

International DORIS Service

Lanham, MD, USA

March 13, 2002

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### STEERING COMMITTEE MEETING Lanham, MD, U.S.A., March 13, 2002

#### **AGENDA**:

- Preparation of the IDS workshop in Biarritz
- Status of the IDS
- Stations selection committee
- Early Jason-1 results

#### **MAIN DECISIONS:**

\* Next Steering Committee meeting: June 14, 2002 (IDS Workshop, Biarritz, France)

#### **ATTENDEES:**

Steering Committee: Martine Feissel, Frank Lemoine, Carey Noll, John Ries, Laurent Soudarin, Gilles Tavernier,

Pascal Willis

Invitees: Jean-Pierre Granier, Nikita Zelensky

#### IDS workshop in Biarritz June 13-14

- see preliminary program in appendix (Martine Feissel suggested minor changes since our meeting in Washington)
- deadline for the program: April 15
- deadline for abstracts: May 6 (to be distributed on a CD-ROM during the workshop)
  - abstracts or full papers? It should be the same as for SWT and it is better to keep it unformal: people should be free to provide abstracts or papers or viewgraphs
- June 13
  - Chair persons of the last session will encourage people to look at the posters and to meet Steering Committee members to express their needs and expectation ("What are the questions that the IDS Pilot Project should answer?", "What are the issues for which an International DORIS Service is needed?"). There will be a quick Steering Committee meeting to summarize the discussions.
  - Session 4 : 2 slides as a conclusion : what an International Service offers and what is expected/provided by IDS
- June 14
  - Analysis workshop = analysis issues
  - What is the DORIS measurement
  - What is the processing (whole process)
  - Preliminary presentation of the system
  - Network workshop
- An email about June 14 Analysis workshop will be sent to candidate Analysis Centers
- An email about June 14 Network workshop will be sent to candidate Stations
- The <u>workshop announcement will be updated</u> according to the new decisions (http://www.cta-congres.com/BIARRITZ2002/twodori.html)
- There will be a Steering Committee on June 14, after the workshop, for orientations, decisions.

Martine Feissel

Frank Lemoine
Jean-Pierre Granier
Gilles Tayernier

Status of the Analysis coordination:



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**IDS** 

Martine Feissel is now Analysis coordinator for the IDS Pilot Experiment. She noticed that it is sometimes difficult to find information about DORIS and IDS. It is necessary to:

- ease access to existing information,
- add missing information

She will prepare an analysis coordination web page, focusing on:

- emphasis on the connection with other techniques
- comparison and combination of solutions for various products:
  - stations coordinates
- orbits (also taken into account in other frameworks: SWT, POD groups) in coordination with the existing information centers (CDDIS, Central Bureau).

#### Analysis campain:

- stations coordinates:
  - IGN/JPL, INASAN, UTEX/CSR, LEGOS/CLS, CNES/SOD and CLS/SSALTO Analysis Centers are willing to submit solutions.
  - Other Analysis Center may join the campain: AIUB/IGN, IAA, Geodetic Observatory PECNY
  - Proposals for presentations/posters are expected for the workshop
- orbits:
  - a test campain should be prepared for orbit determination: limited period of time, all types of solutions (single technique, multi techniques)
  - Martine Feissel will <u>look for a coordinator</u> to handle this campain

Martine Feissel

#### Orbit analysis coordination:

- The objective should be to get, through comparison and combination, an « average orbit » as the IDS orbit product
- An IDS meeting/workshop could be organized related to orbit comparisons.

#### Data Center issues:

- Data Center organization: one directory for each product
- Stations coordinates files naming convention for periodic solutions:
  - CCCYYDDDSUU.snx.z
  - CC: 3 digits = analysis center id
  - YY : 2 digits = vear
  - DDD: 3 digits = day of year
  - S: 1 digit = solution type (D = daily, W = weekly, M = monthly)
  - UU : 2 digits = version
- Stations coordinates files naming convention for global solutions:
  - CCCYYSUU.snx.z
  - CC: 3 digits = analysis center id
  - YY: 2 digits = year of submission
  - S: 1 digit = solution type (D = DORIS, C = combined)
  - UU : 2 digits = version
  - Carey Noll will prepared a <u>DORIS Mail</u> on this topic.
- Carey Noll will prepared a **DORIS Mail** on this topic.
- Orbit files: SP3 rather than POE format is preferred, with the following remarks:
  - provided that it is possible to allocate a "DORIS" satellite number or acronym (e.g. SP2, SP4, TOP, JA1, ENV...)
  - GPS time or TAI? time flag available in the future LEO SP3 format?
- Time series of coordinates:
  - the <u>naming convention</u> should be similar to what is done for geocenter

Carey Noll

« Orbit coordinator » & John Ries

Laurent Soudarin



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- about the 4 digits station acronym: we need a convention for a few specific sites such as Ottawa and Arequipa due to antenna displacements without acronym change (OTTA = OTTA then OTT1 for instance)
- Geocenter coordinates time series files: Pascal Willis will propose a format and naming convention:
- Ionosphere products are to be defined: GPS like? AVISO like?
- IGN/LAREG Data Center: Edouard Gaulué will attend the workshop and deliver some information about his activity on DORIS
- We need to better identify who are the users through the <u>access to Data Centers</u>
- The same need applies for the <u>IDS Web server</u> maintained by the Central Bureau
- Data delivery:
  - The delay improved for TOPEX measurements: 10 to 15 days after the last measurements
  - The delay is regularly increasing for SPOT 2 and SPOT 4 measurements: 2 month after the last measurement, still increasing
  - The Steering Committee recommends that CNES should guarantee a maximum delay for measurements delivery to Data Centers (20 days for TOPEX, Jason, ENVISAT and 40 days for SPOT, for instance)
  - <u>A formal mail</u> by the members of the Steering Committee will be sent to the CNES authorities.
- Maneuvers files are ready for <u>regular delivery</u> (upgrade for each maneuver? monthly?)
- « Data calendar »: Jean-Pierre Granier presented a possible synthetic presentation of available data with information about cycle/arc and maneuvers. These calendars (one for each satellite) could be available on the IDS Central Bureau ftp server. Jean-Pierre Granier will provide further explainations
- Cycle/arc or daily data files?
  - Both Data Centers should look identical and provide the same types of files.
  - The Steering Committee will <u>send a letter to IGN</u> (Michel Kasser) stressing the need for IDS to rely on at least two mirror DataCenters.
- CNES should provide a <u>summary of delivered data</u> with the data (number of measurements per day).
- Data for all satellites should be <u>delivered using the new « Jason » format</u>, starting January 15<sup>th</sup>. Users should be notified with a DORIS Mail.
- IDS logo: it is choosen (see heading)
  - The logo should be <u>available on the IDS Central Bureau server</u> (color and black & white, various sizes)
- Information about satellites: geometry, antenna location, attitude files...
  - It should be available on a web server
  - Martine Feissel will provide a <u>tentative calendar of installation</u> (including CDDIS mirroring)

#### Format issues:

The existing format working group was dealing with all format issues. It was decided that:

- format issues will be <u>handled by Analysis Coordination</u> instead of the existing format working group which ceases its activity
- temporary working groups could be set up within the analysis group « as

Pascal Willis

Carey Noll
Laurent Soudarin

Jean-Pierre Granier Gilles Tavernier

Jean-Pierre Granier
Gilles Tayernier

Laurent Soudarin

Martine Feissel

Martine Feissel



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	necessary » for a specific product	
	Old SPOT 2 data:	
	They are still useful to determine:	
	- long term varying terms of Earth gravity,	
	- stations coordinates	
	Before approaching CNES to request the delivery of these data, the steering Committee should define priorities.	
	Next actions to be done:	
	- possible meeting in EGS (Nice, 22-26 April 2002): John Ries won't attend, Carrey Noll will be there on Wednesday 24 and Thursday 25.	
	- On the way to become the International DORIS Service (IUGG 23 Gen Assembly, Sapporo, Japan, August 2003): discussion with IAG and IERS. The question « how do we proceed » will be addressed during the next Steering Committee Meeting in Biarritz.	
Stations selection committee	The stations selection committee is now chaired by Frank Lemoine, Kristine Larson staying on as a member.	
	Beacons availability:	
	- one second generation beacon is available now for IDS selection (Toulouse)	
	- one second generation beacon is available (now in Australia, after Sorsdal experiment)	
	- another second generation beacon should be available soon	
	Selection process:	
	- Among the received proposals, 10 are now complete.	
	- The committee will <u>recontact organisms</u> to check wether the proposals are up to date and to remind them about the workshop in Biarritz.	Frank Lemoine
	- The committee will then <u>define scientific objectives</u> for sites selection.	Frank Lemoine
	- One or two selections will occur within 30 days.	Frank Lemoine
Early Jason-1	Jason-1 DORIS data are very clean:	
results	- 30% improvement in noise	
	- 30% increase of the number of measurements	
	DORIS + Laser reduced dynamics orbits seems to be better than GPS (JPL) reduced dynamics orbits. Due to GPS Z-shift, differences are found between reduced dynamics and other GPS orbits. The behavioor is not the same using DORIS and Laser data.	



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# **IDS workshop** Biarritz, 13-14 June 2002

## **Preliminary Program**

### **Thursday 13 June**

08h00 - 09h00 Registration and welcome coffee

#### **SESSION 1: DORIS Pilot Experiment - IDS**

Conveners

M. Rotacher (TBC), G. Tavernier

09h00 - 09h20 Introduction & Pilot Experiment status

G. Tavernier

09h20 - 09h35 A new generation of receivers, a new multi-missions orbitography and altimetry center

P. Sengenes (TBC)^

09h35 - 09h50 Network status and enhancement

H. Fagard

09h50 - 10h10 Goals for DORIS Network extension

F. Lemoine

10h10 - 10h30 Data Centers, data flow coordination

C. Noll

#### 10h30 - 11h00 Coffee break

#### **SESSION 2: Orbits and related products**

#### Conveners

J. Ries, J.P. Berthias (TBC)

11h00 - 11h20 DORIS contribution to future ITRF

Z. Altamimi (TBC)

11h20 - 11h40 DIODE results and applications of real time orbit

C. Jayles or J.P. Berthias (TBC)

11h40 - 12h00 Dual processing of TOPEX and JASON

P. Willis

12h00 - 12h20 External validation of DORIS orbit

J. Ries

Other ideas:

ENVISAT orbit validation, ENVISAT POD (R. Scharoo?)

Ionosphere

12h30 - 14h00 Lunch



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#### **SESSION 3: DORIS analysis results**

Conveners

M. Feissel, J.F. Crétaux

14h00 - 14h15 IDS contribution to global monitoring of planet Earth

M. Feissel

14h15 - 14h35 Geodetic and geophysical velocity fields

L. Soudarin, D. Argus

14h35 - 14h55 Vertical velocities and sea level monitoring

J.F. Crétaux

14h55 - 15h10 The Sorsdal (Antarctic) experiment

R. Govind (& J.-J. Valette?)

Presentations are solicited on other aspects of DORIS analysis results, e.g. EOP and geocenter time series, ionosphere. The session will include posted presentations, with sufficient space and time to allow detailed discussion. Posters will stay posted over the two days of the Workshop.

#### 15h30 - 16h00 Coffee break

#### SESSION 4: IDS analysis campaign

#### Conveners

16h00 - 16h30 The IDS Analysis Campaign: results and preview of IDS products

J.J. Valette (& Z. Altamimi? L. Soudarin?)

Results and experiments from the analysis centers will be presented at the poster session..

#### POSTER SESSION

Conveners

P. Willis, J.P. Granier

16h30 - 18h00

Some ideas:

DORIS analysis at SOD/CNES, J.-P. Berthias

DORIS analysis at CSR, J. Ries

DORIS analysis at INASAN, S. Tatevian

DORIS analysis at IAA, G.A. Krasinsky

DORIS analysis at JPL, P. Willis

DORIS analysis at CLS/GRGS, J.-F. Crétaux, L. Soudarin, J.-J. Valette

First steps towards the treatment of DORIS data with the Bernese software, K. Le Bail et al.

Time series of station and geocenter coordinates, P. Sillard

Comparison/Combination of TRF and EOP DORIS solutions, J.-J. Valette, L. Soudarin, Z. Altamimi

DORIS orbits and the terrrestrial reference frame, L. Morel

Altimeter calibration at Aspretto (Corsica), P. Exertier et al.

Deformations studies based on space geodesy, X (Vladivostock, cf J.-F. Crétaux)



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Vertical velocities and the geoid, Tanaka (cf J.-F. Crétaux)

## Friday 14 June

#### Analysis workshop

DORIS data analysis: technical discussions

Conveners

M. Feissel, J.J. Valette

Analysis Centers...

Analysis campains

**Formats** 

The discussion will concentrate mainly on two aspects of the data analysis, 1. Modeling DORIS observations, and 2. Analysis strategies.

The discussions will be introduced by invited position papers.

Contributions are solicited, either oral or posters.

9h00 - 12h00

#### Network workshop

#### Conveners

F. Lemoine, H. Fagard

stations host agencies + candidates and the station selection committee + DORIS installation and maintenance department

14h00 - 17h00

Description of operational constraints, H. Fagard Examples of mistakes (monumentation), A. Orsoni

#### **Steering Committee meeting**

17h30 - 19h00?