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Joint ICTP-IAEA School of Nuclear Knowledge Management

1 - 5 September 2008

Managing Nuclear Information

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Managing Nuclear Information

Yanko Yanev
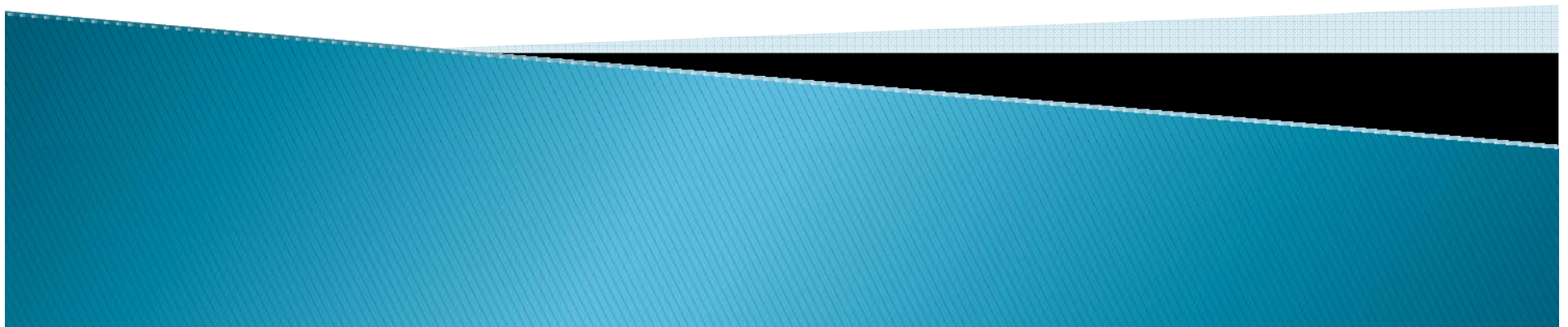Nuclear Knowledge Management Unit

Topics

- Historical aspects

- INIS

- IAEA Nuclear Information Resources

- The Internet

- Future outlook
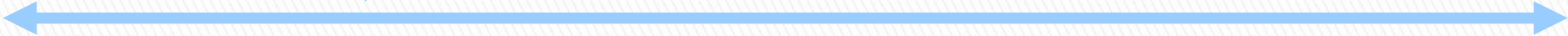
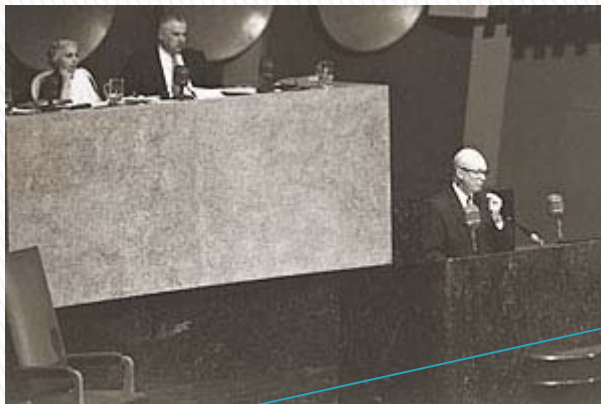# Nuclear Information Management (before INIS)

T

The Early days

Enrico Fermi

Chicago pile 1942

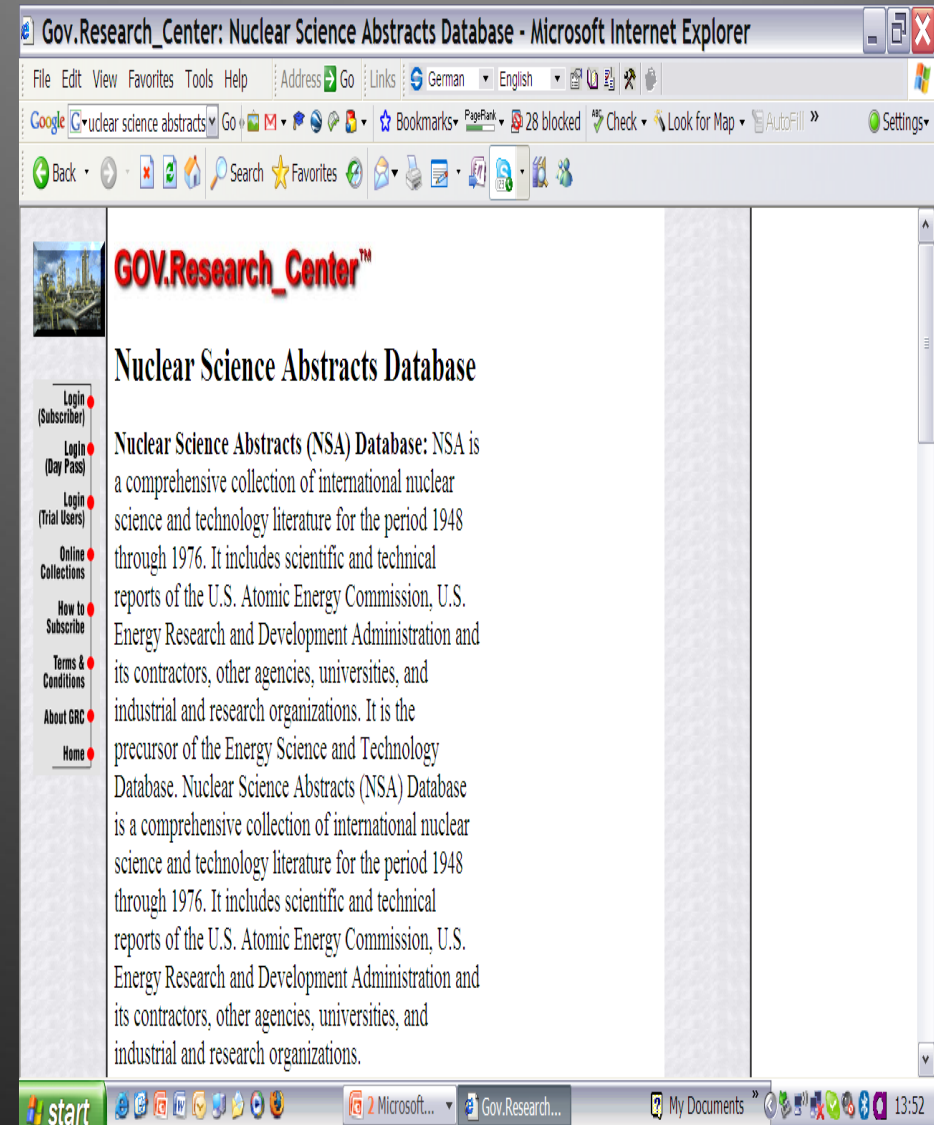1945   1955   1965   1975   1985   2005

The Nuclear Science Abstracts

▸ NSA is a comprehensive collection of international nuclear science and technology literature for the period 1948 through 1976. It includes scientific and technical reports of the U.S. Atomic Energy Commission, U.S. Energy Research and Development Administration and its contractors, other agencies, universities, and industrial and research organizations.
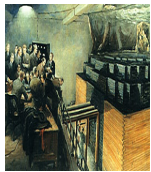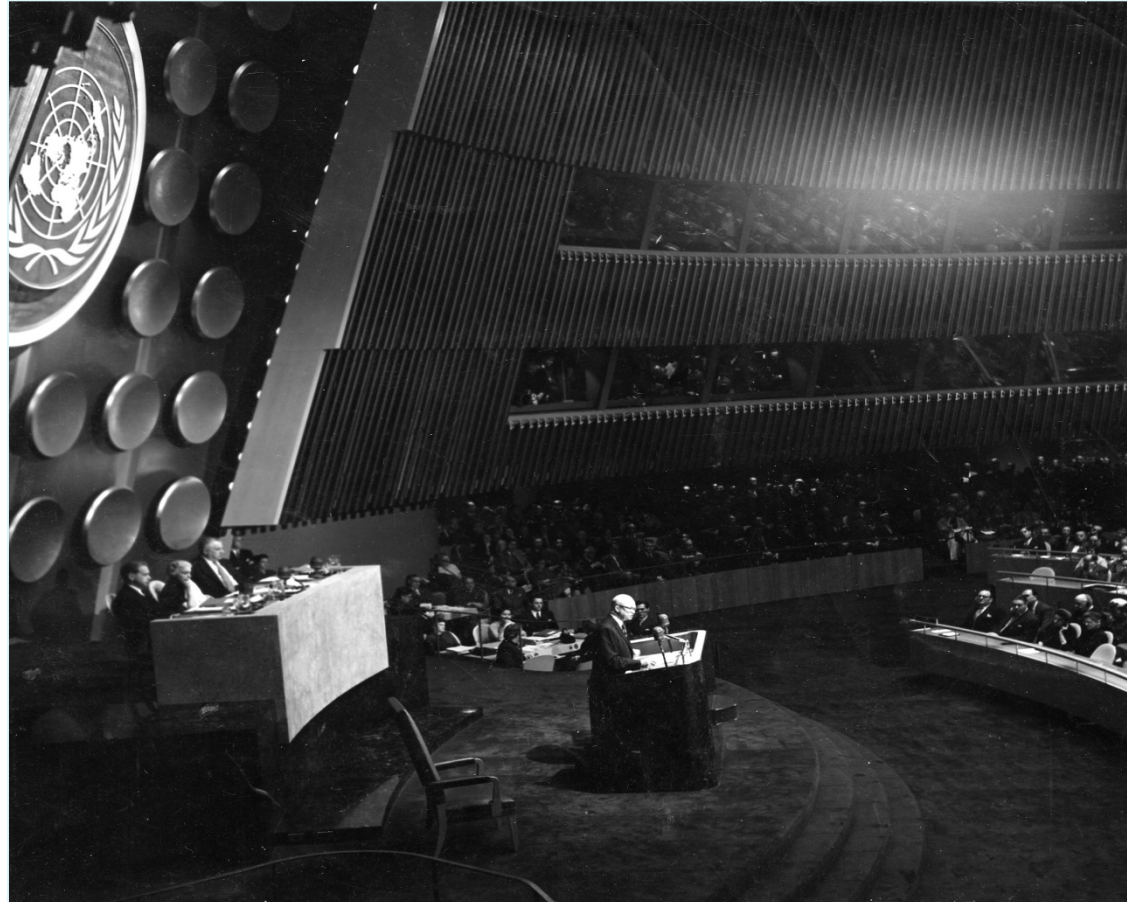
Реферативны журнал

IAEA was created with the Division of Scientific and Technical Information

1965   1975   1985   1995   2005

- The IAEA was mandated the statutory obligation to foster the exchange of nuclear information amongst its Members

- The main owners of nuclear information in the 60's – the national nuclear authorities decided to create
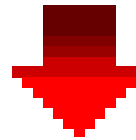
International Nuclear Information System

INIS Membership:

117 Member States   23 International Organizations

How **INIS Operates**

National INIS Centres

Input preparation

- Acquisitions

- Descriptive cataloguing
- Indexing
- NCL document processing

INIS Secretariat

Quality

Assurance

Indexing

Production

Training

INIS Atomindex

INIS Database
on the Internet
on CDROM

Full Text of NCL
on CD-ROM

~100,000 records
annually

National INIS Centres
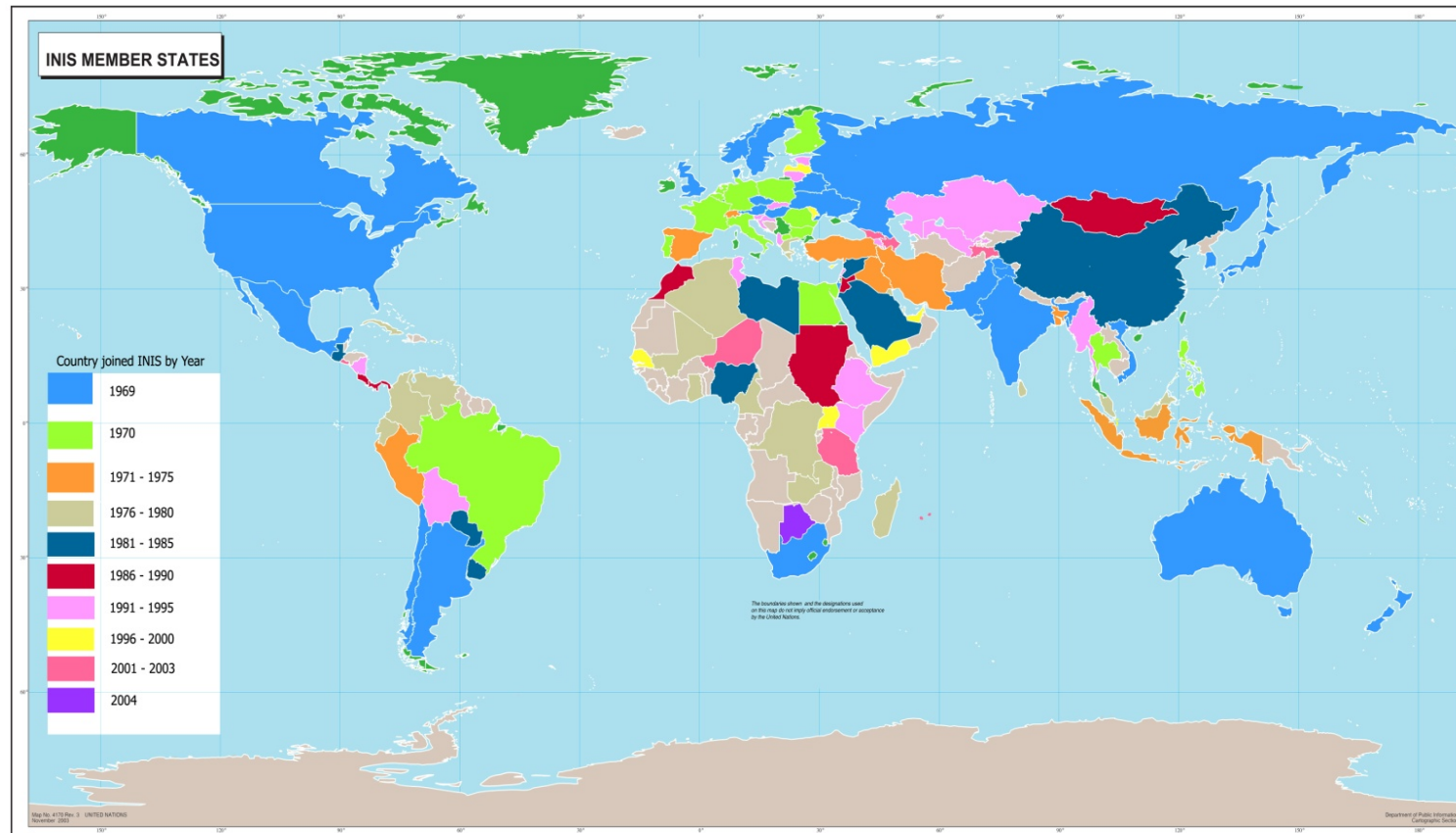
INIS Products and Services
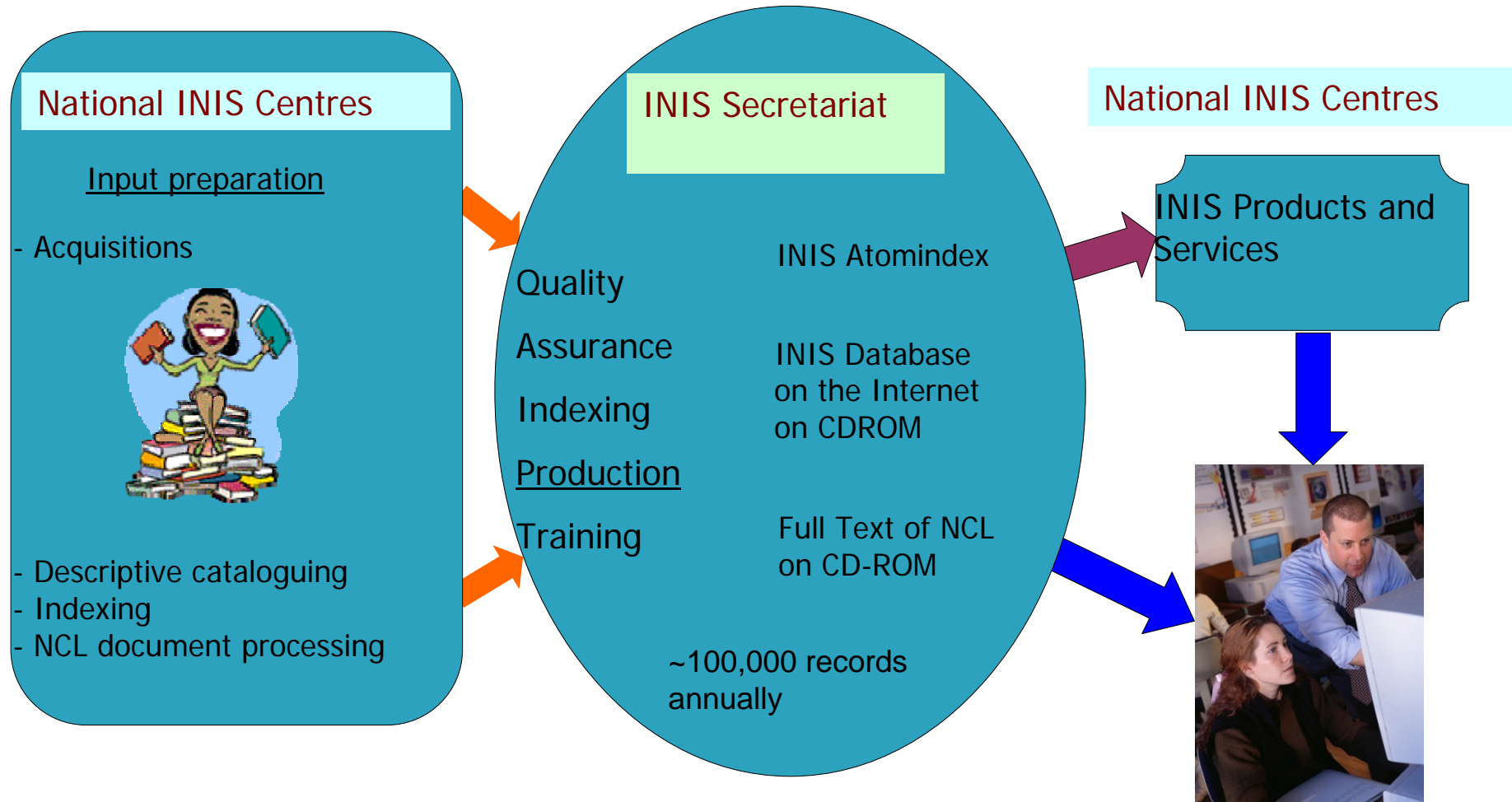
Two Main INIS Products:

1. INIS Bibliographic Database
   (Over 2.8 million indexed references)

2. INIS Full-Text Collection
   (Over 700,000 documents on 63 languages,
   many of them can't be found anywhere else)

Subject Scope
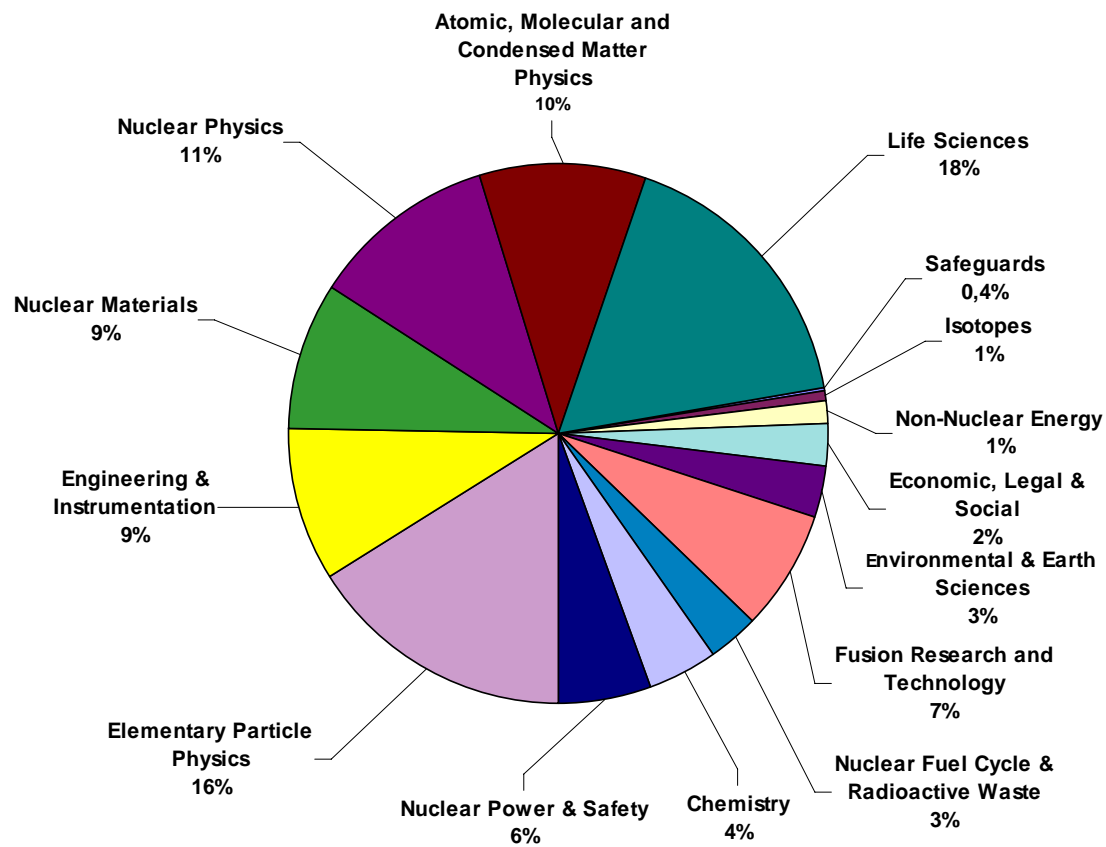
What does INIS contain?

Bibliographic references of:

- Journal articles – 49%

- Technical reports (full text) – 17%

- Conference papers (full text) – 11%

- Books – 12%

- Patents (full text) – 2%

- Laws, regulations, dissertations and other published material (full text) – 9%

INIS Bibliographic Database

- From 1944 to the present
- Over 2.8 million indexed references
- English abstract
- "Direct links" to full-text documents

Available

on CD-ROM

and

on the Internet

INIS NCL full-text collection
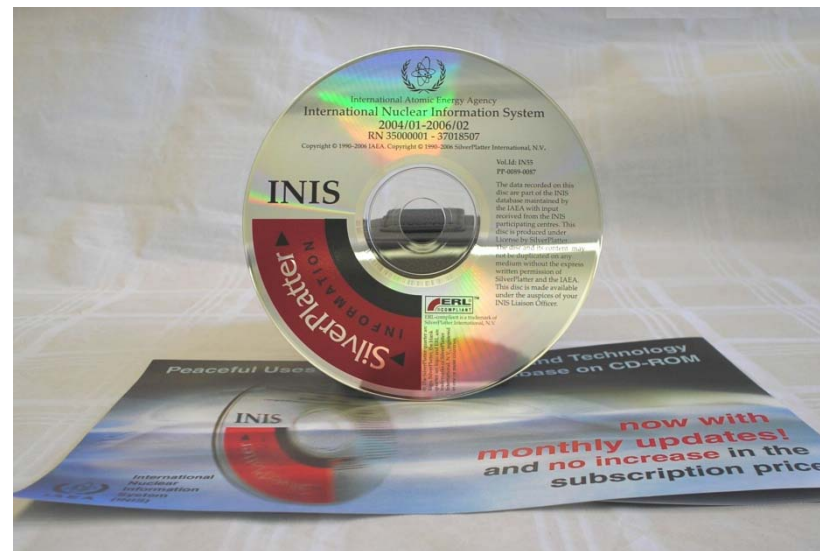
Contains over 700 000 documents
on microfiche and in electronic form (~40%)

Knowledge Preservation Initiatives:

○ Digitization of the INIS NCL Microfiche Archive

○ Digitization of the French CEA-R Microfiche Archive

○ Production of topical subsets (Chernobyl, Fast Reactors, …)

○ Digitization of older IAEA publications and NCL documents that are not in INIS scope:

- Documents of the IAEA Board of Governors (1957 – 1996)
- IAEA Technical Reports Series
- IAEA Bulletin
- IAEA Conference Proceedings
- INDC (Nuclear Data) documents

http://www.iaea.org/DataCenter/index.html

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Nucleus

For Nuclear Knowledge and Information

The Data Centre is Now in Nucleus

Nucleus is the one common access point to the IAEA's nuclear knowledge and information resources, including associated legal and official documentation. It includes scientific and technical documents, websites and databases. Visit Nucleus »

Looking for information from the old DataCentre?

All the resources in the former Data Centre are accessible via Nucleus. The first logical stop is the Nucleus Catalogue. This information resource catalogue currently contains over 100 of the IAEA's nuclear information resources. Go there now »

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IAEA Information Resources

The Member States...

The Commercial poviders...

DIALOGUE

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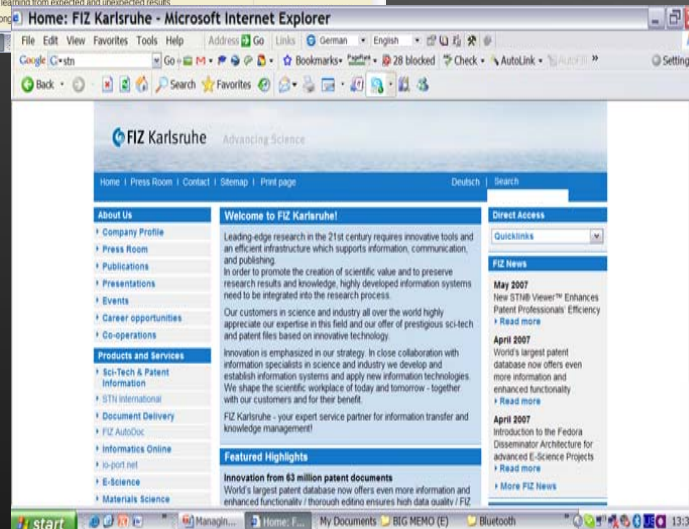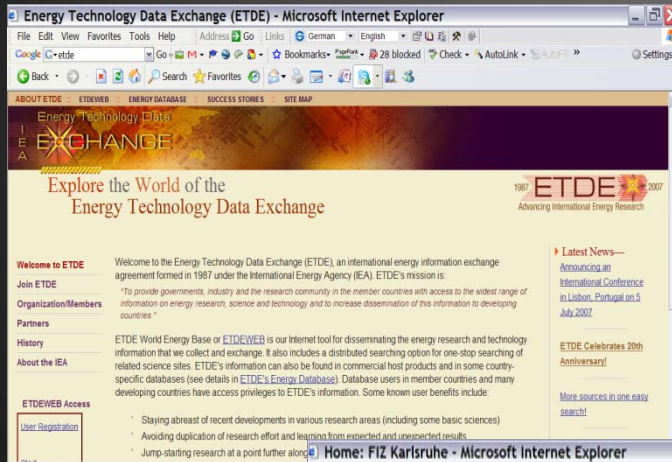
The World of Nuclear Information after INIS
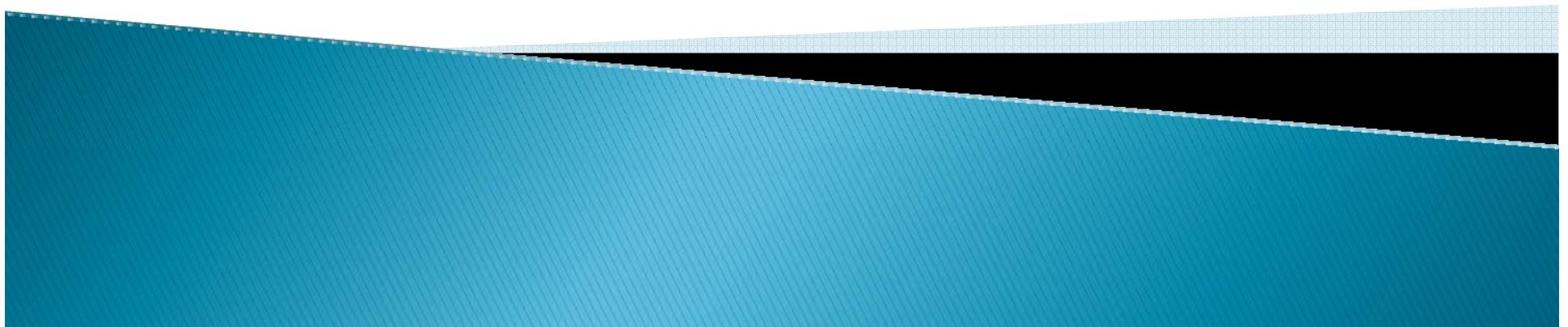
Current Nuclear Information Management Systems & Life-Cycle

▸ Find & retrieve, input data (**crawling**)
▸ Classify & archive data (**data warehouse**)
▸ Data mine patterns (esp. text **mining**)
▸ Report, present & search (business intelligence)

Find & retrieve, input data (crawling)	Classify & archive data (data warehouse)	Data mine patterns (esp. text mining)	Report, present & search (business intelligence)
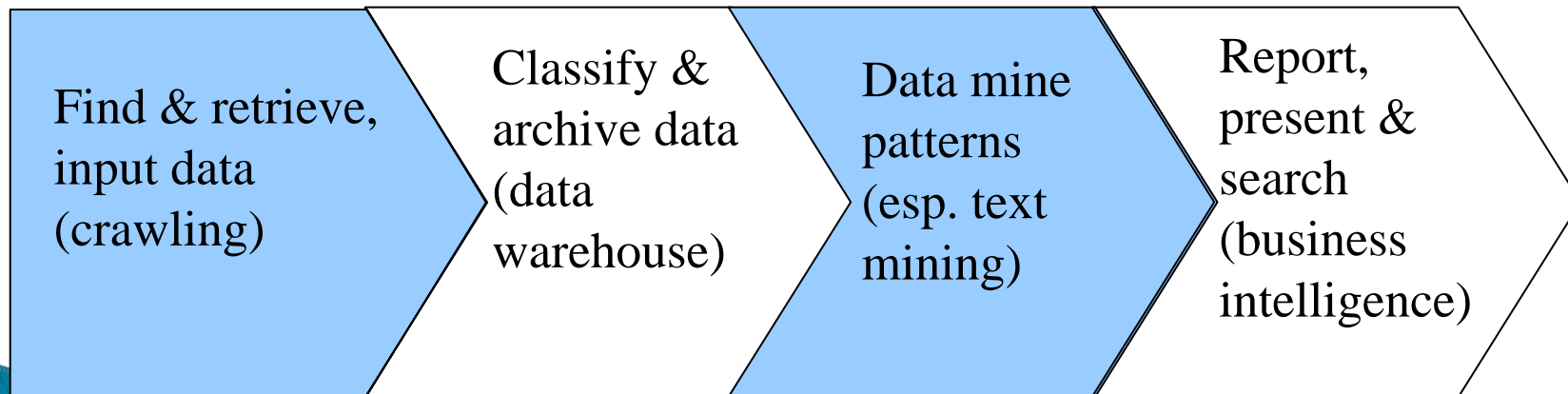
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B Lefievre
M Obolensky
B Achkar
H de Kerret

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WA Gamson, A Modigliani - The American Journal of Sociology, 1989 - JSTOR
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William A. Gamson. ... **Nuclear power**, like every policy issue, has a culture. ...
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[CITATION] ... neutrino oscillations at 15-meters, 40-meters, and 95-meters from a **nuclear power** reactor at Bugey
Y Declais, J Favier, A Metref, H Pessard, B Achkar ... - Nuclear Physics B
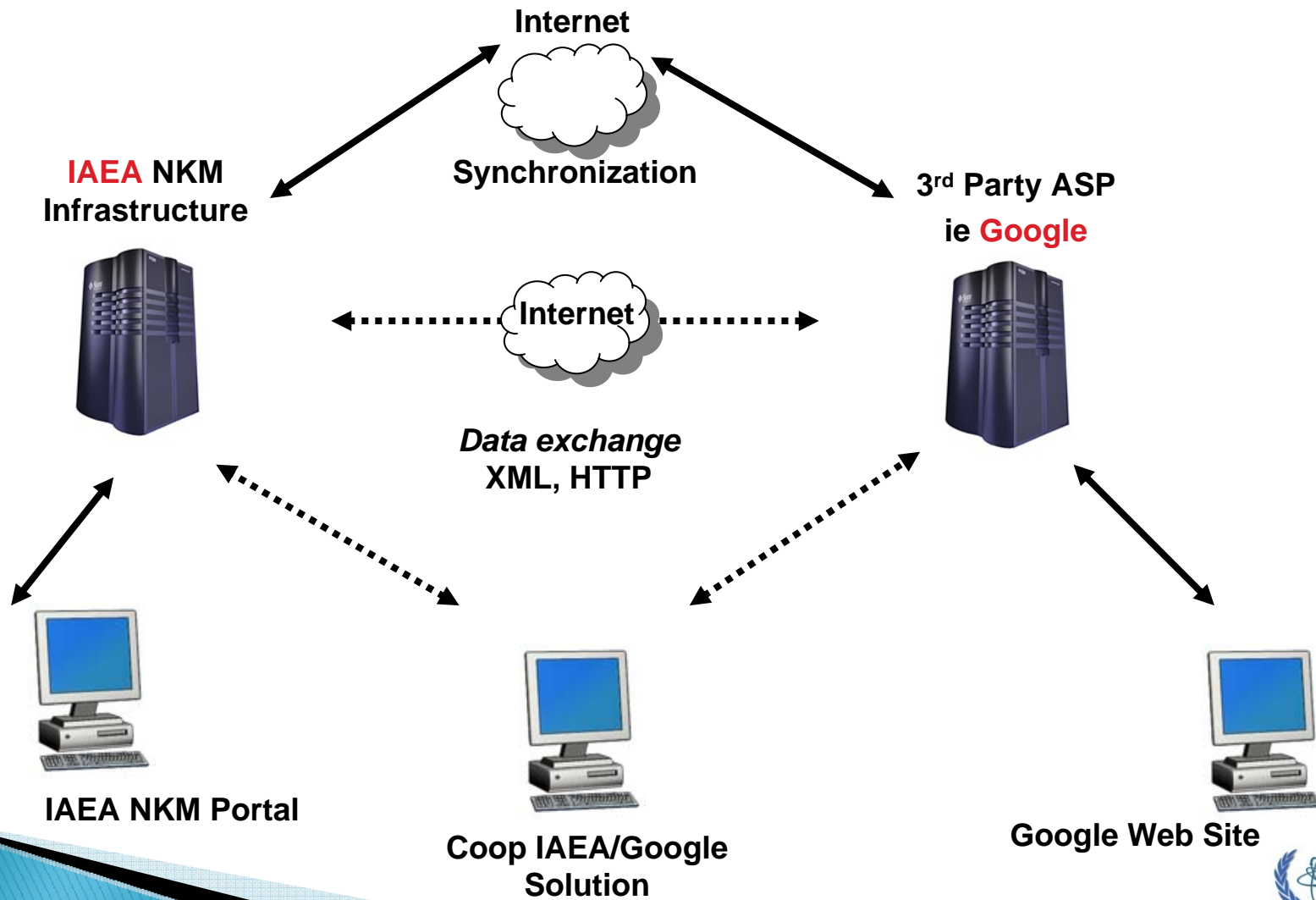Cited by 332 - Related Articles - Web Search - Import into EndNote

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M Apollonio, A Baldini, C Bemporad, E Caffau, F ... - The European Physical Journal C-Particles and Fields, 2003 - Springer
... at the CHOOZ **nuclear power** station ... Page 2. 332 M. Apollonio et al.: Search for neutrino
oscillations on a long base-line at the CHOOZ **nuclear power** station ...
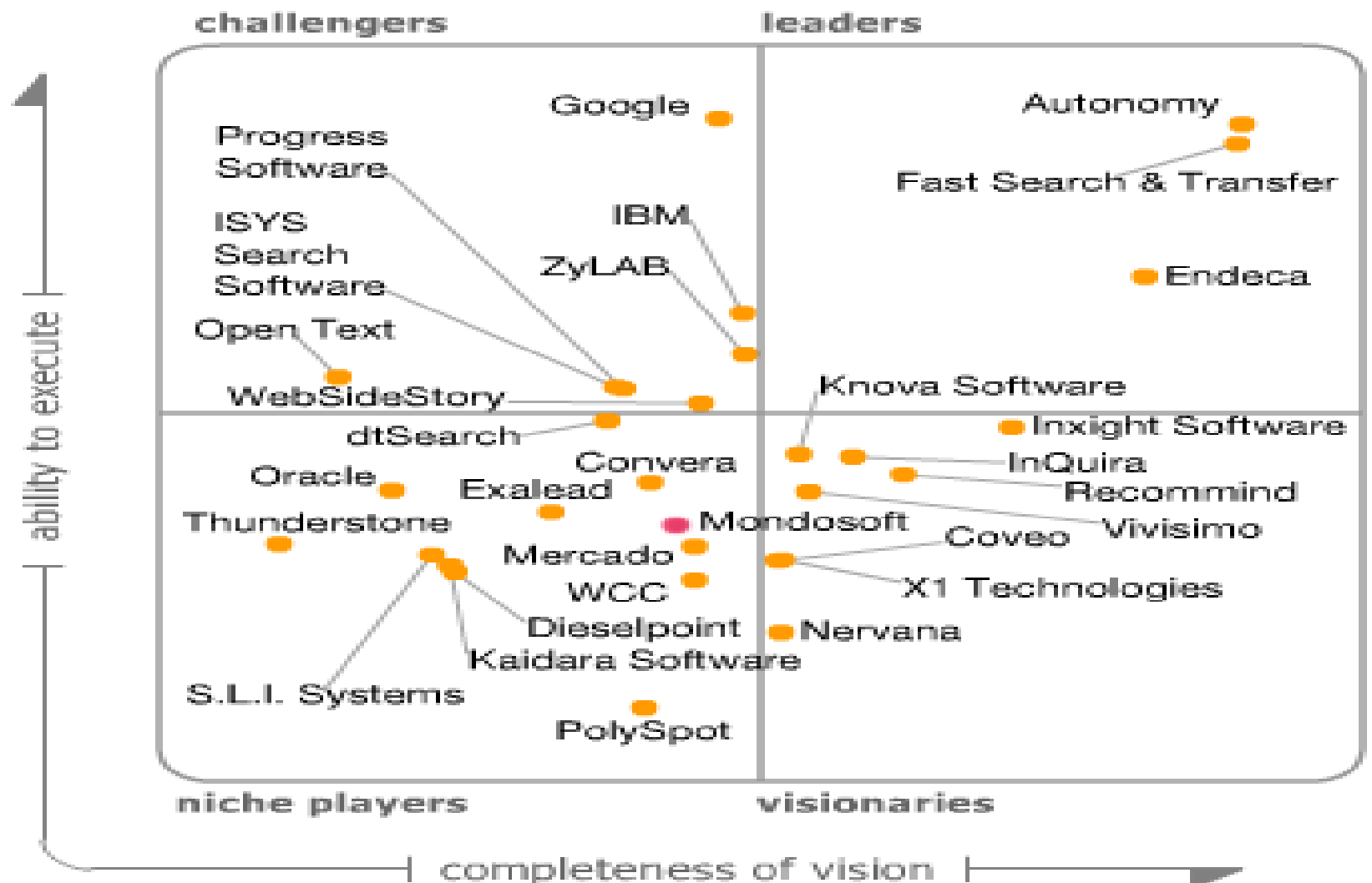Cited by 346 - Related Articles - Web Search - Import into EndNote - BL Direct

[CITATION] Handbook of Human Reliability Analysis with Emphasis on **Nuclear Power** Plant Applications
AD Swain, HE Guttmann... - NUREG/CR, 1983
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Collections or Connections?

Internet

Synchronization

IAEA NKM
Infrastructure

**3rd Party ASP
ie Google**

Internet

Data exchange
XML, HTTP

IAEA NKM Portal

**Coop IAEA/Google
Solution**

Google Web Site

IAEA
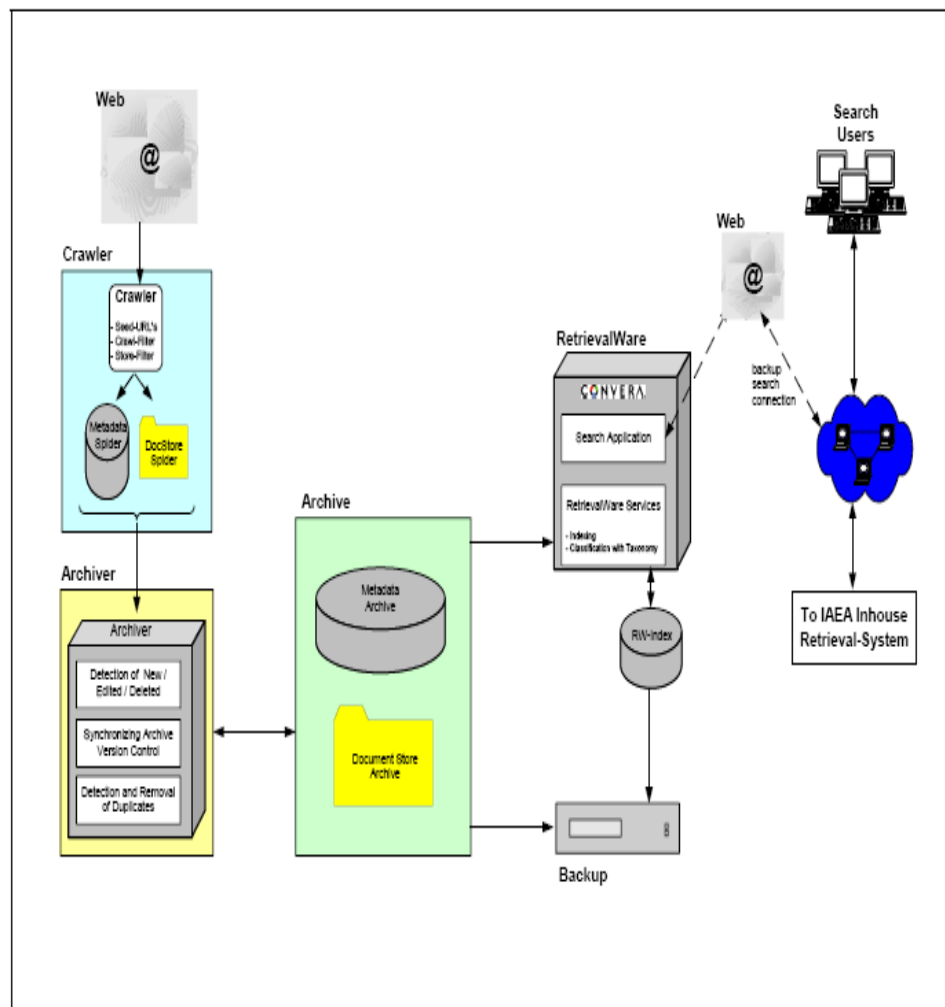Atoms for Peace: The First Half Century
1957–2007

Search engines landscape

As of 1 August 2006

The "NuArch" project

NuArch basics

1. A web crawler will identify and download (harvest) nuclear information resources from the Internet.

2. The harvested materials will be automatically indexed and stored in a high-volume archive with version control.

3. A customised version of an advanced search engine will index all contents and make them accessible to the user.

4. Specialised analysis tools will be developed.

Thank you