



# IDS DATA CENTER UPDATE



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A historical world map with a yellow border. The text "IDS DATA CENTER UPDATE" is overlaid in large, white, sans-serif capital letters across the center of the map. The map shows continents, oceans, and various geographical labels in Latin.

# IDS DATA CENTER UPDATE

- ◆ **Data Center Overview**
- ◆ **Archive Structure**
- ◆ **Data and Product Availability**
- ◆ **Users of DORIS Data**
- ◆ **Future Plans/Issues**
- ◆ **Contact Information**

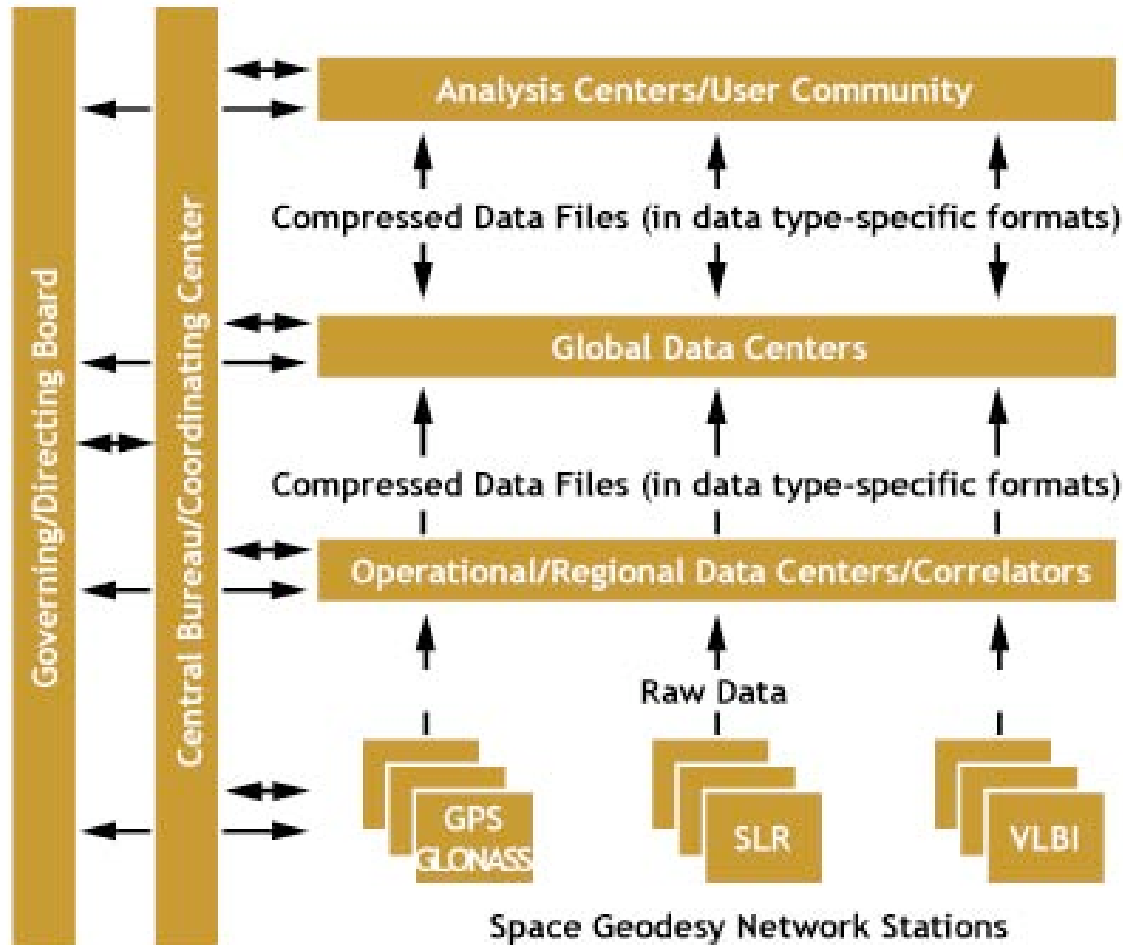


A historical map of the world, likely from the 17th or 18th century, showing continents, oceans, and various geographical features. The map is rendered in a sepia or aged tone. Overlaid on the map is the text "IDS DATA CENTERS" in a large, white, sans-serif font. The map includes labels for various regions and geographical features, such as "SEPTENTRIONALIS ZONA" and "TROPICUS CANCRI".

# IDS DATA CENTERS

- ◆ **Two data centers support the IDS:**
  - Crustal Dynamics Data Information System (CDDIS), NASA GSFC, Greenbelt, MD USA
  - Institut Géographique National (IGN), Paris France
- ◆ **CDDIS is a dedicated data center supporting the international space geodesy community since 1982**
- ◆ **The CDDIS serves as one of the primary data centers for the following IAG services:**
  - International GPS Service (IGS)
  - International Laser Ranging Service (ILRS)
  - International VLBI Service for Geodesy and Astrometry (IVS)
  - International DORIS Service (IDS)
  - International Earth Rotation Service (IERS)
- ◆ **CDDIS and IGN have archived DORIS data since launch of TOPEX/Poseidon in 1992**
- ◆ **IGN currently mirrors contents of CDDIS data and product archives**

# DATA FLOW FOR IAG SERVICES



## Network Stations

Continuously operational  
Timely flow of data

## Data Centers

Interface to network stations  
Perform QC and data conversion activities  
Archive data for access to analysis centers and users

## Analysis Centers

Provide products to users  
(e.g., station coordinates, precise satellite orbits, Earth orientation parameters, atmospheric products, etc.)

## Central Bureau

Management of service  
Facilitate communications  
Coordinate activities

## Governing Body

General oversight of service  
Future direction





# DORIS DATA AND PRODUCT FLOW (CDDIS)

- ◆ SSALTO deposits data in incoming disk area on CDDIS host computer
- ◆ IDS analysis centers deposit product files in incoming disk area on CDDIS computer
- ◆ Automated routines peruse incoming data and product areas for new files and archive files to public disk areas
- ◆ IDS Central Bureau ftp files mirrored by IDS data centers
- ◆ At CDDIS, summaries generated from DORIS data files and loaded into Oracle data base
- ◆ Data base information includes satellite, site, time span, and number of observations per pass
- ◆ Data base used to generate reports on DORIS data holdings at CDDIS
- ◆ During 2003, over 110 groups in 30 countries accessed DORIS data and information from the CDDIS



# DORIS DATA CENTERS

## Archive Structure

- ◆ New archive structure implemented at data centers in January 2003
- ◆ Description at [http://lareg.ensg.ign.fr/IDS/doc/struct\\_dc.html](http://lareg.ensg.ign.fr/IDS/doc/struct_dc.html)
- ◆ Main directories (CDDIS):
  - <ftp://cddisa.gsfc.nasa.gov/pub/doris/data> for all data
    - ◆ Subdirectories by satellite code
    - ◆ New file naming convention
  - <ftp://cddisa.gsfc.nasa.gov/pub/doris/products> for all products
    - ◆ Subdirectories by product type and analysis center
  - Documentation files for each data type, product type, and solution
  - [ftp://cddisa.gsfc.nasa.gov/pub/doris/cb\\_mirror](ftp://cddisa.gsfc.nasa.gov/pub/doris/cb_mirror)
    - ◆ Mirror of IDS Central Bureau information files



# ARCHIVE CONTENT

## Directory Structure

Directory	File Name	Description
<b>Data Directories</b>		
/doris/data/ <i>sss</i>	<i>sss</i> data <i>MMM.LLL.Z</i> <i>sss.files</i>	DORIS data for satellite <i>sss</i> , cycle number <i>MMM</i> , and version <i>LLL</i> File containing multi-day cycle filenames versus time span for satellite <i>sss</i>
/doris/data/ <i>sss</i> /sum	<i>sss</i> data <i>MMM.LLL.sum.Z</i>	Summary of contents of DORIS data file for satellite <i>sss</i> , cycle number <i>MMM</i> , and file version number <i>LLL</i>
<b>Product Directories</b>		
/doris/ <i>prodtype</i> / <i>ccc</i> /	orbits/ <i>ccc/cccsssVV.bXXDDD.eYYEE</i> <i>E.sp1.LLL.Z</i>  sinex_global/ <i>cccWWuVV.snz.Z</i>  sinex_series/ <i>ccc/cccYYDDDtutuVV.snz.Z</i>  stcd/ <i>cccWWtu/cccWWtuVV.stcd.aaaa.Z</i>  geoc/ <i>cccWWtuVV.geoc.Z</i>  eop/ <i>cccWWtuVV.eop.Z</i>  iono/ <i>ccc/sss/cccsssVV.YYDDD.iono.Z</i>	Satellite orbits in SP1 format from analysis center <i>ccc</i> , satellite <i>sss</i> , solution version <i>VV</i> , start date year <i>XX</i> and day <i>DDD</i> , end date year <i>YY</i> and day <i>EEE</i> , and file version number <i>LLL</i> Global SINEX solutions of station coordinates for analysis center <i>ccc</i> , year <i>WW</i> , content <i>u</i> (d=DORIS, c=multi-technique), and solution version <i>VV</i> Time series SINEX solutions for analysis center <i>ccc</i> , starting on year <i>YY</i> and day of year <i>DDD</i> , type <i>t</i> (m=monthly, w=weekly, d=daily) solution, content <i>u</i> (d=DORIS, c=multi-technique), and solution version <i>VV</i> Station coordinate time series SINEX solutions for analysis center <i>ccc</i> , for year <i>WW</i> , type <i>t</i> (m=monthly, w=weekly, d=daily), content <i>u</i> (d=DORIS, c=multi-technique), solution version <i>VV</i> , for station <i>aaaa</i> TRF origin (geocenter) solutions for analysis center <i>ccc</i> , for year <i>WW</i> , type <i>t</i> (m=monthly, w=weekly, d=daily), content <i>u</i> (d=DORIS, c=multi-technique), and solution version <i>VV</i> Earth orientation parameter solutions for analysis center <i>ccc</i> , for year <i>WW</i> , type <i>t</i> (m=monthly, w=weekly, d=daily), content <i>u</i> (d=DORIS, c=multi-technique), and solution version <i>VV</i> Ionosphere products for analysis center <i>ccc</i> , satellite <i>sss</i> , solution version <i>VV</i> , and starting on year <i>YY</i> and day of year <i>DDD</i> .
<b>Information Directories</b>		
/doris/cb_mirror		Mirror of IDS central bureau files



# DORIS ARCHIVE CONTENT

Data

- ◆ CDDIS and IGN currently archive DORIS data from six operational satellites: TOPEX, SPOT-2, SPOT-4, SPOT-5, Jason-1, Envisat
- ◆ Historic archive of SPOT-3 data also available
- ◆ CDDIS data files are mirrored at IGN data center
- ◆ Data are stored in multi-day (typically 10-day) cycle files
- ◆ Data availability after the last observation day:
  - TOPEX: ~20 days
  - SPOT: ~30 days
  - Jason: ~20 days
  - Envisat: ~40 days
- ◆ Files approximately two Mbytes in size (UNIX compressed)
- ◆ New DORIS data format (V2.1) to accommodate new DORIS receiver implemented for all data since 15-Jan-2002



A historical map of the world, likely from the 17th or 18th century, showing continents and oceans. Overlaid on the map are modern satellite data tracks, represented by red and blue lines, showing the paths of satellites like TOPEX/Poseidon and Jason-1. The text 'DORIS ARCHIVE CONTENT' is prominently displayed in white, bold, uppercase letters across the top of the map. Below it, the acronym 'CDDIS' is written in a smaller, white, sans-serif font.

# DORIS ARCHIVE CONTENT

CDDIS

Satellite	Time Span
TOPEX/Poseidon	25-Sep-1992 through present
SPOT-2	31-Mar through 04-Jul-1990 04-Nov-1992 through present
SPOT-3	01-Feb-1994 through 09-Nov-1996
SPOT-4	01-May-1998 through present
SPOT-5	11-Jun-2002 through present
Jason-1	15-Jan-2002 through present
ENVISAT	13-Jun-2002 through present



# DORIS ARCHIVE CONTENT

Products

- ◆ **Archived by data type and Analysis Center (AC)**
  - **Station coordinates (SINEX)**
    - ◆ **Global**
    - ◆ **Time series (daily, weekly, monthly)**
  - **Geocenter variations**
  - **Orbits**
  - **Ionosphere products**
  - **EOP (X, Y, UT1-UTC rate)**
  - **Etc.**
- ◆ **ACs (and three-character code) archived thus far:**
  - **Institut Géographique National/JPL (ign) France, P. Willis**
  - **LEGOS/GRGS-CLS (lca) France, J.-F. Crétaux**
  - **SSALTO (ssa) France, G. Tavernier**
  - **CNES/SOD (sod) France, J.P. Berthias**
  - **INASAN (ina) Russia, S. Tatevian**





# DORIS ARCHIVE CONTENT

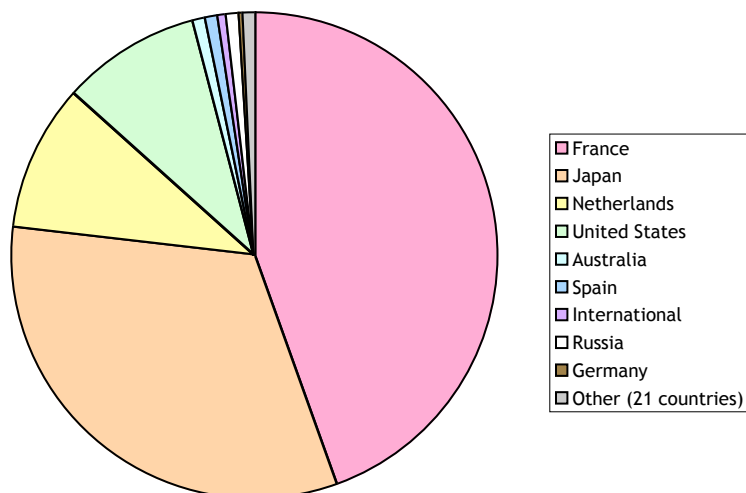
## Products

- ◆ **Products archived thus far (subdirectory name):**
  - **IGN/JPL (ign)**
    - ◆ TRF-origin time series (geoc)
    - ◆ Global SINEX solutions (sinex\_global)
    - ◆ Time series of SINEX solutions, weekly and monthly (sinex\_series)
    - ◆ EOP time series (eop)
  - **LEGOS/GRGS-CLS (lca)**
    - ◆ Orbits, Jason-1 (orbits)
    - ◆ Time series of SINEX solutions, monthly (sinex\_series)
  - **SSALTO (ssa)**
    - ◆ Ionosphere (iono)
    - ◆ Time series of SINEX solutions, weekly and monthly (sinex\_series)
    - ◆ Station coordinates time series, weekly (stcd)
  - **SOD (sod)**
    - ◆ Time series of SINEX solutions, weekly (sinex\_series)
  - **INASAN (ina)**
    - ◆ Time series of SINEX solutions, weekly and monthly (sinex\_series)

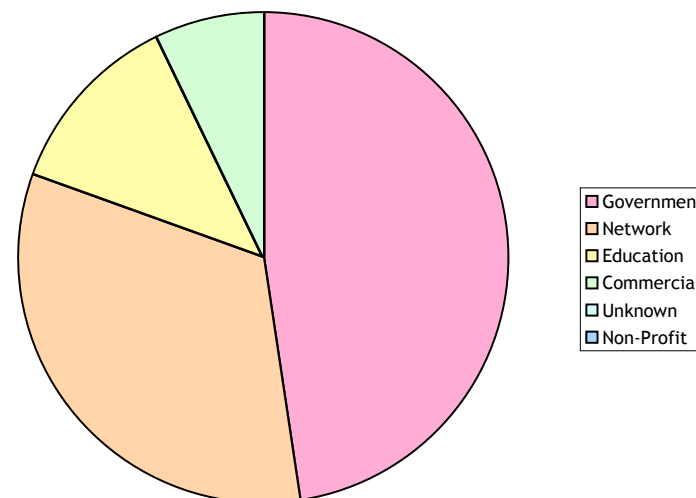
# CDDIS DORIS ARCHIVE ACCESS (2003)

## Number of Files Downloaded

By Country



By Institution Type



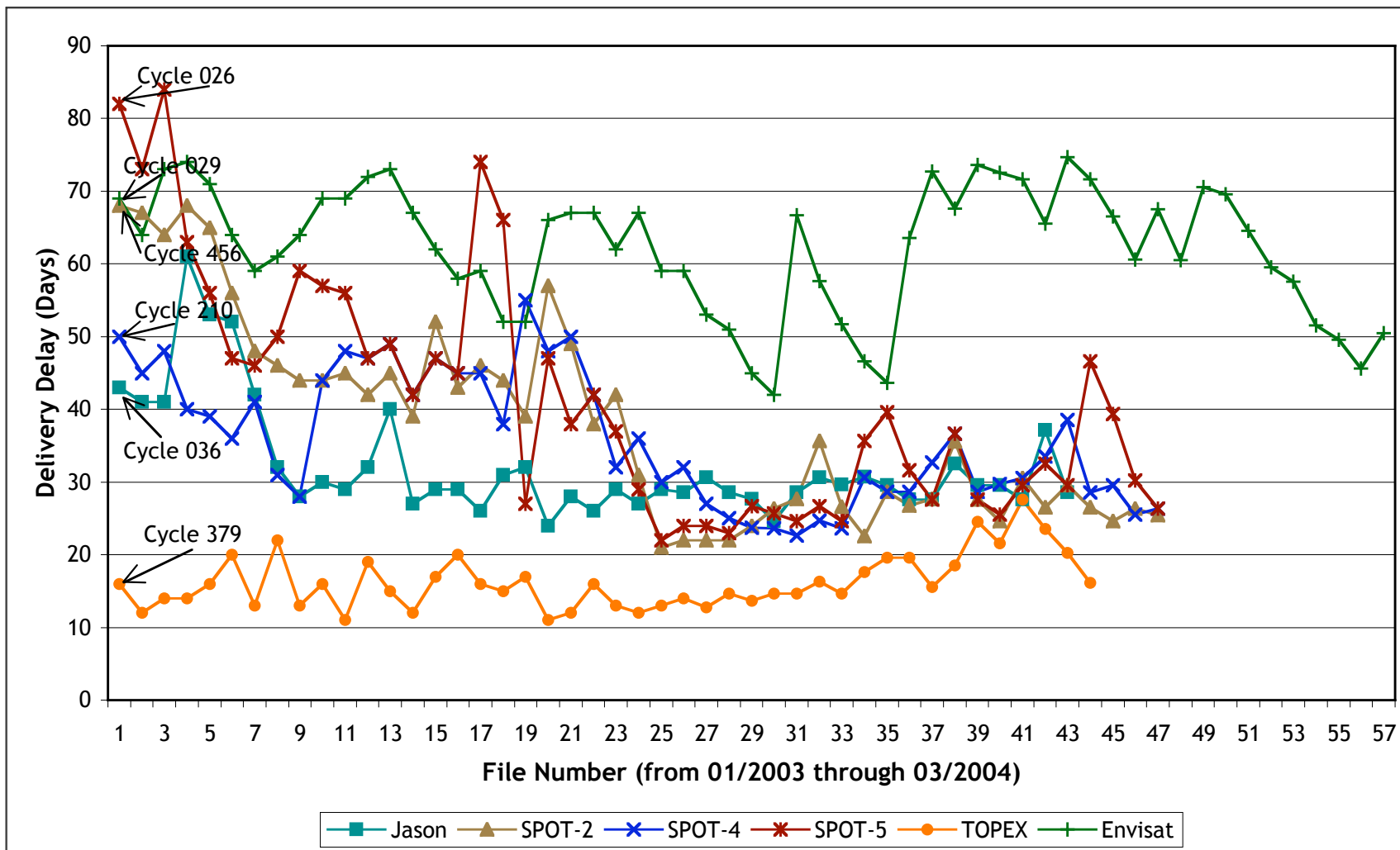
Note: Over 70% of downloads from France are from IGN for data archive mirroring purposes

- ◆ In 2003, nearly 52K DORIS-related files (18K data, 26K product) were downloaded from the CDDIS
- ◆ Users from 30 countries and over 100 government, education, and commercial institutions downloaded DORIS data and products from the CDDIS



# DELAY IN DELIVERY OF DORIS DATA

(All Satellites, 01/2003 - 03/2004)



Note: Delivery delay has significantly reduced since 01/2004



# FUTURE PLANS/ISSUES

- ◆ SSALTO's reduction in delivery delay of all DORIS data files to CDDIS has been beneficial to users
- ◆ IGN currently providing minimal service to IDS (i.e., mirroring of CDDIS archive) due to manpower constraints
  - Implies delay in enhancements to data center functionality
  - Mirroring of CDDIS archive still critical to ensure IDS viability
- ◆ At this time, IGN mirrors the CDDIS archive
  - SSALTO should deliver data to both CDDIS and IGN data centers (when IGN staffing issue is resolved)
  - Will ensure redundancy in data delivery in the event one data center is unavailable
- ◆ Enhance procedures at both data centers to regularly compare data holdings (when IGN staffing issue is resolved)
- ◆ Issue bi-monthly data holding reports through DORISMail



# DORIS DATA HOLDINGS REPORT

(Example of Monthly Report)

Current DORIS Data Holdings for March 2004 by Satellite  
(as of 23-Apr-04 11:24)

Sat.	Min. Date	Max. Date	File Name	No. Sta.	Tot. Pass	Tot. Obs.
ENVISAT	01-Mar-2004	01-Mar-2004	en1data089.001	41	114	4,757
	02-Mar-2004	08-Mar-2004	en1data090.001	43	821	32,520
	09-Mar-2004	16-Mar-2004	en1data091.001	43	850	34,383
JASON	01-Mar-2004	08-Mar-2004	ja1data079.001	42	1,026	67,360
	08-Mar-2004	18-Mar-2004	ja1data080.001	41	1,304	84,956
	18-Mar-2004	28-Mar-2004	ja1data081.001	43	1,379	90,761
SPOT-2	01-Mar-2004	10-Mar-2004	sp2data503.001	41	1,116	36,568
	10-Mar-2004	19-Mar-2004	sp2data504.001	42	1,396	46,140
SPOT-4	01-Mar-2004	10-Mar-2004	sp4data257.001	42	1,198	40,935
	10-Mar-2004	20-Mar-2004	sp4data258.001	42	1,353	46,668
SPOT-5	01-Mar-2004	05-Mar-2004	sp5data071.001	42	786	39,243
	06-Mar-2004	15-Mar-2004	sp5data072.001	42	1,574	77,730
	16-Mar-2004	25-Mar-2004	sp5data073.001	44	1,632	81,533
TOPEX	01-Mar-2004	08-Mar-2004	topdata422.001	42	995	39,265
	08-Mar-2004	18-Mar-2004	topdata423.001	42	1,286	52,037
	18-Mar-2004	28-Mar-2004	topdata424.001	45	1,381	56,571

16 rows selected.



# QUESTIONS?

## ◆ **Contacts:**

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