

IERS Information- and Database System

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IERS Central Bureau
hosted by Bundesamt für Kartographie und Geodäsie

IERS Data & Information System:

<http://www.iers.org>

The IERS Data and Information System comprises information with respect to all products (publications and data) of the IERS and information related to Earth rotation, reference frames and geophysical fluids.

- The products are available in heterogeneous formats from the various product centres (SINEX, html, ascii, jpeg, ...).
- The system is based on static html pages and thus time consuming to keep consistent and up to date.

Design Goals for the new System

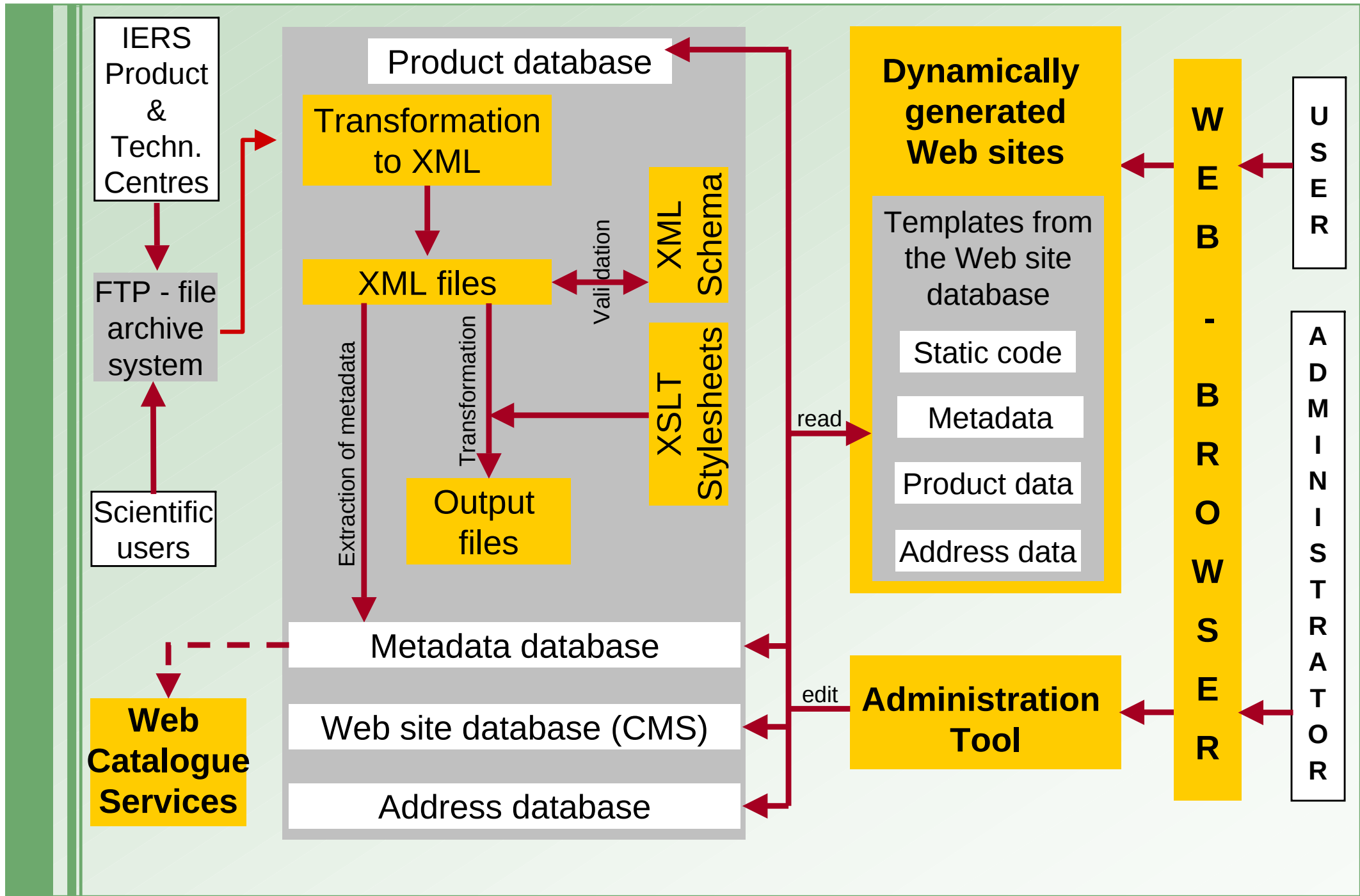
The new IERS information system should realize a platform for scientific and non-scientific users outside the geodetic and astronomic community:

- for the exchange of data
 - by providing the data in standardized formats and
 - by transforming them to appropriate formats for downloading, combination, visualization, etc.,
- for scientific research, i.e. to investigate available data and discover data of interest
 - by maintaining metadata about the products
 - allow users to search within the data and
 - include metadata about the products into *Web Catalogue Services* to make the information available outside the database

Main Characteristics of the new System

- based on Open Source Software (Linux, Apache, MySQL, PHP)
- use the eXtensible Markup Language (XML) as standardized format
- creation of metadata sets
- maintain dynamic information (including the metadata of the products) within relational databases

General Concept



IERS CPP file archive (original file)

IERS Combination Pilot Project - File Archive Listing - Mozilla

File Edit View Go Bookmarks Tools Window Help

Back Forward Reload Stop <http://141.74.2.31/info/listFileCPP.php?withsource=0&orderby=2> Search Print

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IERS IERS IERS Combination Pilot Proj... Index of ftp://141.74.2.31/intr...

IERS Combination Pilot Project File Archive Listing

- Download a file by clicking on the respective name in column *File*.
- Sort by a specific column by clicking on the column's name.

Total number of files: 403 | [Show with original filename and archive](#)

Received	Created	Directory [ftp://iers1.bkg.bund.de, anonymous login]	File
2004-08-05 13:35:03	2004-07-12 19:14:00	/intra-technique/DORIS/2004/	ign04060d7_01.snrx.Z
2004-08-14 00:59:57	2004-08-13 18:09:00	/intra-technique/DORIS/2004/	ign04060d7_01.sum.Z
2004-08-05 13:35:03	2004-07-12 19:15:00	/intra-technique/DORIS/2004/	ign04067d7_01.snrx.Z
2004-08-14 00:59:57	2004-08-13 18:09:00	/intra-technique/DORIS/2004/	ign04067d7_01.sum.Z
2004-08-05 13:35:03	2004-07-12 19:15:00	/intra-technique/DORIS/2004/	ign04074d7_01.snrx.Z
2004-08-14 00:59:57	2004-08-13 18:09:00	/intra-technique/DORIS/2004/	ign04074d7_01.sum.Z
2004-08-05 13:35:03	2004-07-12 19:16:00	/intra-technique/DORIS/2004/	ign04081d7_01.snrx.Z
2004-08-14 00:59:57	2004-08-13 18:10:00	/intra-technique/DORIS/2004/	ign04081d7_01.sum.Z
2004-08-05 13:35:03	2004-07-12 19:17:00	/intra-technique/DORIS/2004/	ign04088d7_01.snrx.Z

Done

IERS CPP file archive (sorted by date)

IERS Combination Pilot Project - File Archive Listing - Mozilla

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Total number of files: 403 | [Hide original filename and archive](#)

Received	Created	Directory [ftp://iers1.bkg.bund.de, anonymous login]	File	Source
2004-08-05 13:35:03	2004-07-12 19:14:00	/intra-technique/DORIS/2004/	ign04060d7_01.snz.Z	ftp://cddisa.gsfc.nasa.gov/pub/
2004-08-14 00:59:57	2004-08-13 18:09:00	/intra-technique/DORIS/2004/	ign04060d7_01.sum.Z	ftp://cddisa.gsfc.nasa.gov/pub/
2004-08-05 13:35:03	2004-07-12 19:15:00	/intra-technique/DORIS/2004/	ign04067d7_01.snz.Z	ftp://cddisa.gsfc.nasa.gov/pub/
2004-08-14 00:59:57	2004-08-13 18:09:00	/intra-technique/DORIS/2004/	ign04067d7_01.sum.Z	ftp://cddisa.gsfc.nasa.gov/pub/
2004-08-05 13:35:03	2004-07-12 19:15:00	/intra-technique/DORIS/2004/	ign04074d7_01.snz.Z	ftp://cddisa.gsfc.nasa.gov/pub/
2004-08-14 00:59:57	2004-08-13 18:09:00	/intra-technique/DORIS/2004/	ign04074d7_01.sum.Z	ftp://cddisa.gsfc.nasa.gov/pub/
2004-08-05 13:35:03	2004-07-12 19:16:00	/intra-technique/DORIS/2004/	ign04081d7_01.snz.Z	ftp://cddisa.gsfc.nasa.gov/pub/
2004-08-14 00:59:57	2004-08-13 18:10:00	/intra-technique/DORIS/2004/	ign04081d7_01.sum.Z	ftp://cddisa.gsfc.nasa.gov/pub/
2004-08-05 13:35:03	2004-07-12 19:17:00	/intra-technique/DORIS/2004/	ign04088d7_01.snz.Z	ftp://cddisa.gsfc.nasa.gov/pub/

Done

IERS CPP file archive (sorted by date & technique)

IERS Combination Pilot Project - File Archive Listing - Mozilla

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IERS IERS IERS Combination Pilot... Index of ftp://141.74.2.3...

IERS Combination Pilot Project File Archive Listing

- Download a file by clicking on the respective name in column *File*.
 - Sort by a specific column by clicking on the column's name.

Total number of files: 403 | [Show with original filename and archive](#)

Received	Created	Directory [ftp://iers1.bkg.bund.de, anonymous login]	File
2004-12-09 14:02:12	2004-12-09 06:51:00	/intra-technique/GPS/2004/	ncl04326p7_01.sum.Z
2004-12-09 14:02:12	2004-12-09 06:51:00	/intra-technique/GPS/2004/	ncl04326p7_01.snrx.Z
2004-12-09 01:59:17	2004-12-08 02:04:00	/intra-technique/SLR/2004/	asi04333l7_01.sum.Z
2004-12-09 01:59:17	2004-12-08 02:04:00	/intra-technique/SLR/2004/	asi04333l7_01.snrx.Z
2004-12-08 20:59:32	2004-12-08 13:53:00	/intra-technique/DORIS/2004/	ign04291d7_01.snrx.Z
2004-12-08 20:59:32	2004-12-08 13:53:00	/intra-technique/DORIS/2004/	ign04291d7_01.sum.Z
2004-12-08 01:59:06	2004-12-07 11:47:00	/intra-technique/SLR/2004/	asi04151l7_03.sum.Z
2004-12-08 01:59:06	2004-12-07 05:43:00	/intra-technique/SLR/2004/	asi04193l7_01.sum.Z
2004-12-08 01:59:05	2004-12-07 11:47:00	/intra-technique/SLR/2004/	asi04151l7_03.snrx.Z

Done

New system for inexperienced user

IER - Mozilla

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IER IERS IERS Combination Pilot Proje... Index of ftp://141.74.2.31/intr...

 IERS/ File Browser (more...)

Data Center

	TYPE	NAME ▲	SIZE	MEASURE DATE ▾
		combination		
		conventions		
		eop		
		publications		
		reference-systems		
		techniques		

Done

New system for inexperienced user

IERS - Mozilla

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IERS IERS IERS Combination Pilot Proje... Index of ftp://141.74.2.31/intr...

 **IERS/combination** File Browser (more...)

Data Center

	TYPE	NAME ▲	SIZE	MEASURE DATE ▾
		inter-technique		
		intra-technique		
		special		
		validation		

Done

New system for inexperienced user

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 File Browser (more...)

IER/combination/intra-technique

Data Center

	TYPE	NAME ▲	SIZE	MEASURE DATE ▾
		DORIS		
		GPS		
		SLR		
		VLBI		

Done

New system for inexperienced user

IER - Mozilla

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IER IERS IERS Combination Pilot Proje... Index of ftp://141.74.2.31/intr... x

 File Browser (more...)

IER/combination/intra-technique/GPS

Data Center

	TYPE	NAME ▲	SIZE	MEASURE DATE ▾
		2004		

Done

New system for inexperienced user

IERs - Mozilla

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IERs IERS IERS Combination Pilot Proje... Index of ftp://141.74.2.31/intr...

File Browser (more...)



IERs/combination/intra-technique/GPS/2004

Data Center

☐	TYPE	NAME ▲	SIZE	MEASURE DATE ▾
☐	FILE	igs04060p7_01.snz.Z	2916.7 kb	18.03.2004 00:00:00
☐	FILE	igs04060p7_01.sum.Z	6.5 kb	18.03.2004 00:00:00
☐	FILE	igs04067p7_01.snz.Z	3128.2 kb	25.03.2004 00:00:00
☐	FILE	igs04067p7_01.sum.Z	6.5 kb	25.03.2004 00:00:00
☐	FILE	igs04074p7_01.snz.Z	3105.3 kb	01.04.2004 00:00:00
☐	FILE	igs04074p7_01.sum.Z	6.9 kb	01.04.2004 00:00:00
☐	FILE	igs04081p7_01.snz.Z	3234.1 kb	09.04.2004 00:00:00
☐	FILE	igs04081p7_01.sum.Z	6.8 kb	09.04.2004 00:00:00
☐	FILE	igs04088p7_01.snz.Z	3153.8 kb	15.04.2004 22:52:00

Done

Importance of Metadata

- Metadata are data about data describing the characteristics of data.
- Metadata contain information that allow the associated data to be independently understandable by the user community.
- Good metadata are the key to search for specific data and to find data of interest.
- By using international standards the metadata can be included into *Web Catalogue Services* to propagate the availability of products and thus to gain new users.
- *Web Catalogue Services* allow users to look for integrated (geo) data sets.

Metadata with downloaded files

File Details - Mozilla

igs04074p7_01.snx.Z

Size:	3105.3 kb
Received Date:	10.08.2004 14:26:51
Creation Date:	01.04.2004 00:00:00

Product Category:	COMBINATION
Product Subcategory:	INTRA-TECHNIQUE COMBINATION
Product:	IGS GPS
Format:	SINEX
Source:	ftp://cddis.a.gsfc.nasa.gov/pub/gps/products/1262/igs04P1262.snx.Z
Date:	01.04.2004
Contact:	rferland@nrcan.gc.ca

Path:	combination/intra-technique/GPS/2004/
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download

Administration Tool: Predefined Metadata Set

Product
classification

Content
and format

Availability
and
publication

■ Meta tags :

► [add new](#)

ID	XML Tag	Description	ColWidth	Edit
4	CATEGORYPATH	CategoryPath		
5	PRODUCTNAME	ProductName		
8	CONTENT	Content		
9	PRODUCTTYPE	ProductType		
10	FORMAT	Format		
11	FORMATDESCRIPTION	FormatDescription		
12	DOCUMENTATION	Documentation		
13	TITLE	Title	350	
14	SECTIONS	Sections		
15	SUBSECTIONS	Subsections		
16	DATA	Data		
17	DATAMODE	DataMode		
18	DATAPPOINTS	DataPoints		
19	TIMESTART	TimeStart	150	
20	TIMEEND	TimeEnd	150	
21	TIMEINTERVAL	TimeIntervall		
22	ACCURACY	Accuracy		
23	KEYWORDS	Keywords		
24	FREQUENCY	Frequency		
25	ARCHIVE	Archive		
26	SOURCE	Source		
39	DELETELOCAL	DeleteLocal		
27	CREATEDBY	CreatedBy		
28	PUBLISHEDBY	PublishedBy		
29	REFERENCE	Reference		
30	DATE	Date	150	
31	CONATACT	Contact		
32	DISTRIBUTION	Distribution		
33	EMAILSUBSCRIPTION	E-MailSubscription		
34	VOLUME	Volume		
35	NUMBER	Number		
36	ISBN	ISBN		
37	ISSN	ISSN		

Administration Tool: Maintenance of Metadata

IER5-Admintool V1.01 (Synaptek 2003,2004)

Adresse: D:\0407-Statusseminar2004\Vortrag\Admintool-Metadeta.htm

■ associated meta tags :

Description	Content	Detail	List	Type	Id
CategoryPath	EOP/RAPID_EOP/DAILY/			a	
ProductName	GPSRAPID.DAILY	2		a	

Source	http://maia.usno.navy.mil/ser7/	4		a	
DeleteLocal	TRUE			a	
CreatedBy	IER5 Rapid Service Prediction Centre	8		a	
PublishedBy	IER5 Rapid Service Prediction Centre			a	
Date		1		x	
Contact	ser7@maia.usno.navy.mil			a	
Distribution	Download			a	

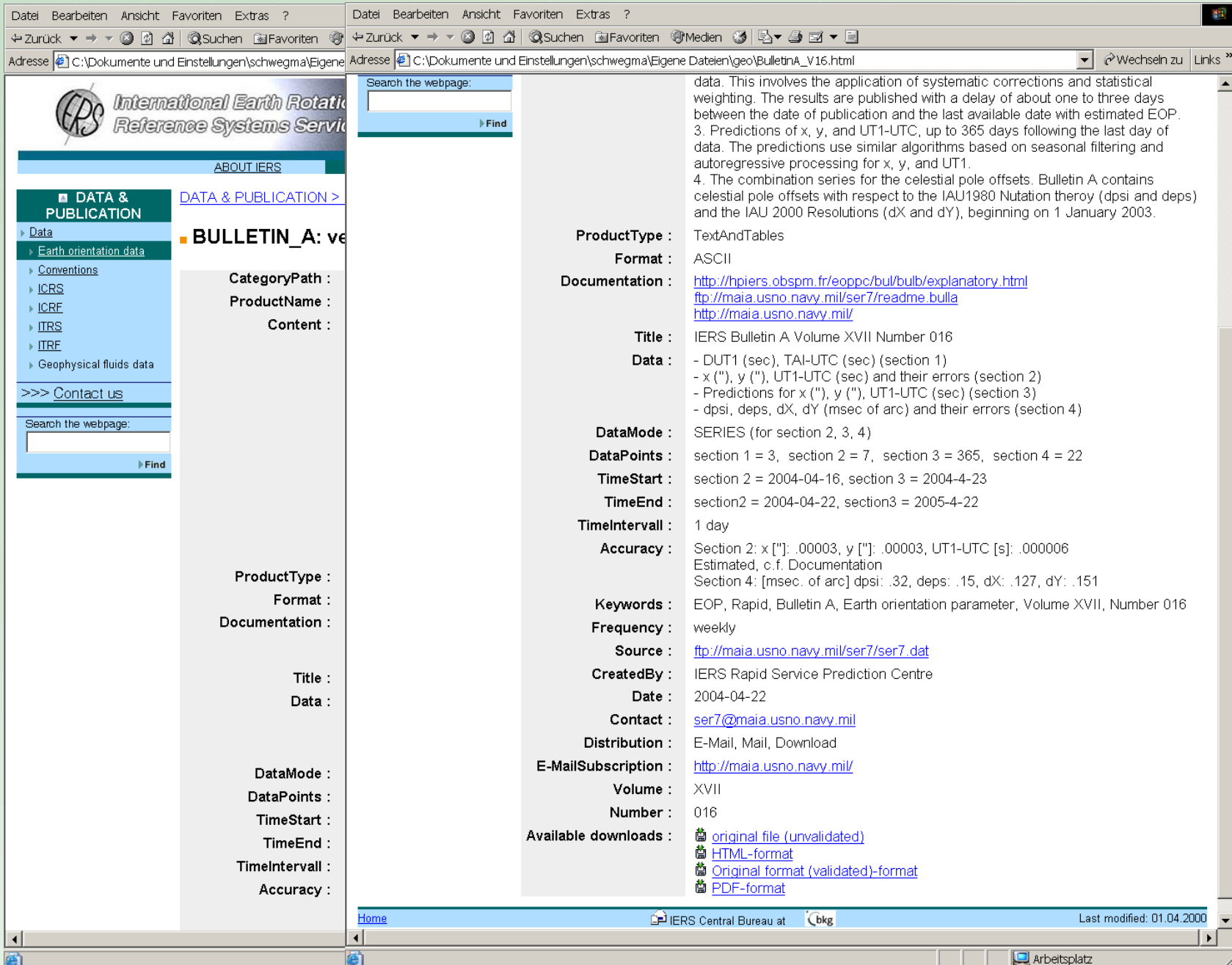
Meta Tag: CategoryPath ... Add

DataMode	UT1-UTC [seconds], error_UT1-UTC [seconds], dPsi [milliarcsec], error_dPsi [milliarcsec], dEps [milliarcsec], error_dEps [milliarcsec] (from Bulletin A)			a	
DataPoints	Series			x	
TimeStart				x	
TimeEnd				x	
TimeIntervall	1 day			a	
Accuracy		2		x	
Keywords	EOP, Rapid data, Predictions, Pole coordinates, x pole, y pole, UT1-UTC, DUT1, dPsi, dEps, daily			a	
Frequency	daily	3		a	
Archive	/root/eop/rapid/daily/			a	
Source	http://maia.usno.navy.mil/ser7/	4		a	
DeleteLocal	TRUE			a	
CreatedBy	IER5 Rapid Service Prediction Centre	8		a	
PublishedBy	IER5 Rapid Service Prediction Centre			a	
Date		1		x	
Contact	ser7@maia.usno.navy.mil			a	
Distribution	Download			a	

Meta Tag: CategoryPath ... Add

Lokales Intranet

User Interface (1): Product Information



The screenshot displays the IERS Reference Systems Service website. The left sidebar contains a navigation menu with links to 'Data', 'Earth orientation data', 'Conventions', 'ICRS', 'ICRF', 'ITRS', 'ITRF', and 'Geophysical fluids data'. The main content area is titled 'BULLETIN_A: ve' and displays a list of product information fields. The right sidebar contains a search bar and a list of links to documentation and data files.

ProductType : TextAndTables
Format : ASCII
Documentation : <http://hpiers.obspm.fr/eoppc/bul/bulb/explanatory.html>
<ftp://maia.usno.navy.mil/ser7/readme.bulla>
<http://maia.usno.navy.mil/>
Title : IERS Bulletin A Volume XVII Number 016
Data : - DUT1 (sec), TAI-UTC (sec) (section 1)
- x ("), y ("), UT1-UTC (sec) and their errors (section 2)
- Predictions for x ("), y ("), UT1-UTC (sec) (section 3)
- dpsi, deps, dX, dY (msec of arc) and their errors (section 4)
DataMode : SERIES (for section 2, 3, 4)
DataPoints : section 1 = 3, section 2 = 7, section 3 = 365, section 4 = 22
TimeStart : section 2 = 2004-04-16, section 3 = 2004-4-23
TimeEnd : section2 = 2004-04-22, section3 = 2005-4-22
TimeIntervall : 1 day
Accuracy : Section 2: x ["]: .00003, y ["]: .00003, UT1-UTC [s]: .000006
Estimated, c.f. Documentation
Section 4: [msec. of arc] dpsi: .32, deps: .15, dX: .127, dY: .151
Keywords : EOP, Rapid, Bulletin A, Earth orientation parameter, Volume XVII, Number 016
Frequency : weekly
Source : <ftp://maia.usno.navy.mil/ser7/ser7.dat>
CreatedBy : IERS Rapid Service Prediction Centre
Date : 2004-04-22
Contact : ser7@maia.usno.navy.mil
Distribution : E-Mail, Mail, Download
E-MailSubscription : <http://maia.usno.navy.mil/>
Volume : XVII
Number : 016
Available downloads : [original file \(unvalidated\)](#)
[HTML-format](#)
[Original format \(validated\)-format](#)
[PDF-format](#)

Home IERS Central Bureau at bkg Last modified: 01.04.2000

User Interface (2): Product Information

The screenshot displays a web browser window titled "IERS Datacenter" with a menu bar (Datei, Bearbeiten, Ansicht, Favoriten, Extras, ?) and a toolbar. The address bar shows "D:\0407-Statusseminar2004\Poster\Search3.html". The main content area features the IERS logo and the text "International Earth Rotation and Reference Systems Service". A navigation bar includes links: ABOUT IERS, DATA & PUBLICATION (selected), GENERAL INFORMATION, NEWS, LINKS, FAQ, and SITEMAP. On the left, a sidebar lists "DATA & PUBLICATION" with sub-links: Publications, IERS Messages, IERS Bulletins, IERS Technical Notes, IERS Annual Reports, IERS Gazette, and Contact us. The main content area displays "DATA & PUBLICATION > Publications" and "IERS_MESSAGE: version '48'". Below this, a table lists product details:

CategoryPath :	PUBLICATIONS/MESSAGES/
ProductName :	IERS_MESSAGE
Content :	The IERS Messages contain short and rapid information about the IERS and its products for contributors and users. They replace the IERS Gazettes, issued between 1996 and 2000.
ProductType :	SimpleText
Format :	ASCII
FormatDescription :	Text
Documentation :	
Title :	IERS Message No. 48 November 17, 2003
Keywords :	IERS Message, No. 48, Proceedings of IERS Workshop and Documentation of ITRF2000
Frequency :	irregular
Archive :	/root/publications/messages/
Source :	message_48.txt

The "Keywords" row is highlighted with a red border. The browser's status bar at the bottom shows "Lokales Intranet".

Conclusions

- The new IERS Information and Database System is currently running in test mode.
- The use of XML as standardized data format facilitates the exchange of data and allows the user to display the data in various output formats.
- The substantial creation and use of metadata sets allows easily to find data of interest.
- By managing the dynamic content of the Web sites using the database the consistency of the information can be guaranteed.
- The administration tool facilitates the maintenance and distribution of the IERS products; new products as those from the IERS Combination Pilot Project can easily be integrated.

Outlook

- The system is planned to run in operational mode by the beginning of 2005.
- Metadata sets play a central role with respect to the availability, usability and publicity of the data:
 - The metadata sets have to be transformed to be consistent with the respective ISO-Standards to facilitate their exchange and integration:
 - ISO 19115: Metadata
 - ISO 19139: Metadata – XML schema implementation
 - The metadata sets will be included into so-called *Web Catalogue Services* to make the information available to users from other (geo)sciences.
- Further tools have to be developed, e.g. to combine and display the data, provide interactive maps, ...