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**ETD 22.05.2003**

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**The application of Persistent Identifiers  
as one approach to ensure long-term  
referencing of Online-Theses**

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**Die Deutsche Bibliothek**

22.05.2003

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**dbp**

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ddb

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# Starting point – deficits: Referencing

Bonario/Thornton. **Library-Oriented Lists and Electronic Serials.**

Formerly compiled by Charles Bailey.

URL: <http://www.wrlc.org/liblists/liblists.htm> ←

**Z39.50 Accessible Library WWW Servers.**

URL: <http://vinca.cnidr.org/reference/reference.html> ←

[<http://www.ifla.org/II/libdoc.htm>]

## Proxy Error

The proxy server could not handle the request

Reason: **Host not found**

*Apache/1.3.23 Server at www.ddb.de Port 80*

suchten (und) Fachnotation Online-Zeitschriften (SGZ) sortiert nach Erscheinungsjahr

135 suchen

Kurzliste Bestandsinfo Titeldaten Suchgeschichte

**Recherche**

Online-Zeitschr. (Fachgebiete)  
Katalogauswahl  
Nutzerdaten (Fernleihe)  
Hilfe  
Ende

Ihre Eingabe war:  
suchen (und) (Fachnotation Online-Zeitschriften (SGZ)) 135  
Es sind 283 Treffer.  
Dies ist Treffer 8.

Zeitschrift: [Quaerendo \[Elektronische Ressource\]](#)  
Erschienen: Leiden : Brill, Nachgewiesen 32.2002 -  
Anmerkung: Online-Ressource  
Weitere Titelhinweise: Druckausg.--> [Quaerendo](#)

Zugang: [Elektronische Adresse](#) [Agentur-Server]  
[Elektronische Adresse](#) [Elektronische Zeitschriftenbibliothek]  
[Elektronische Adresse](#)  
[Elektronische Adresse](#) [Verlagsserver] ←

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[<http://cbsprod.rz.uni-frankfurt.de>]

## Starting point – deficits: Multiple Copies



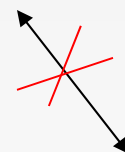
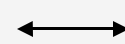
**Information  
service**

**Archive server**

**Digital repository**

**Server of a  
publisher**

**?**  
**reliable  
addressing**



# Starting point – deficits: internal links that guarantee document consistency

## INHALTSVERZEICHNIS:

### 1 Einleitung

### 2 Educación Popular und ihre Bedeutung für Innovationen des Mathematikunterrichts

2.1 Educación Popular als lateinamerikanische Bildungstradition

2.1.1 Kurzer historischer Überblick

2.1.1.1 Beitrag von Simón Rodríguez (1771-1854)

2.1.1.2 Entwicklung der Educación Popular zu Beginn des 20. Jahrhundert

2.1.2 Idee und Methode der Educación Popular

2.1.2.1 Identifikation der Educación Popular mit den Unterdrückten

2.1.2.2 Zentrale Ziele der Educación Popular

2.1.2.3 Die Methode der Educación Popular

Methode	Land	Anzahl der Teilnehmer	Mehr als 10 Jahre Erfahrung	Wichtige Merkmale der Teilnehmer (Tab. 1)					
				Erfahrung Primar- und/oder Sekundar-schullehrer	Erfahrung an der Uni.	Frauen	Männer	Staats-examen Diplom als Lehrer	Magister
Expertenbefragung	Nicar.	12	10	11	7	5	7	12	3
	Venez.	13	13	11	10	7	6	12	10
Curriculumkonferenz	Nicar.	16	13	16	10	7	9	16	7



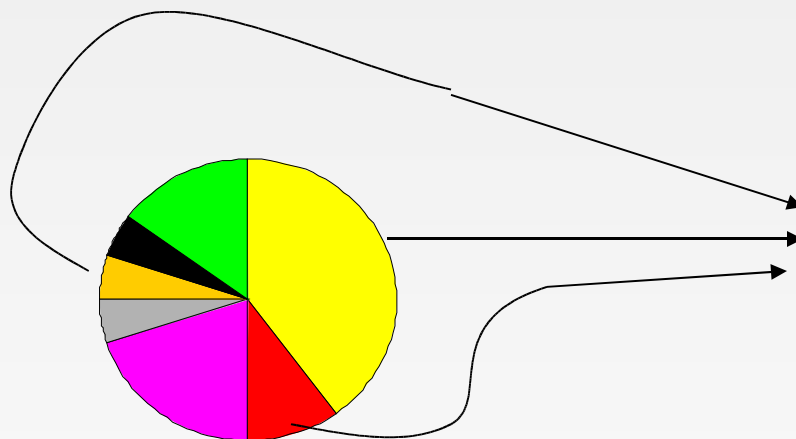
**standardized notation ?**

<http://www.sub.uni-hamburg.de/disse/05/Inhalverzeichnis.html>

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## Starting point – deficits: modular, distributed documents



**Document:**

- Base part
- Module 1 and
- Module 4

base part
  module 1
  module 1
  module 2  
 module 3
  module 4
  other



**permanent addressing  
and identification ?**

[http://address\\_1.dtd](http://address_1.dtd)

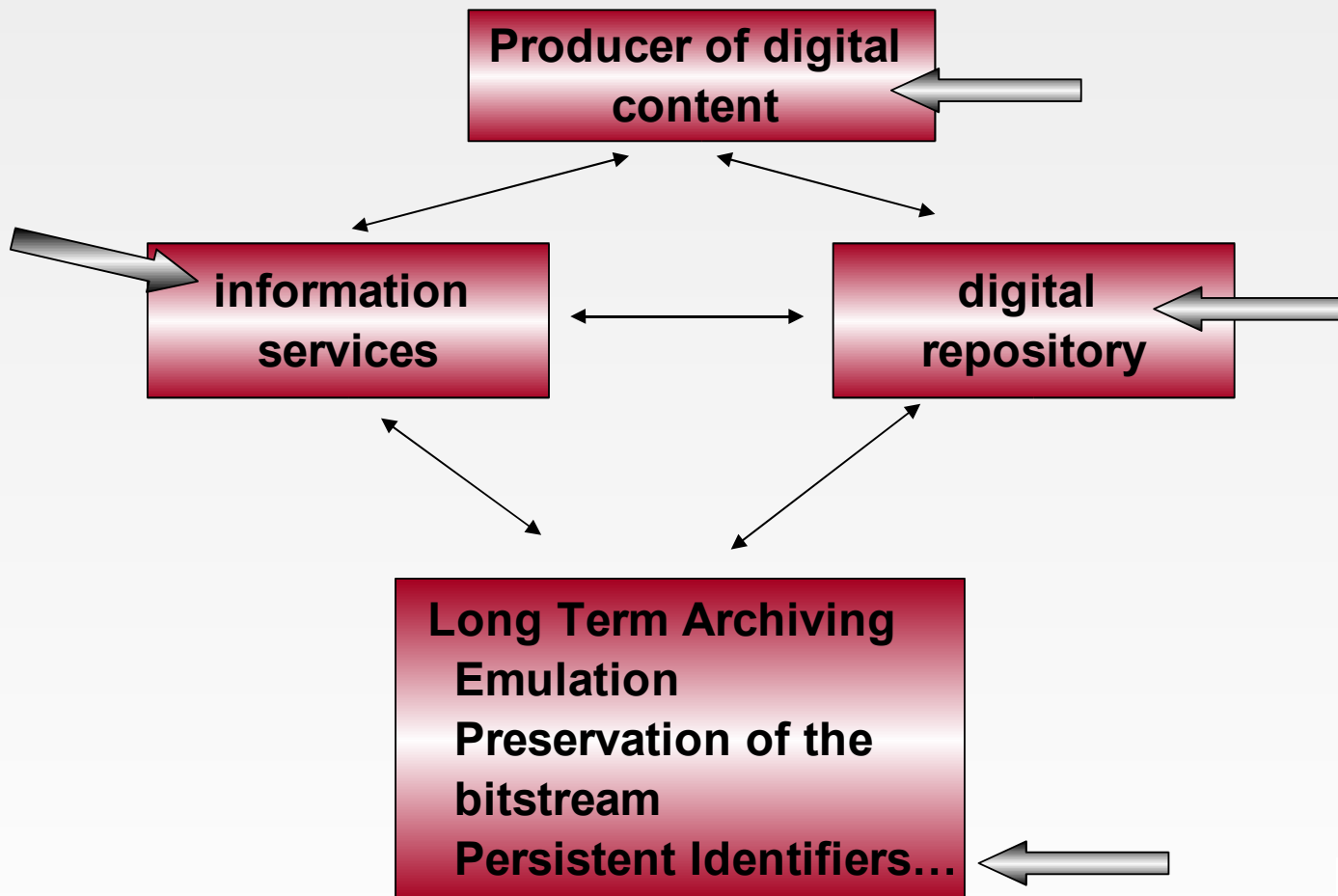
[http://address\\_2.xslt](http://address_2.xslt)

[http://address\\_3.xml](http://address_3.xml)

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## Possible application scenarios of Persistent Identifiers



## Solution in the form of stable URL's ?

### Existing methods to maintain URL's relative constant

- **dynamic** determination of **location address** (e.g. CGI scripts, databases)
- **assignment algorithm** that guarantees a stable URL structure
- configuration of **web server** (redirects, aliases)

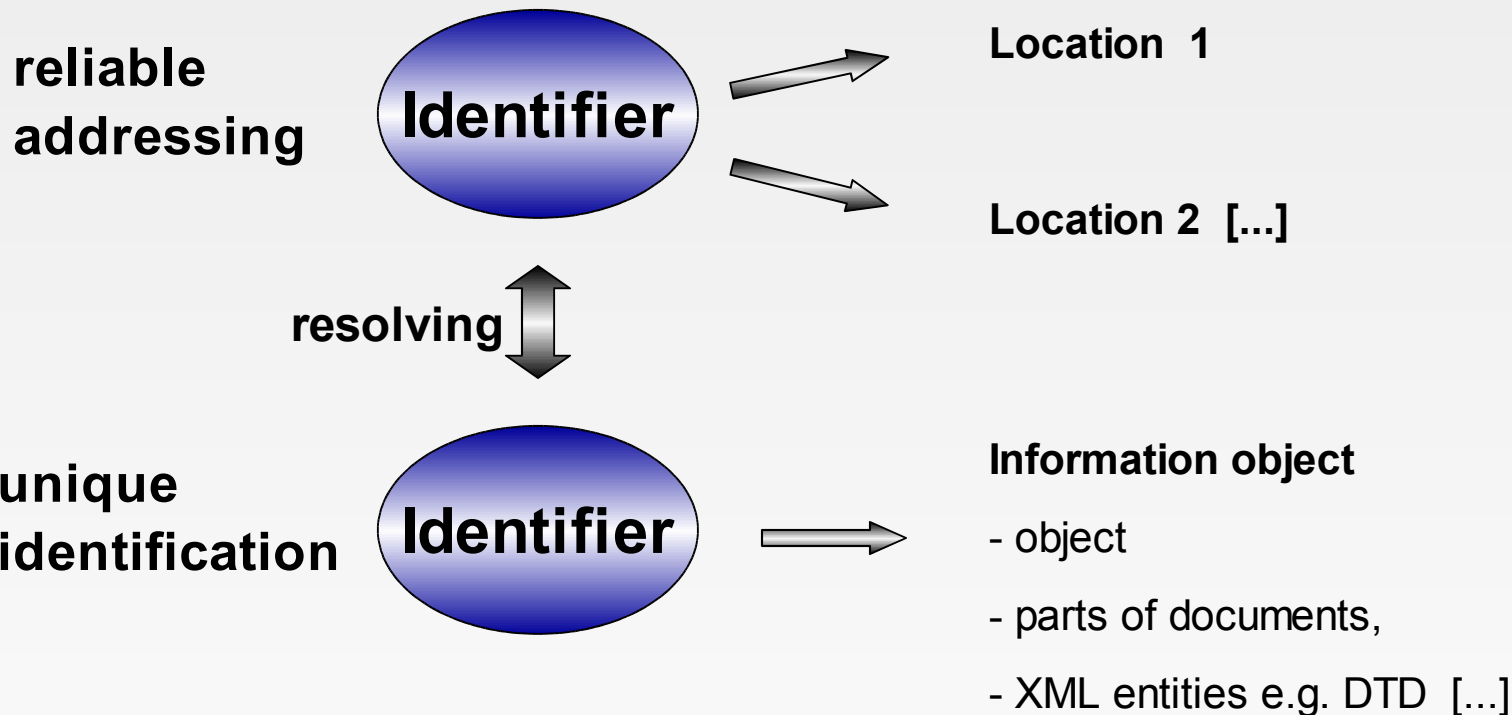
### Deficits

- **no** guarantee of **long-term access** to the digital object
- resources identified by **URL's** refer **only** to the **location**
- **no possibility** to refer to both **several locations** and **different formats** of digital objects

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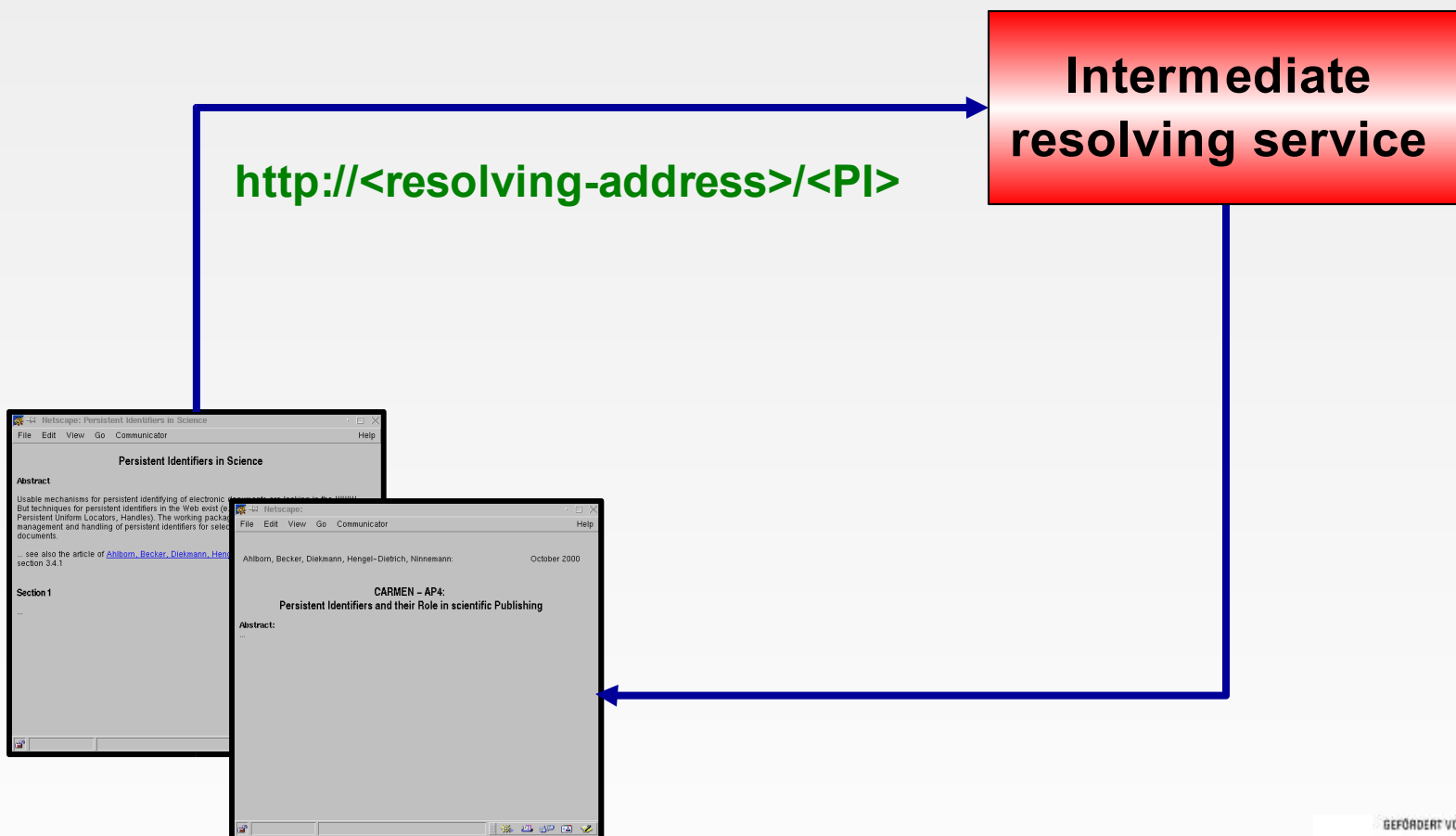
## Solution by the use of Persistent Identifiers !




**combination of unique identification and reliable addressing (location independent)**

diplo

## General approach of a resolving mechanism



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## Persistent Identifiers currently in use

**DOI** - Digital Object Identifier  
(DOI-F)

**Handle** - Handle System (CNRI)

**PURL** - Persistent Uniform Resource Locator (OCLC)

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

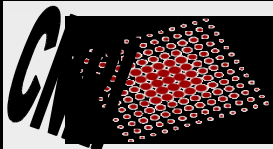
**Combination with other Standard Identifiers e.g.**

**ISBN BICI**

**ISSN SICI PII**

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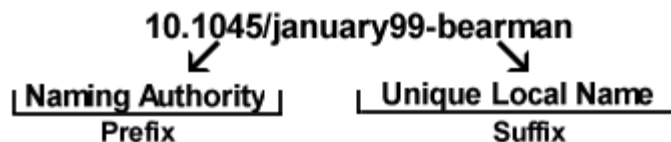


# Handle-System



**Syntax** (<http://www.handle.net/overviews/handle-syntax.html>):

**<Handle> ::= <Handle Naming Authority> "/" <Handle Local Name>**



## Standardization concerning the handle system:

Handle System Overview RFC\*

Handle System Protocol (ver 2.1) Specification RFC\*

Handle System Namespace and Service Definition\*

\*Draft, submitted July 2002 (<http://www.cnri.reston.va.us/publications.html>)

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## Digital Object Identifier (DOI)

### Objective of DOIs:

[...] system for **identifying** and **exchanging** intellectual property in the digital environment. It provides a **framework** for managing intellectual content, for linking customers with content suppliers, for facilitating electronic commerce, and enabling automated copyright management for **all types of media**.[...] (<http://www.doi.org/>)

### Architecture:



### Syntax (ANSI/NISO Z 39.84):

**Prefix / Suffix**

**10.1045/march99-bunker**

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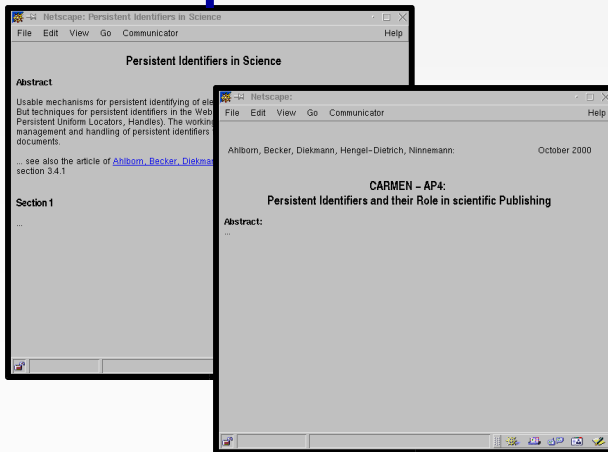
# Persistent URL (PURL)



OC LC ONLINE COMPUTER LIBRARY CENTER, INC.



**http://<resolving-address>/<PURL>**  
**HTTP Standard**



[<http://purl.oclc.org/>]

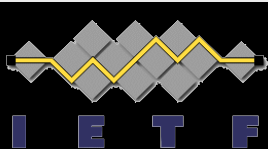
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oai

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# „Uniform Resource Name“ (URN)



## Syntax:

**URN:NID:NISS**

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

**NISS:** name space specific string

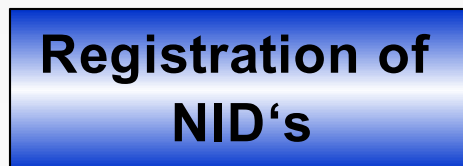
## Standardization:



2141



1737



2611, 2288, 3188, 3187



2915, 2168, 2169, 2276,  
2483 [...]

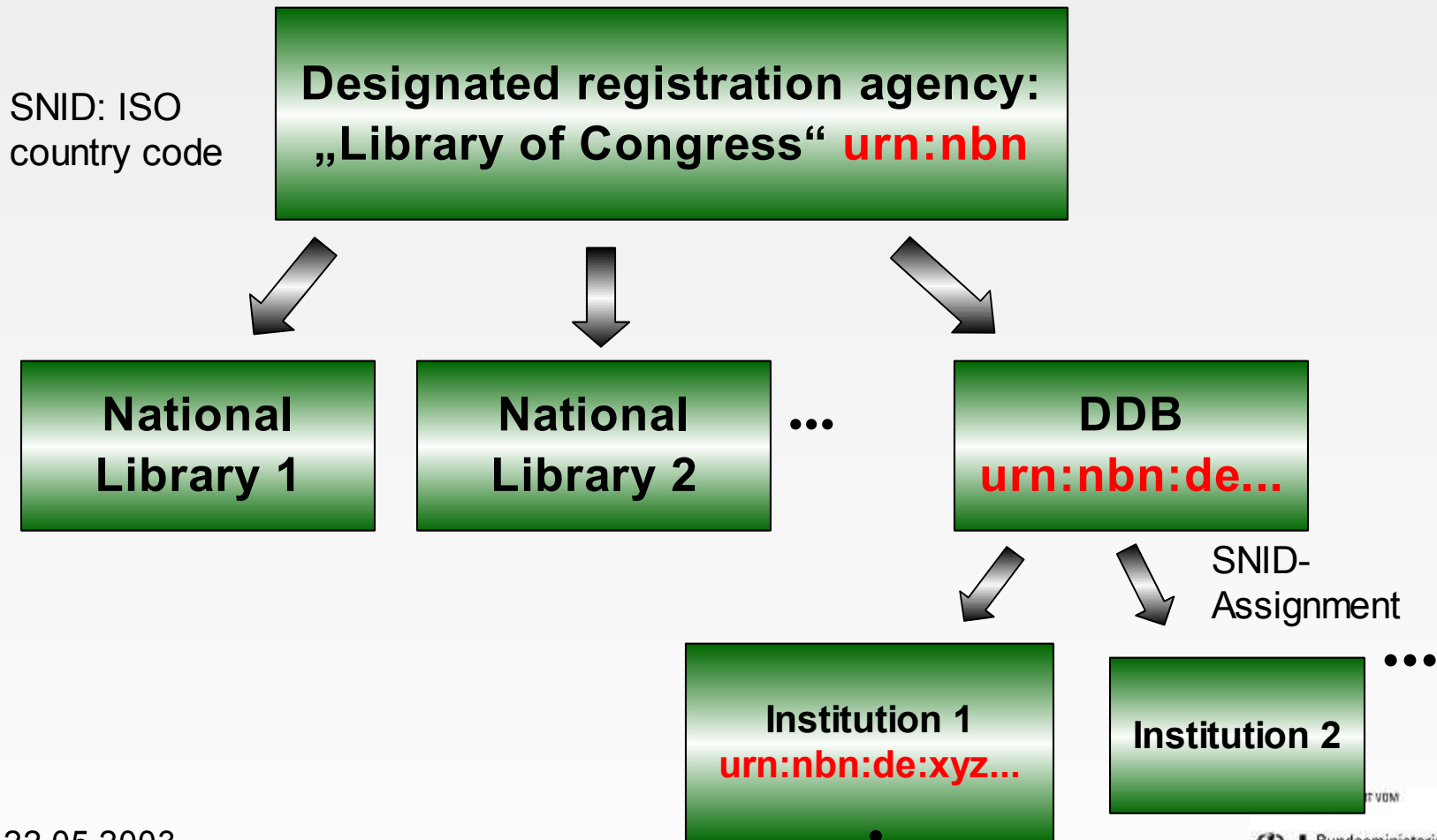
## Persistent Identifier related activities at Die Deutsche Bibliothek

- **Establishment** of an **distributed URN management** with a centralized URN assignment and resolving at Die Deutsche Bibliothek in the framework of the project **CARMEN-AP4** (1999-2002)
  - Test base were Online **theses** and **dissertations**
- Co-operation with **library associations** and **university libraries, publishers, research institutions**
- **Enhancement** of the URN management within the project **EPICUR** (2002-2004)

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# URN Implementation at Die Deutsche Bibliothek: international name space „NBN“



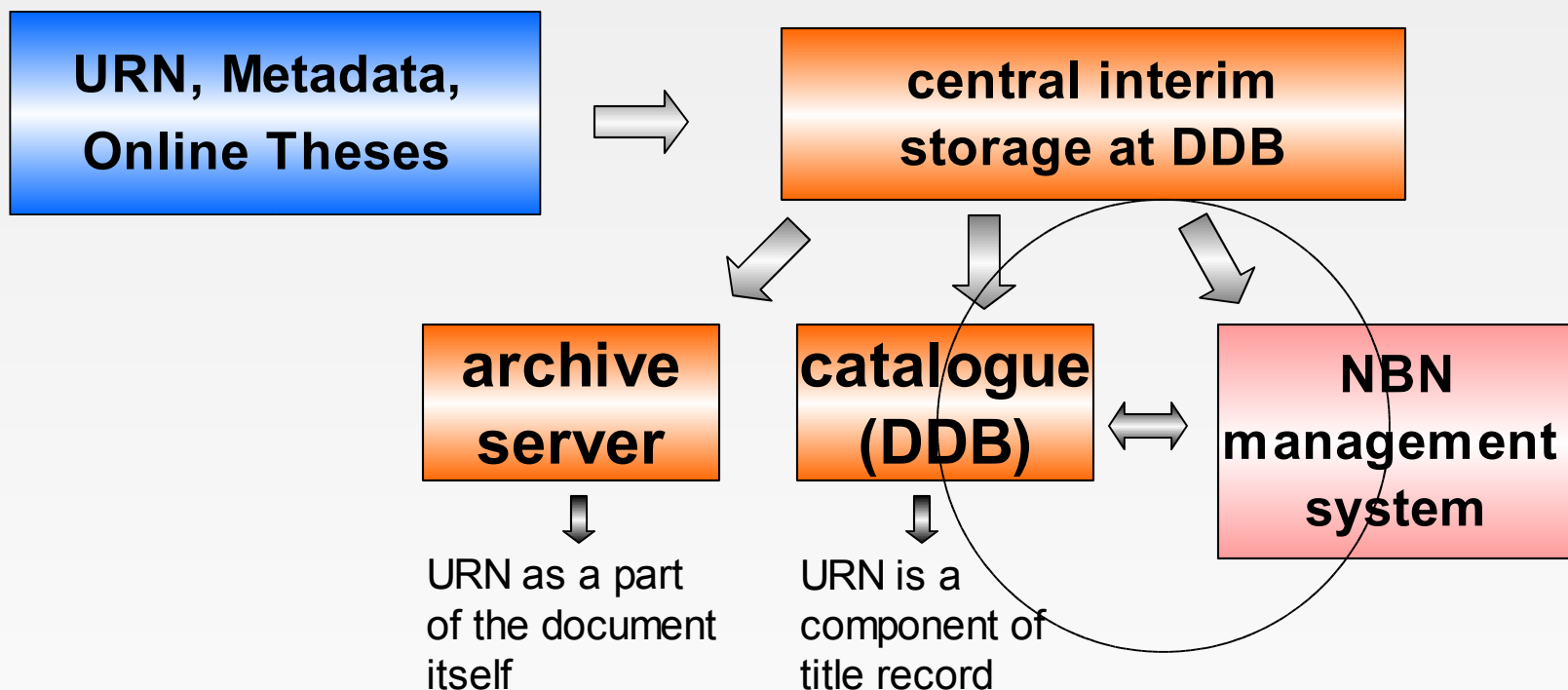
dlib

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# URN Implementation at Die Deutsche Bibliothek: URN Registration Process

University library

Die Deutsche Bibliothek



➔ established registration **workflow** for **online theses and dissertations**

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# URN presentation: OPAC

## Reference from the metadata to the full text

Deutsche Bibliothek Frankfurt am Main

Suchen UND  Standardnummer <num>  ?

Sortiert nach Erscheinungsjahr

Suchen



**Titel:** Nitric oxide in the olfactory epithelium [Elektronische Ressource] / von **Oliver Schmachtenberg**

**Verfasser:** [Schmachtenberg, Oliver](#)

**Erscheinungsjahr:** 2001

**Hochschulschrift:** Hannover, Univ., Diss., 2001

**Persistent Identifier:** [urn:nbn:de:gbv:089-3321752945](http://nbn-resolving.org/urn:nbn:de:gbv:089-3321752945)

**URL:** [Archivserver Der Deutschen Bibliothek](#)

**Sachgruppe:** 33 Medizin ; 32 Biologie



<http://nbn-resolving.de/urn/resolver.pl?urn=urn:nbn:de:gbv:089-3321752945>



# URN presentation: Archive server at Die Deutsche Bibliothek



Archivserver deposit.ddb.de

**Autor :** Schmachtenberg, Oliver

**Titel :** Nitric oxide in the olfactory epithelium

**Dissertation :** Hannover, Universität, Fachbereich Biologie, 2001

**URN (NBN) :** urn:nbn:de:gbv:089-3321752945



Dokument im Format: pdf  
Dateigröße: ca. 2,0 MB  
MD5-Fingerprint des Dokuments



Dateibetrachter (Viewer) zur Präsentation einiger Dokumentformate



Informationen zum MD5-Fingerprint



Dublin Core Metadaten des Dokuments

## URN-Management: Experiences

- **5100 URNs** recorded number of accesses are about **28.000** (since September of 2001)
- **44 University libraries, publishers, research institutions** have applied for the URN management and **29** are active involved
- about **12 % of URL's** of the document server of university libraries are **changed**.
- **fluctuation** of temporary unavailable URL's is high e.g. caused by instable server (within 3 weeks 3 server crashes)
- daily **link check procedure**

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## „Enhancement of Persistent Identifier Services - Comprehensive Method for unequivocal Resource Identification“ (EPICUR) Objectives

### ➤ Organizational Gesichtspunkte

- Establishment of an **infrastructure** for Persistent Identifiers
- **Information bundeling**

### ➤ technical aspects

- **Technical enhancement** of the implemented prototype and migration to more efficient soft- and hardware
- **Efforts** to achieve the implementation of the **resolving mechanism on international level**



**complementary** application of **different** Persistent Identifier systems

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# Thank you !

## Contact at Die Deutsche Bibliothek

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### Homepage

<http://www.persistent-identifier.de>

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