

Persistent Identifiers

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- URN: a standard in the world of internet
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- PI in Praxis: the project Epicur in DDB
- Conclusions/Summary



Identification of cars

Number plate

- non stable
- can be a fake
- small functionality
- non global
- opaque

Chassis number

- reliable
- persistent
- appropriate functionality (resolution!)
- global
- transparent
- unique

The daily experience

Address http://www.one-name.org/cgi-bin/search.pl?find=1141

Google Search Web 668 blocked

The page cannot be found

The page you are looking for might have been removed, had its name changed, or is temporarily unavailable.

Please try the following:

- If you typed the page address in the Address bar, make sure that it is spelled correctly.
- Open the www.one-name.org home page, and then look for links to the information you want.
- Click the [Back](#) button to try another link.
- Click [Search](#) to look for information on the Internet.

HTTP 404 - File not found
Internet Explorer

IBM Global Services: Error - File not found - Microsoft Internet Explorer

Adresse <http://www-1.ibm.com/services/us/index.wss/mp/imc/xt/a1002666>

IBM North America

Search

Select a country

IBM Global Services

Industries

Business & technology topics

IT services

Training

Conferences & events

Services A-Z

IBM Global Services search

Related links:

IBM Business Partners

Career opportunities

News

We have recently re-designed our [IBM Global Services](#) site to allow you to gather the information that is important to you based on your interests and needs. Accordingly, you can review information regarding our service offerings in terms of

- the [Industries](#) they support,
- the [Business & technology topics](#) they address, or
- the overall [IT service categories](#) into which they fall.

With our [Services A-Z](#) page, you can also review a comprehensive list of our service offerings if you know the type of offering in which you are interested.

A little help finding the information you're after

If you've come to this page as a result of choosing a bookmarked page from our previous site, we can hopefully help you easily find similar pages in the new site.

If you were interested in...	please review this new page
Application Management Services	Application management
Business Consulting Services	Business Consulting Services
Business Continuity and Recovery Services	Business continuity and recovery
e-business Hosting Services	Outsourcing / Hosting
Networking Services	Networking
Integrated Technology Services	IT infrastructure services
Strategic Outsourcing Services	Outsourcing / Hosting

Start Microsoft PowerPoint - [...] Dokument1 - Microsoft ... IBM Global Services: E...

Persistence in the WEB

- 16% links after 6 months (T.Dowling)
 - 50% after 24 months (British Library)
 - 87% since 1998 (OCLC)
- are ***broken links***
- 13% of article publications: after 27 months not available (Science)
-
- **So we need: An adequate service to handle the changing locators in the WEB → Persistent Identifiers**

Features of the expected service

- unique
- global
- resolvable
- reliable
- And: Governance → policy
- And: Resolution agencies
- And: Registration agencies

History & standardization

- (1966: ISBN)
- 1994: World Wide Web (WWW)
- Tim Berners-Lee: „universal document identifier“ (1992!)
- 1994: RFC 1738 Uniform Resource Locator (IETF)
- 1998: URI Generic Syntax
- 2004: URI:info (first draft)

Terminology

RFC 2396

**URI -
Uniform
Resource Identifier**

Identification of an abstract
or physical resource

**URN -
Uniform
Resource Name**

**URL -
Uniform
Resource Locator**

**URC -
Uniform
Resource Characteristic**

- Persistent naming of resources.

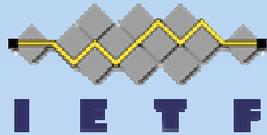
- Identification of a resource (name)
- locate a resource by describing its primary access mechanism

- Characteristics of a resource e.g. meta information

Registered URI-Schemes

Scheme Name -----	Description -----	Reference -----
urn http://www.iana.org/assignments/urn-namespaces	Uniform Resource Names	[RFC2141]
ftp	File Transfer Protocol	[RFC1738]
http	Hypertext Transfer Protocol	[RFC2616]

[... more than **40** URI SCHEMES]
<http://www.iana.org/assignments/uri-schemes>



„Uniform Resource Name“ (URN)



Syntax: URN:NID:NISS **Example:** urn:nbn:de:gbv:089-321752945

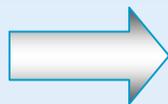
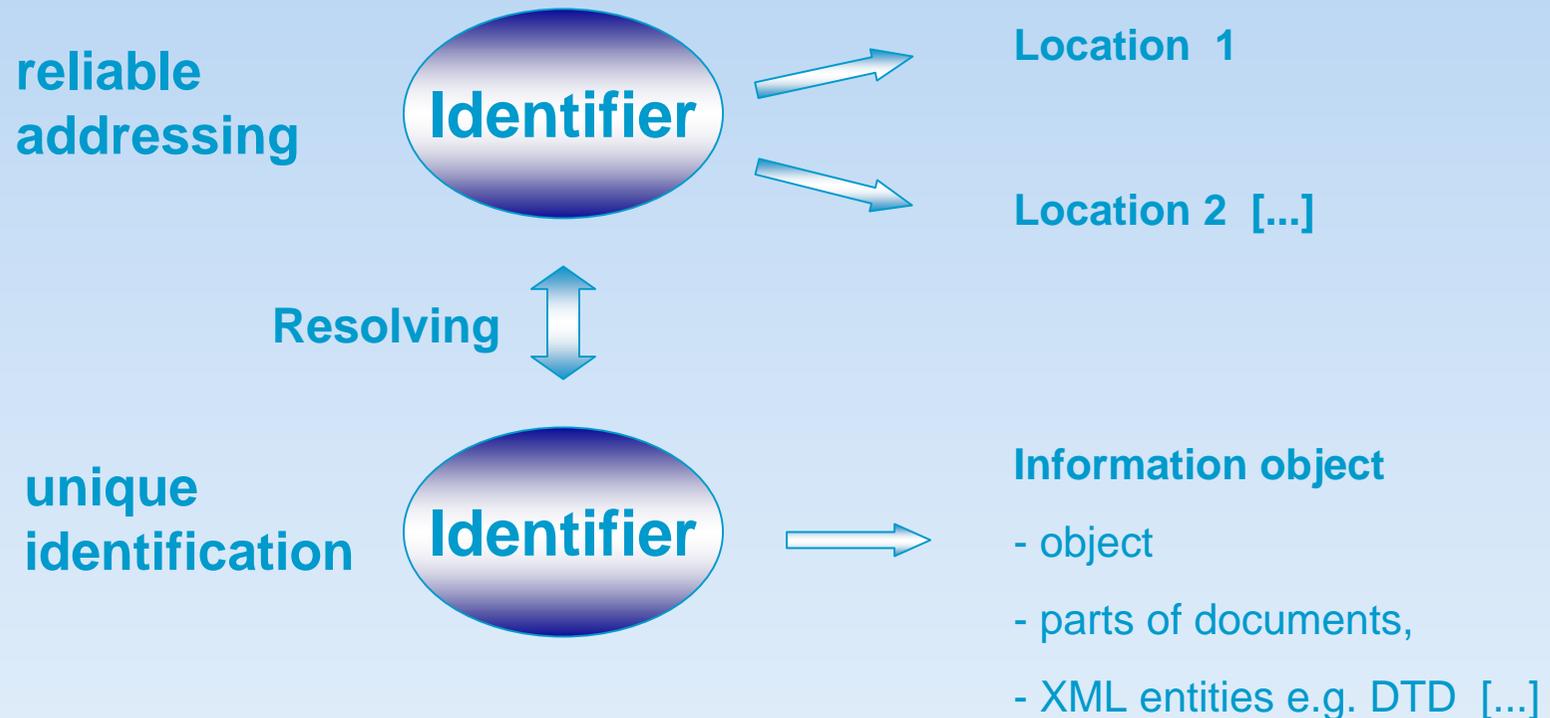
NID: name space identifier e.g. ISBN, ISSN und NBN

NISS: name space specific string

Standardization:



Scope of Persistent Identifiers



combination of unique identification and reliable addressing (location independent)

Persistent Identifiers currently in use (partly propriete)

DOI - Digital Object Identifier (DOI-F)

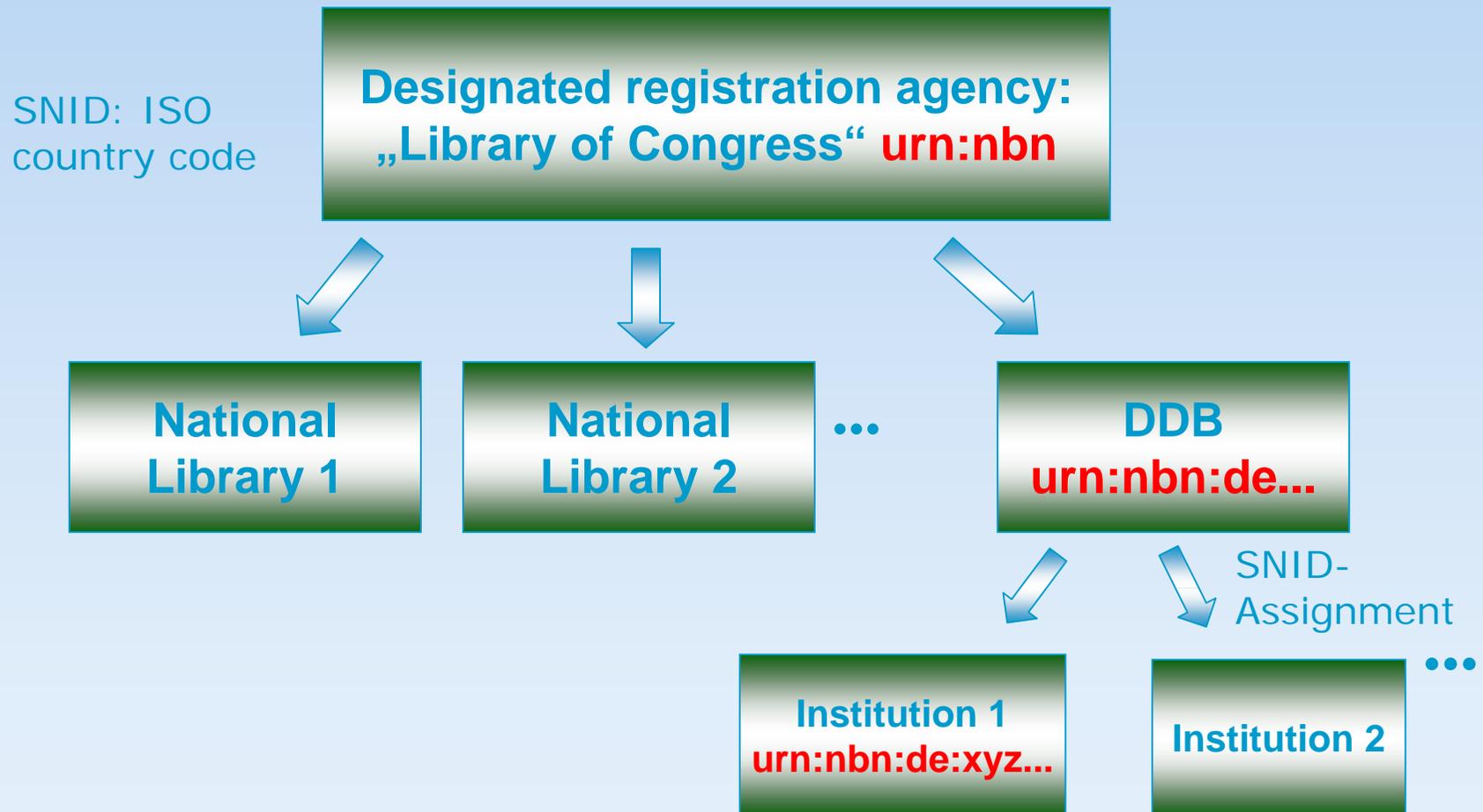
Handle - Handle System (CNRI)

 **URN** - Uniform Resource Name (IETF)

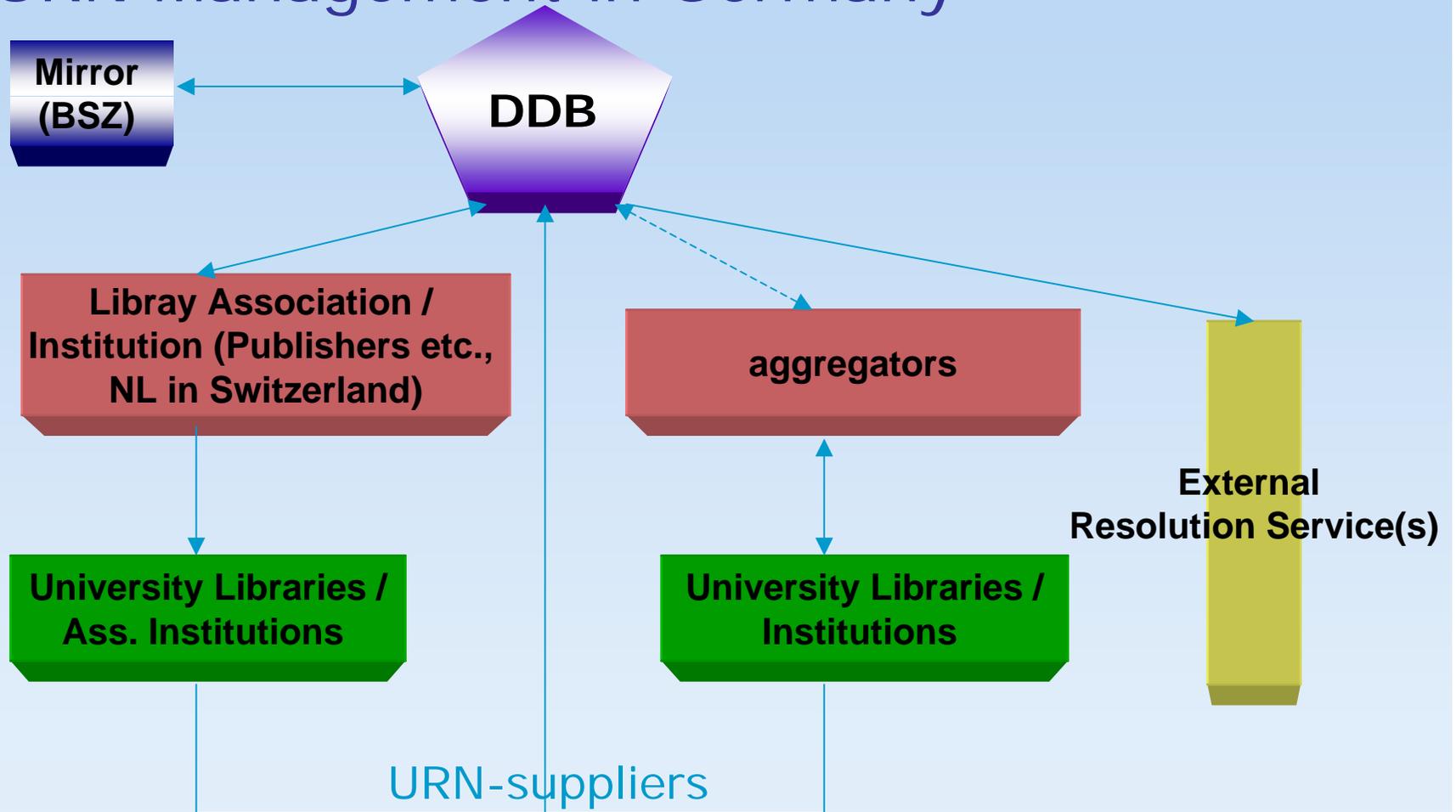
ARK - Archival Resource Key (CDL)

PURL - Persistent Uniform Resource Locators (OCLC)

The international name space „NBN“



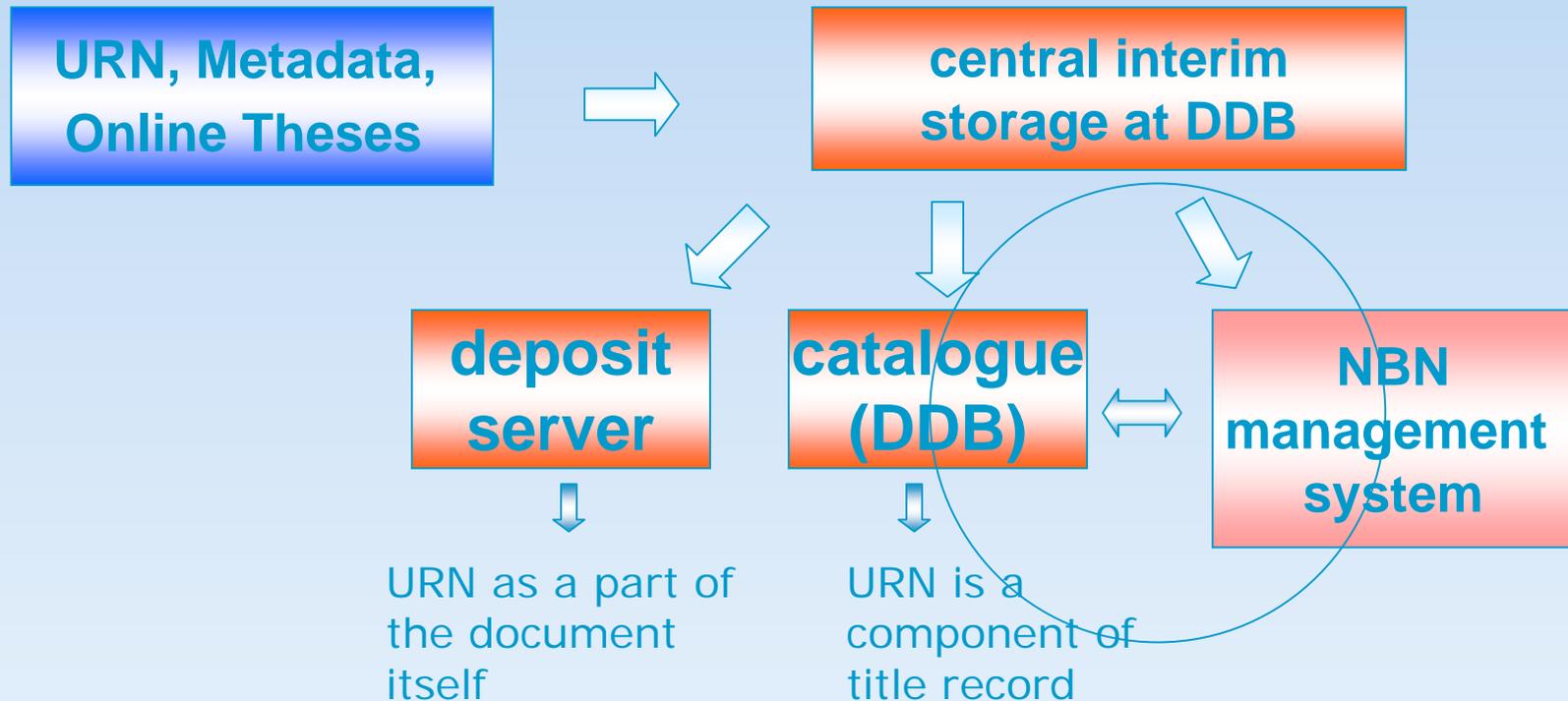
Technical and organisational Infrastructure of URN Management in Germany



URN Implementation at Die Deutsche Bibliothek: URN Registration Process

University library

Die Deutsche Bibliothek





URN-Assignment – materials/objects in DDB

Online dissertations	urn:nbn:de:gbv:089-3321752945
Publisher publications	urn:nbn:de:0002-0104
Reports	urn:nbn:de:0001-00021, urn:nbn:de:kobv:b103-000011
Conference proceedings	urn:nbn:de:bsz:93-opus-15563
Journals	urn:nbn:de:1111-2004020921
Articles	urn:nbn:de:bsz:93-opus-13482
Videos	urn:nbn:de:0001-00099, urn:nbn:ch:bel-2319
Annual reports	urn:nbn:de:kobv:b103-030012
Monographs	urn:nbn:de:bsz:93-opus-13983
Digitized materials	urn:nbn:de:kobv:b103-030026
Lectures	urn:nbn:de:1111-2004033057
XML namespace	urn:nbn:de:1111-2004033116

Online Public Access Catalogue

DBF-OPAC - Search Full Title - Microsoft Internet Explorer

Adresse <http://opac.dbf.ddb.de:7700/SET=3/TTL=2/SHW?FRST=8>

Deutsche Bibliothek Frankfurt am Main

Suchen UND ?

Sortiert nach Erscheinungsjahr

► [Einschränkende Suchoptionen zurücknehmen](#)

Kurzliste Vollanzeige Suchgeschichte

Suchen UND (Alle Wörter <woe>) : schmidt

eingeschränkt: Materialart

Es gibt 169 Treffer. Dies ist Treffer 8:

Titel: Credit risk modeling with random fields [Elektronische Ressource] / vorgelegt von Thorsten Schmidt

Verfasser: [Schmidt, Thorsten](#)

Erscheinungsjahr: 2003

Umfang/Format: Online-Ressource

Hochschulschrift: Gießen, Univ., Diss., 2003

Persistent Identifier: [urn:nbn:de:hebis:26-opus-12272](http://nbn-resolving.de/urn/resolver.pl?urn=urn:nbn:de:hebis:26-opus-12272)

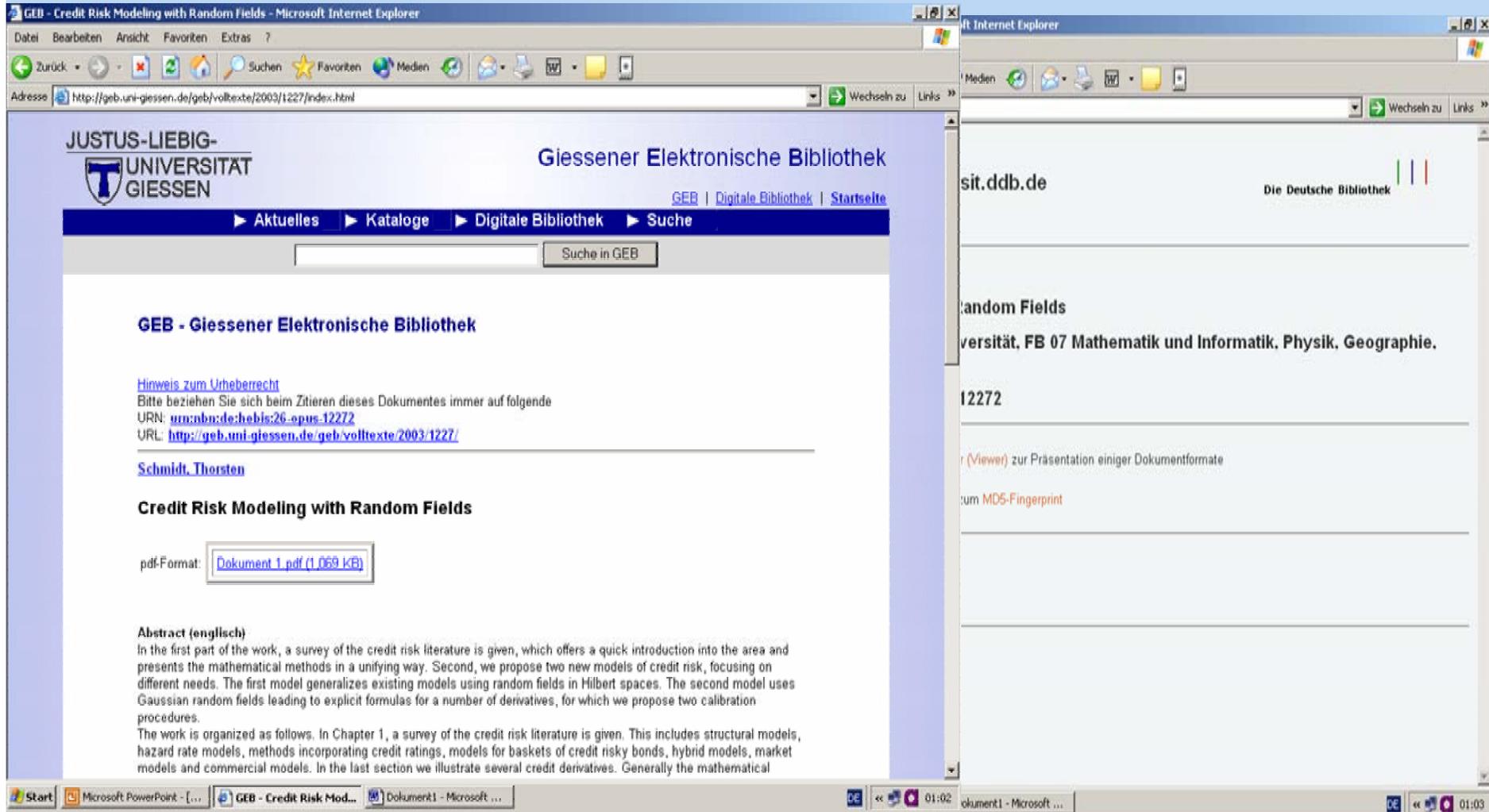
URL: [Archivserver Der Deutschen Bibliothek](#)

Schlagwörter: [Kreditrisiko](#) ; [Stochastische Differentialgleichung](#) ; [Gauß-Zufallsfeld](#) ; Online-Publikation

Sachgruppe: 510 Mathematik ; 330 Wirtschaft

<http://nbn-resolving.de/urn/resolver.pl?urn=urn:nbn:de:hebis:26-opus-12272>

The document



The screenshot shows two browser windows. The main window displays the GEB website for the document 'Credit Risk Modeling with Random Fields' by Thorsten Schmidt. The page includes a search bar, navigation menu, and an abstract in English. The abstract discusses credit risk literature and mathematical models using random fields in Hilbert spaces. The document is available in PDF format (1,059 KB).

The sidebar window shows the 'Die Deutsche Bibliothek' (ddb.de) interface, displaying the document's title 'Random Fields' and its location at 'Universität, FB 07 Mathematik und Informatik, Physik, Geographie.' The document number '12272' is also visible.

The document

The image shows two side-by-side browser windows. The left window displays the GEB (Giessener Elektronische Bibliothek) website. The right window displays the deposit.ddb.de archive page for the document.

Left Window (GEB Website):

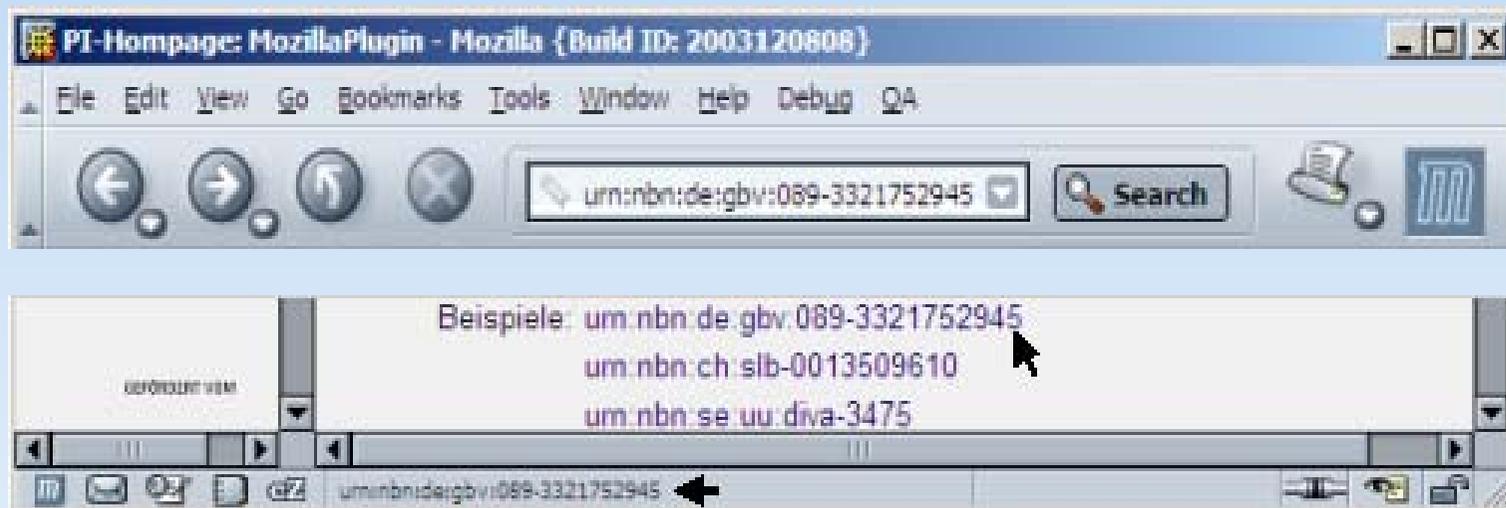
- Address: <http://geb.uni-giessen.de/geb/volltexte/2003/1227/index.html>
- Logo: JUSTUS-LIEBIG-UNIVERSITÄT GIESSEN
- Navigation: Aktuelles, Kataloge, Digitale Bibliothek
- Section: **GEB - Giessener Elektronische Bibliothek**
- Text: [Hinweis zum Urheberrecht](#)
Bitte beziehen Sie sich beim Zitieren dieses Dokumentes immer auf folgende
URN: <urn:nbn:de:hebis:26-opus-12272>
URL: <http://geb.uni-giessen.de/geb/volltexte/2003/1227/>
- Author: [Schmidt, Thorsten](#)
- Title: **Credit Risk Modeling with Random Fields**
- Format: pdf-Format: [Dokument 1.pdf \(1.069 KB\)](#)
- Abstract (englisch):
In the first part of the work, a survey of the credit risk literature is given, which offers a presents the mathematical methods in a unifying way. Second, we propose two new n different needs. The first model generalizes existing models using random fields in Hilb Gaussian random fields leading to explicit formulas for a number of derivatives, for whic procedures.
The work is organized as follows. In Chapter 1, a survey of the credit risk literature is g hazard rate models, methods incorporating credit ratings, models for baskets of credit models and commercial models. In the last section we illustrate several credit derivat

Right Window (deposit.ddb.de):

- Address: <http://deposit.ddb.de/cgi-bin/dokserv?idn=969261918>
- Logo: Archivserver deposit.ddb.de, Die Deutsche Bibliothek
- Author: **Autor : Schmidt, Thorsten**
- Title: **Titel : Credit Risk Modeling with Random Fields**
- Dissertation: **Dissertation : Giessen, Justus-Liebig-Universität, FB 07 Mathematik und Informatik, Physik, Geographie, 2003**
- URN (NBN): **URN (NBN) : urn:nbn:de:hebis:26-opus-12272**
- Document info: **Dokument im Format: pdf**
Dateigröße: ca. 1,0 MB
MDS-Fingerprint des Dokuments
- Links: [Dateibetrachter \(Viewer\)](#) zur Präsentation einiger Dokumentformate
[Informationen zum MDS-Fingerprint](#)
- Metadata: **Dublin Core Metadaten** des Dokuments
- Document taken: **Dokument aufgenommen : 10.11.2003**
- Copyright: **Copyright: Die Deutsche Bibliothek 12.10.2000**

The client (Browser) perspective ...

Plugin



<http://www.persistent-identifier.de/?link=550>

URN-Strategy of DDB

To what can a URN (nbn:de) be assigned and managed?

- objects **currently** archived by Die Deutsche Bibliothek
- objects to be archived in Die Deutsche Bibliothek **in the future**
- objects which will be administered on **certified document servers**
 - Quality criteria e.g. URL-Updating
 - Endeavors by DINI
http://www.dini.de/dini/zertifikat/dini_certificate.pdf
 - perspective of long term preservation
(BMBF project: <http://www.langzeitarchivierung.de>)

URN-Strategy

Principles

- URNs are **valid** after their registration at Die Deutsche Bibliothek
- **URN-Registration** within **24 hours** of their publication on a document server
- **URL-Updating** is mandatory
- In case of a distributed object storage URN must be transferred as part of the
 - metadata or as access mechanism
 - [...]

Recommendations

- URNs should be assigned **as closely as possible to the object.**
- URNs should be a component of **metadata.**
- A character set according to **RFC 1738** for **URLs** should be used.

URN-Management: Additional Transfer Interfaces

- Manual URN administration
 - Web-Interface
<<http://nbn-resolving.org/login.php>>
- Automated URN administration
 - E-Mail-Attachment
 - OAI 2.0
- Integration into administration systems for digital library tools
 - OPUS
 - MyCoRe

URN-Service

PI-Homepage: 610-ResolverDemo - Microsoft Internet Explorer

Adresse <http://www.persistent-identifier.de/?link=610&lang=en> Wechseln zu

Persistent Identifier

...eindeutige Bezeichner für digitale Inhalte...

Home News Overview Activities Service Sitemap Imprint

- Home
- News
- Overview
- + Activities
- + Service
- Sitemap
- Imprint

Demonstration of the URN (NBN:DE) resolver at Die Deutsche Bibliothek

Please enter the URN:

Further Examples

- urn:nbn:de:gbv:089-3321752945
- urn:nbn:ch:bel-9478
- urn:nbn:ch:bel-9039
- urn:nbn:se:uu:diva-3475
- urn:nbn:hu-3006

Return options for URNs ("nbn:de" and "nbn:ch")

- list of URLs
- document directly

Comments

Please, choose whether you would like to receive a list of URLs or the document directly:

- document
If you select "document" you will receive the online publication directly.
- list
All saved URLs belonging to the URN will be returned in a list of URLs

GEFÖRDERT VOM
 Bundesministerium für Bildung und Forschung

Summary

Persistent identifiers offer a tested possibility to provide reliable access to digital objects. So they will become more and more important in the context of long-term preservation.

Questions? Need for further information?

- altenhoener@dbf.ddb.de
- www.persistent-identifier.de