaftsschutzgebiete WMS Metadaten"

▶ [Help](#)

[Back to test configurations](#)

 [Back to results](#)

Conformity classes ^(?)

Result	Name					
	Metadata: ISO Requirements	20	0	0		
	Metadata: GDI-DE Conventions	5	0	1		

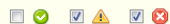
Details

Name: Metadata: GDI-DE Conventions

Description: Prüft Konventionen zur Erfassung von Metadaten innerhalb der GDI-DE unter Berücksichtigung der Standards EN ISO 19115 und ISO 19119. Grundlage ist das Dokument Konventionen zu Metadaten der Geodateninfrastruktur Deutschland (GDI-DE) vom 21.10.2011 (http://www.gdi-de.org/download/AK/111021_GDI-DE_Konventionen_Metadaten1.pdf). Checks GDI-DE conventions regarding metadata with respect to EN ISO 19115 and ISO 19119. The test cases are based on the document Konventionen zu Metadaten der Geodateninfrastruktur Deutschland (GDI-DE) of 21.10.2011 (http://www.gdi-de.org/download/AK/111021_GDI-DE_Konventionen_Metadaten1.pdf).

Executed on: 1/28/16 4:01 PM

Tested resource: <http://www.geomis.sachsen.de/soapServices/CSWStartup?service=CSW&request=GetRecordById&Version=2.0.2&id=26209e68-4a91-4488-9ec4-e5acbafe40f7&outputSchema=http://www.isotc211.org/2005/gmd>



Result	Name	Requirement	Message
	conventions.start	Testing Metadata According to GDI-DE conventions	
	conventions.dataServiceCoupling.metadataIdentifier	The service-metadata document must reference a metadata document about the data it operates on. Furthermore, a metadata identifier must be given and must be identical to the identifier of the referenced data-metadata document.	- FAILURE: The service URL was retrieved from <code>"/gmd:identificationInfo[1]/srv:SV_ServiceIdentification/srv:containsOperations[fn:lower-case((/"/srv:operationName/gco:CharacterString[1]) = "getcapabilities")]/"/srv:connectPoint"/gmd:linkage/gmd:URL/text()</code>. The same URL should additionally be given at <code>"/gmd:distributionInfo/gmd:MD_Distribution/gmd:transferOptions/gmd:MD_DigitalTransferOptions/gmd:online/gmd:CI_OnlineResource/gmd:linkage/gmd:URL/text()</code>, but the two retrieved URLs did not match (http://www.landratsamt-pirmas.de/INSPIRE/SO_LSG_25_OHNE_SW !=). - An error occurred during testing: Error in call to extension function {public org.w3c.dom.NodeList com.occamlab.te.TECore.request(org.w3c.dom.Document, java.lang.String) throws java.lang.Throwable}; Exception in extension function javax.xml.transform.TransformerException: org.xml.sax.SAXParseException; Premature end of file.

- Tool for testing services and metadata against different standards (INSPIRE, GDI-DE)
- Based on OGC TEAM Engine plus user management, GUI, quality of service tests etc.
- Next step: Redevelopment
 - new Java-Framework
 - Better usability and performance
 - Integration of the new tests defined by INSPIRE/JRC

Questions?

Thank you for your attention!

Contact

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