



IDS DATA CENTER UPDATE



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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 title "IDS DATA CENTER UPDATE" in large, white, sans-serif capital letters. The map includes labels for various regions and lines of latitude and longitude.

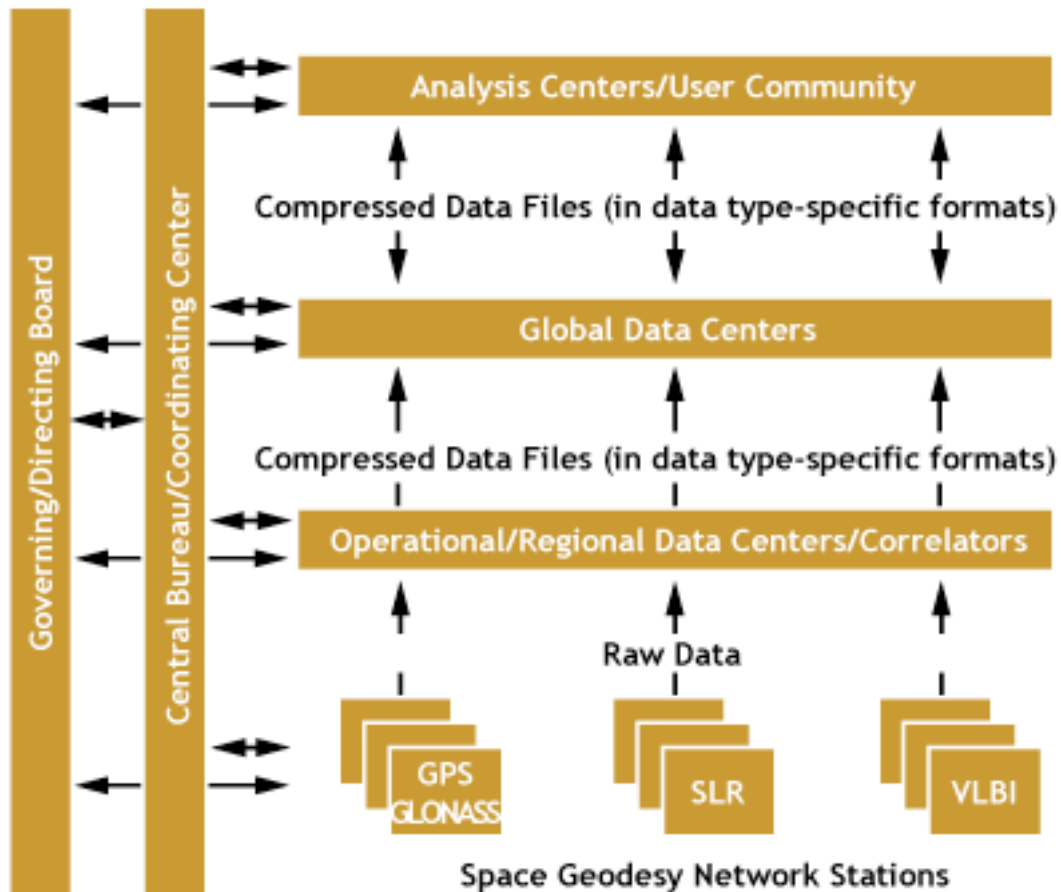
IDS DATA CENTER UPDATE

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



- ◆ **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

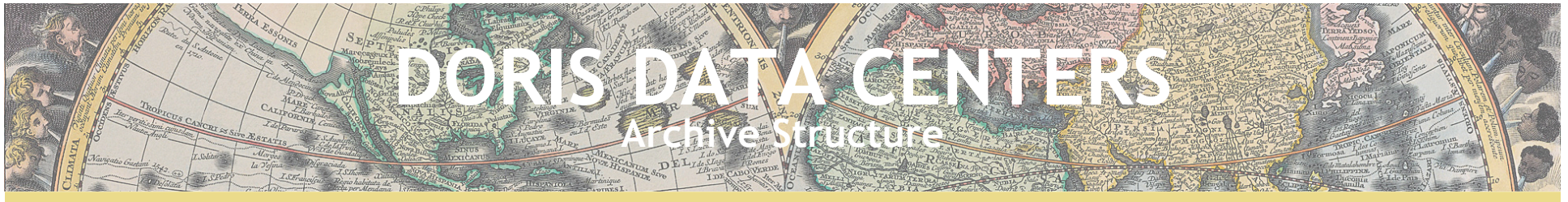
Governing Body

- General oversight of service
- Future direction

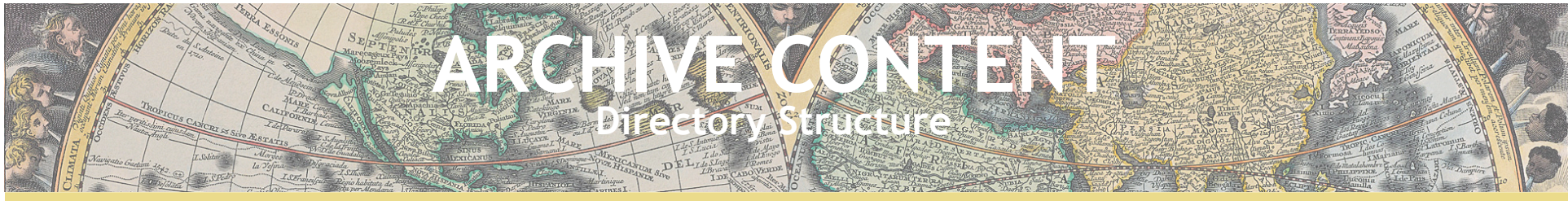


DORIS DATA AND PRODUCT FLOW (CDDIS)

- ◆ 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



- ◆ **New archive structure implemented at data centers in January 2003**
- ◆ **Description at 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***
 - ◆ Mirror of IDS Central Bureau information files



Directory	File Name	Description
Data Directories		
/doris/data/ <i>sss</i>	<i>sssd</i> data <i>MMM.LLL.Z</i>	DORIS data for satellite <i>sss</i> , cycle number <i>MMM</i> , and version <i>LLL</i>
	<i>sss</i> .files	File containing multi-day cycle filenames versus time span for satellite <i>sss</i>
/doris/data/ <i>sss</i> /sum	<i>sssd</i> data <i>MMM.LLL</i> .sum.Z	Summary of contents of DORIS data file for satellite <i>sss</i> , cycle number <i>MMM</i> , and file version number <i>LLL</i>
Product Directories		
/doris/ <i>prodtype</i> / <i>ccc</i> /	orbits/ <i>ccc</i> / <i>ccc</i> <i>sssVV.bXXDDD.eYYEE</i> <i>E.sp1.LLL.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>
	sinex_global/ <i>ccc</i> <i>WWuVV</i> .snx.Z	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>
	sinex_series/ <i>ccc</i> / <i>cccYYDDDt</i> <i>uVV</i> .snx.Z	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>
	stcd/ <i>ccc</i> <i>WWtu</i> / <i>cccWWtuVV</i> .stcd. <i>aaaa.Z</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>
	geoc/ <i>ccc</i> <i>WWtuVV</i> .geoc.Z	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>
	eop/ <i>ccc</i> <i>WWtuVV</i> .eop.Z	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>
	iono/ <i>ccc</i> / <i>sss</i> / <i>ccc</i> <i>sssVV.YYDDD</i> .iono.Z	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> .
Information Directories		
/doris/cb_mirror		Mirror of IDS central bureau files



- ◆ **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**



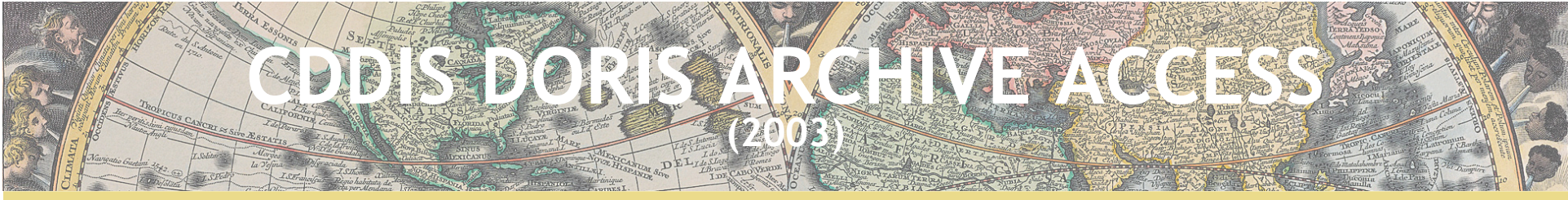
Satellite	Time Span
TOPEX/Poseidon	25-Sep-1992 through present
SPOT-2	31-Mar through 04-Jul-1990 04-Nov-1992 through present
SPOT-3	01-Feb-1994 through 09-Nov-1996
SPOT-4	01-May-1998 through present
SPOT-5	11-Jun-2002 through present
Jason-1	15-Jan-2002 through present
ENVISAT	13-Jun-2002 through present



- ◆ **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**

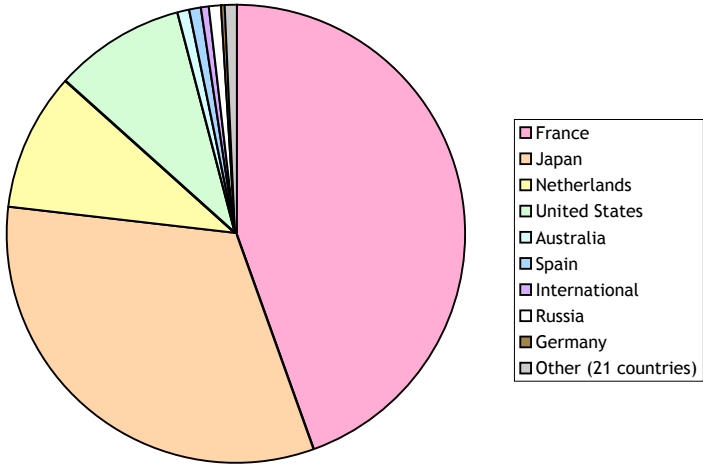


- ◆ **Products archived thus far (subdirectory name):**
 - **IGN/JPL (ign)**
 - ◆ TRF-origin time series (geoc)
 - ◆ Global SINEX solutions (sinex_global)
 - ◆ Time series of SINEX solutions, weekly and monthly (sinex_series)
 - ◆ EOP time series (eop)
 - **LEGOS/GRGS-CLS (lca)**
 - ◆ Orbits, Jason-1 (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)

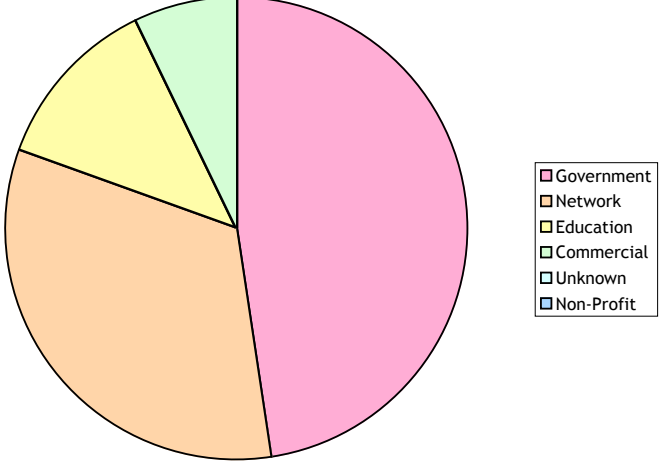


Number of Files Downloaded

By Country



By Institution Type

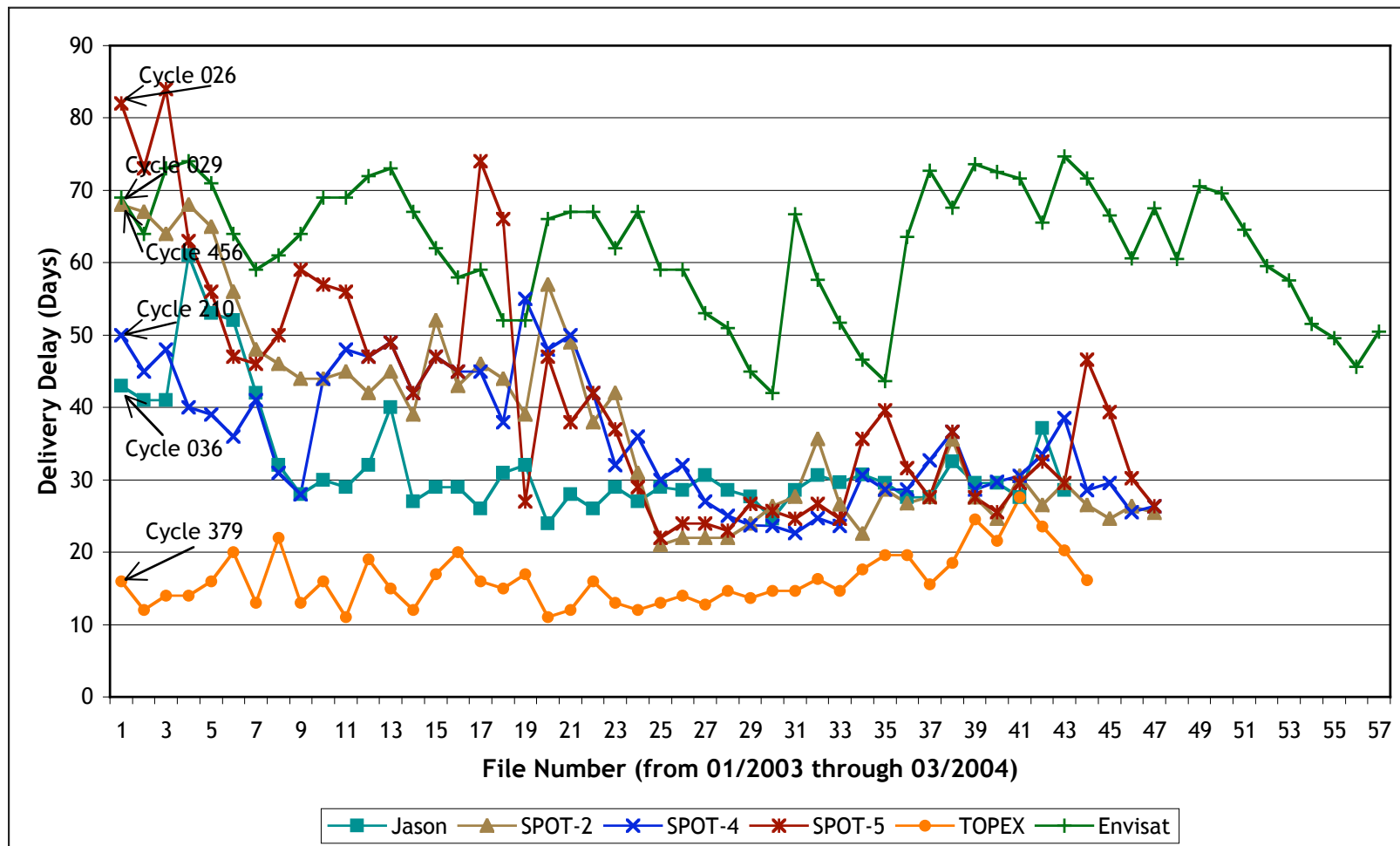


Note: Over 70% of downloads from France are from IGN for data archive mirroring purposes

- ◆ 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



- ◆ **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.



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