

IADC Re-entry Database Upgraded Web-frontend

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Revisit: core functionalities of the REDB Web interface



1. Provide background information on re-entry space objects
 - a. Current (open) IADC re-entry campaigns
 - b. Past (archived) IADC re-entry campaigns
2. Provide means for message exchange among campaign participants
 - a. Bulletins (visible for all participants)
 - b. Direct messages (visible for sender and recipients)
3. Provide means for exchanging data among campaign participants
 - a. Orbital elements
 - TLE
 - Osculating Cartesian states
 - Osculating Keplerian elements
 - b. Re-entry predictions
 - c. Graphical representation of results

Current version of the IADC Re-entry Database



1. Installed and hosted at ESA/ESOC (since 1997/1998)
2. Closely connected to Oracle RDBMS through Oracle's Web Server
3. Uses legacy Sun/Solaris infrastructure
4. Similar set-up as for ESA's DISCOS
 - a. Extensive use of CGI programs executed on server (mainly PL/SQL, some Perl, little Fortran)
 - b. Can be reached now at:
<http://131.176.60.11:8000> (or <http://mas3.esoc.esa.de:8000/>)
5. Authentication based on user/password and campaign password
6. Cookie-based monitoring of connection time, automatic logout (1h)


1. Experienced capacity issues (as for TLE upload function)
2. Modernized computer hardware at ESOC
(migration Solaris → Linux, shorter renewal cycles, new ESOC baseline, ...)
3. Higher demands on security
 - a. Separation of front-end and database
 - b. Database placed in a completely secured environment
4. Improvement of usability
(changes and new features on the screenshots to come on the next slides)
5. Considerations for a **new** implementation of web-interface
 - a. No campaign campaign password required anymore
(visibility based on credentials and “campaign membership”)
 - b. Data entries via textual lines (flexible parser)
 - c. Support of more graphic formats (added jpg, could be extended)
6. Improvement of administration and maintainability
(modern development tools, fewer licensing constraints)
7. **No changes** to underlying (back-end) database architecture, database content, and user data (credentials, email addresses, etc.)

1. <https://131.176.60.190/iadcweb/IADCWeb.html>
2. Technical evaluation by test campaign “IADC TEST 2012” starts now
 - a. Campaign participants are invited to try and evaluate the new front-end
 - b. Feed-back on functions, look-and-feel, and on browser issues is very welcome and very much appreciated
 - c. Please request membership in IADC TEST 2012 via “join campaign function” (or send email to DBA)
3. Old credentials stay valid
4. Accept the SSL certificate (only HTTPS protocol is supported)
5. Use the logout button (session expires after 1h)
6. All technical correspondence shall go to discosdba@esa.int

Login window



Inter-Agency Space Debris Coordination Committee



Welcome to the IADC Re-Entry Database hosted at ESA/ESOC

User

Password

Login!

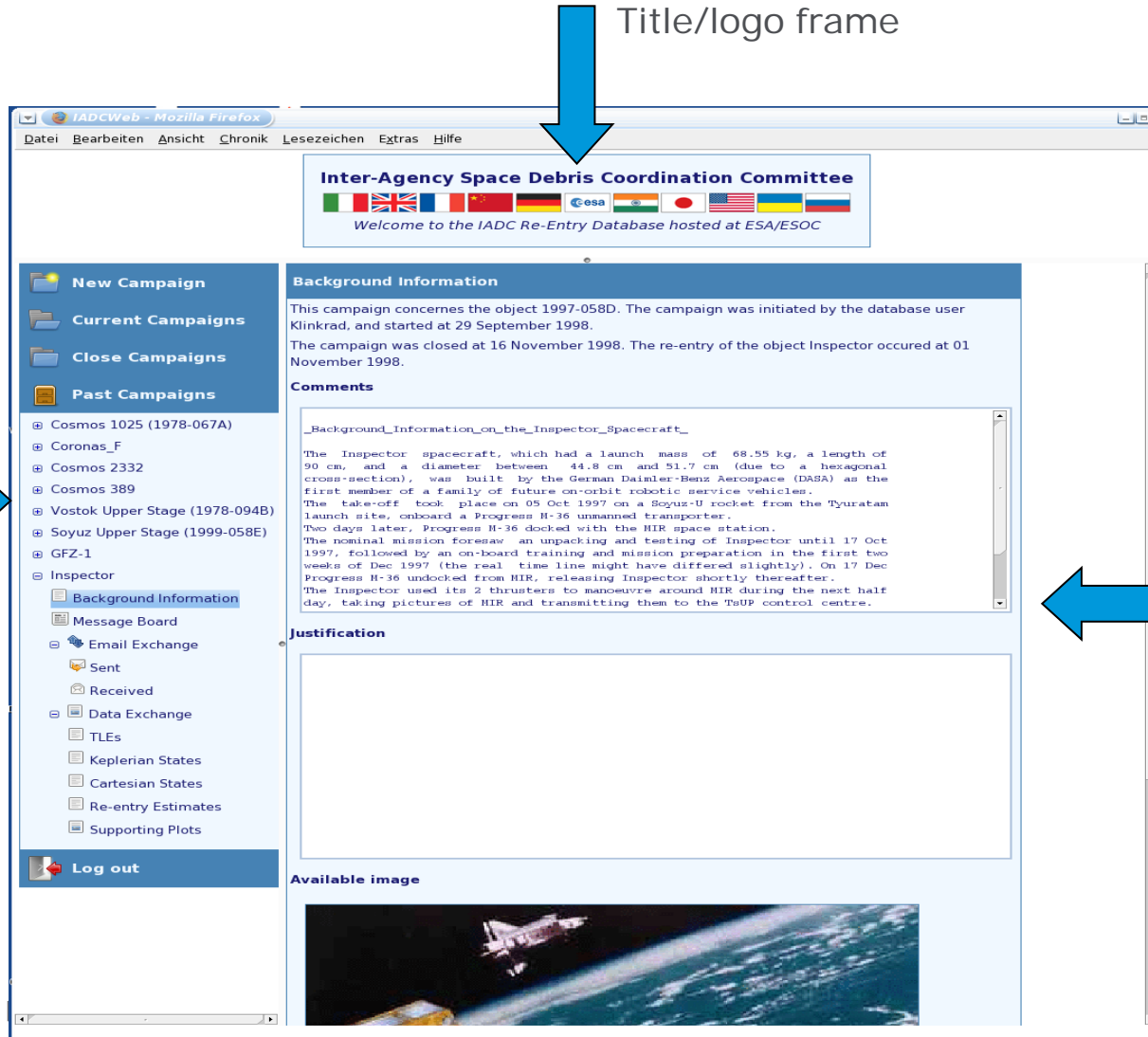
The IADC Re-Entry Database allows IADC Member organisations to exchange data on potentially dangerous re-entries of risk objects. Only registered IADC Members and associated organisations are authorised to use this database.

Note: An automatic log-off will be initiated after periods of more than 1 hour(s), if no user activity is recorded.

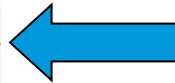
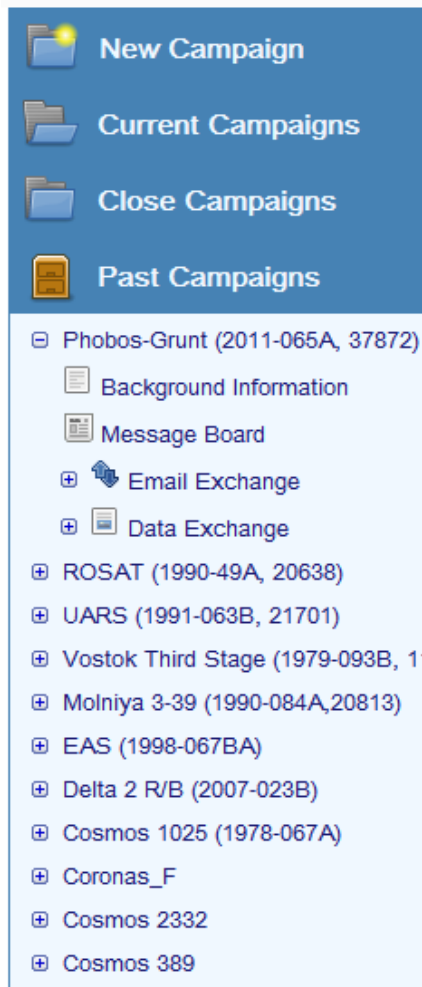
Layout overview

Navigation
in vertical
menu:
current
and past
campaigns
are listed,
if member

Title/logo frame



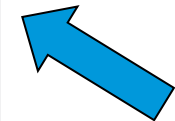
Main frame,
content
depends on
selection in
navigation



Request to create a new campaign



Display (and work with) current campaigns, if not member, only a "join campaign" option is displayed that allows to send a request to the IADC REDB administrator, menu tree as for "past campaigns" below



Request to close open campaigns, allows to send an email to the IADC REDB



Inspect past campaigns (only displayed if member), per campaign, the menu tree consists of:

- Background information
- Message board (history of bulletins)
- Email exchange (history of sent and received emails)
- Data exchange (history of exchanged data)
 - TLEs
 - Keplerian States
 - Cartesian States
 - Re-entry estimates
 - Supporting plots



(not shown) log out (immediate closing of session)

Request to create a campaign



Inter-Agency Space Debris Coordination Committee



Welcome to the IADC Re-Entry Database hosted at ESA/ESOC

New Campaign
[Create new campaign](#)
Current Campaigns
Close Campaigns
Past Campaigns
Log out

New Campaign

The final acceptance of a new re-entry campaign will require a consensus by all IADC Members. The proposer of a new campaign will be notified by the IADC Re-Entry Database administrator on the acceptance or rejection.

Please specify the re-entering object.

COSPAR ID (YYNNPPPP) or SSN ID

Please provide some personal information.

Name

Office address

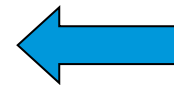
Email

Phone number

Fax number

Please provide a justification for the request

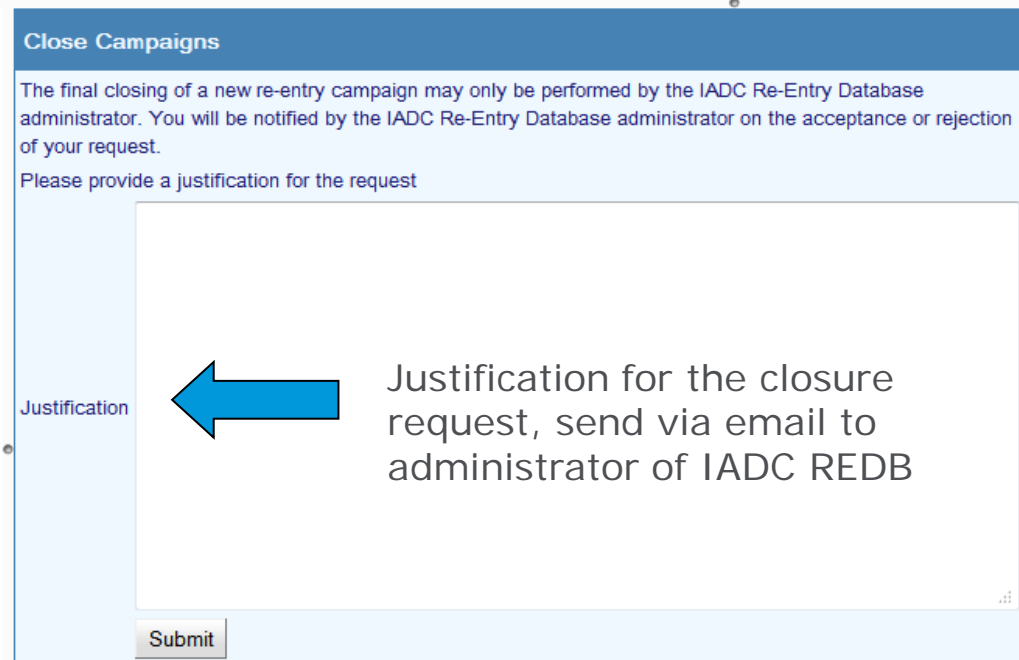
Justification



Personal information is taken from user data in IADC REDB

Closing campaigns

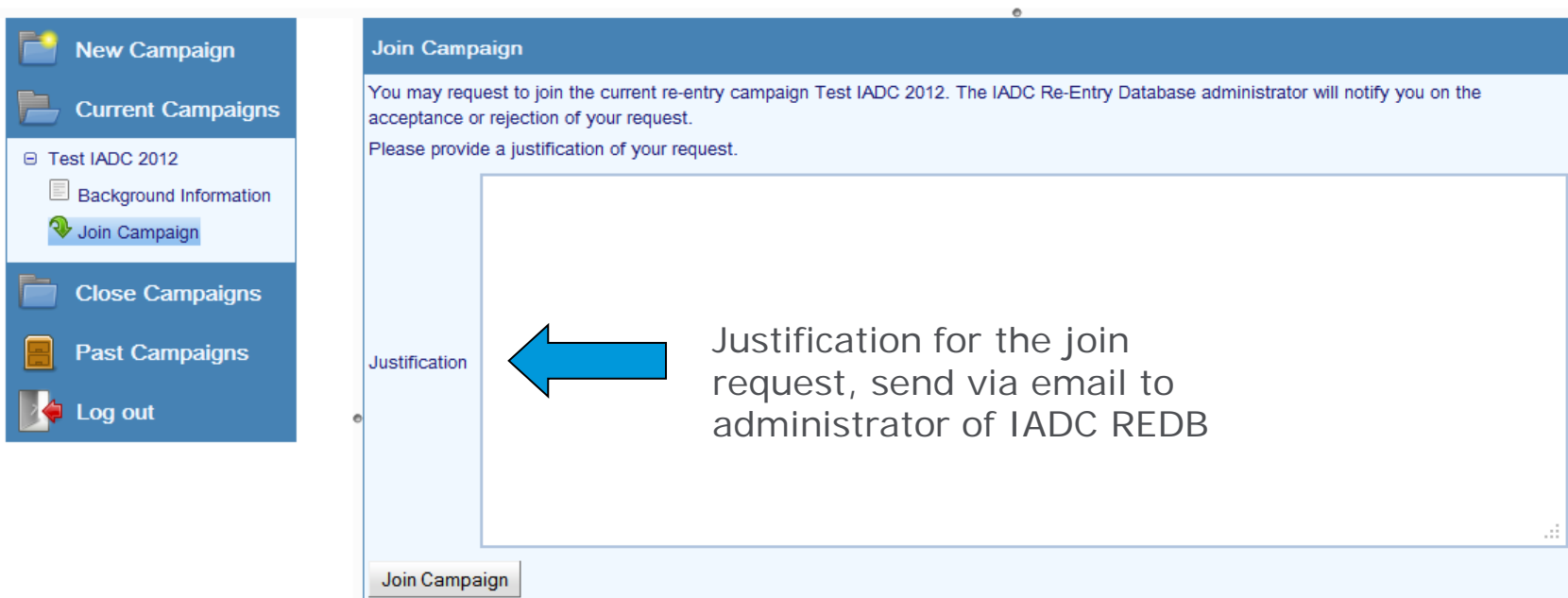
Closure
can be
re-
requested
for all
campaigns
where the
user is a
member



The screenshot shows the 'Close Campaigns' form. It has a title bar 'Close Campaigns' and a text area with the following content: 'The final closing of a new re-entry campaign may only be performed by the IADC Re-Entry Database administrator. You will be notified by the IADC Re-Entry Database administrator on the acceptance or rejection of your request. Please provide a justification for the request'. Below this is a large text input area labeled 'Justification' on the left. A blue arrow points to this area with the text 'Justification for the closure request, send via email to administrator of IADC REDB'. At the bottom right of the form is a 'Submit' button.

Join campaigns

Limited number of options for current campaigns where user is **not** a participant



Join Campaign

You may request to join the current re-entry campaign Test IADC 2012. The IADC Re-Entry Database administrator will notify you on the acceptance or rejection of your request.

Please provide a justification of your request.

Justification

Justification for the join request, send via email to administrator of IADC REDB

Join Campaign

Options for campaign participants



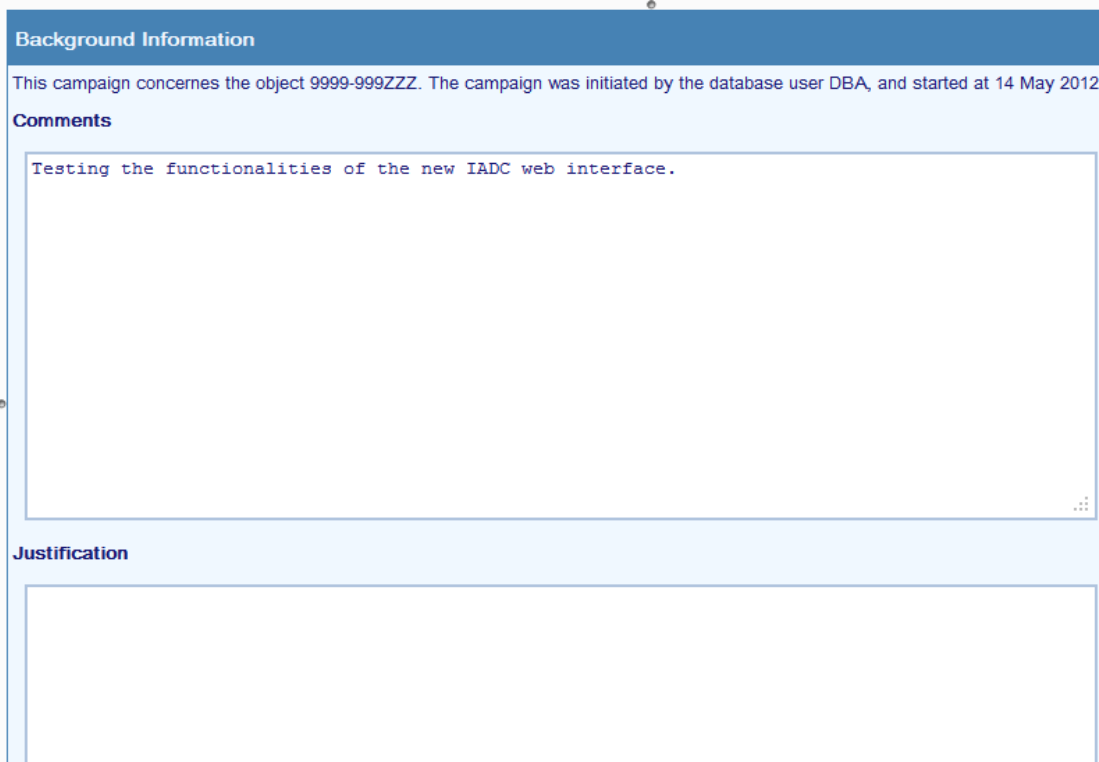
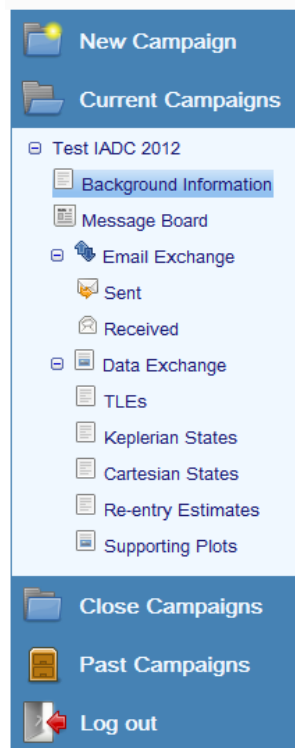
Options for campaigns where user **is** a participant

Review
background
information

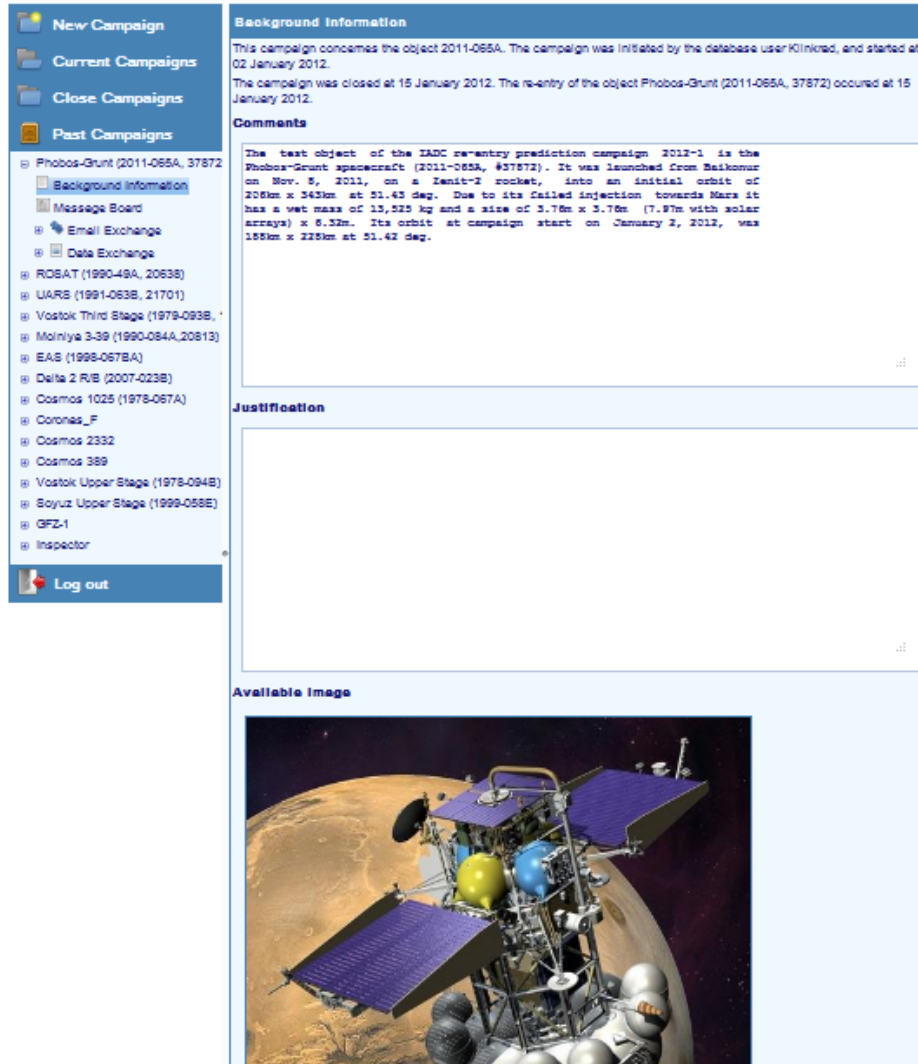
Access bulletin
messages

Review sent and
received
messages

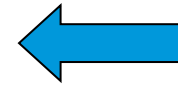
Perform data
exchange



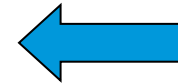
Background information



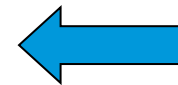
The screenshot shows a web interface for campaign management. On the left is a sidebar with a tree view containing categories like 'New Campaign', 'Current Campaigns', 'Close Campaigns', and 'Past Campaigns'. Under 'Current Campaigns', 'Phobos-Grunt (2011-065A, 37872)' is selected, with sub-items for 'Background Information', 'Message Board', 'Email Exchange', and 'Data Exchange'. The main content area has a header 'Background Information' and contains three sections: 'Background Information' (text about the campaign), 'Comments' (a text area with a sample comment about the Phobos-Grunt spacecraft), 'Justification' (an empty text area), and 'Available Image' (a photograph of the spacecraft in orbit over Mars).



Campaign open/close information



Comments provided by campaign initiator



Justification of request, if applicable

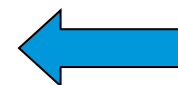


Image of object, if available

Bulletin and email exchange



Email Exchange

You sent and received the following emails.

- 15May12 11:00 by DBA (discosdba@esa.int, crass.results@googlemail.com): test
- 15May12 13:12 by DBA (discosdba@esa.int, crass.results@googlemail.com): tt
- 15May12 14:31 by DBA (discosdba@esa.int, crass.results@googlemail.com): Test Email

Sort according to: **Email epoch** **Sender** ← Some simple sort options

Sender: DBA (discosdba@esa.int, crass.results@googlemail.com)
Recipients: DBA (discosdba@esa.int, crass.results@googlemail.com)
Epoch: 2012-05-15 11:00:23.000000000
Subject: test

Message: test ← Option to create new emails
Recipients are any subset of
campaign participants

Send a new Email: **New Email**

Data exchange of orbital information



Data Exchange

The following data has been exchanged.

- 15May12 14:52 Supp. plot by DBA (discosdba@esa.int, crass.results@g
- 15May12 15:14 Keplerian by DBA (discosdba@esa.int, crass.results@g
- 15May12 15:15 States by DBA (discosdba@esa.int, crass.results@ggoog

Sort according to:

20121212	131212.121	+7000.000000	+0.00100000	+074.12300
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Support for multiple selections

Some simple sort options

Data ready for "cut and paste"

Exchange of re-entry predictions



- New Campaign
- Current Campaigns
 - Test IADC 2012
 - Background Information
 - Message Board
 - Email Exchange
 - Sent
 - Received
 - Data Exchange
 - TLEs
 - Keplerian States
 - Cartesian States
 - Re-entry Estimates
 - Supporting Plots
 - Close Campaigns
 - Past Campaigns
 - Log out

Data Exchange

The following predictions have been loaded up.

15May12 15:20 Prediction by DBA (discosdba@esa.int, crass.results@googlemail.com)

Sort according to:

Input epoch

Data epoch

Provider

Format:

Origin: originator, origination epoch, orbit epoch [both: YYYYMMDD HHMMSS [UTC]]

Window: start epoch COIW, epoch COIW, end epoch COIW [all: YYYYMMDD HHMMSS [UTC]]

Location: longitude[deg], latitude[deg], altitude[km], altitude epoch [YYYYMMDD HHMMSS [UTC]]

Comment:

```
DBA 20120515 152000 20121210 030304
20121212 020000 20121212 030304 20121212 040000
+080.000000 -035.000000 +00.000
null
comment
```

Submit new data:

New Data

Support for multiple selections (shift key)

Some simple sort options

Data ready for "cut and paste"

New data insertion



New Campaign

Current Campaigns

Test IADC 2012

- Background Information
- Message Board
- Email Exchange
 - Sent
 - Received
- Data Exchange
 - TLEs
 - Keplerian States
 - Cartesian States
 - Re-entry Estimates
 - Supporting Plots

Close Campaigns

Past Campaigns

Log out


Submit new data

Data posted here will be visible to all participants of the current campaign. You may not alter the data after posting.

Submitter

Format:
orbit epoch [YYYYMMDD HHMMSS [UTC]]
start_epoch_COIW epoch_COIW end_epoch_COIW [all: YYYYMMDD HHMMSS [UTC]]
longitude[deg] latitude[deg] altitude[km] altitude epoch [YYYYMMDD HHMMSS [UTC]]
comment lines, that are
considered until a blank line
terminates this prediction.

DBA 20120515 152000 20121210 030304
20121212 020000 20121212 030304 20121212 040000
+080.000000 -035.000000 +00.000
null
comment



Data entry via flexible
ASCII format (cut and paste)

Format verification after
"submit", and immediate user
notification on parsing result,
see next slide for details of
supported format

Submit

Cancel

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European Space Agency

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Exchange of graphical information


- New Campaign
- Current Campaigns
 - Test IADC 2012
 - Background Information
 - Message Board
 - Email Exchange
 - Sent
 - Received
 - Data Exchange
 - TLEs
 - Keplerian States
 - Cartesian States
 - Re-entry Estimates
 - Supporting Plots
 - Close Campaigns
 - Past Campaigns
 - Log out

Data Exchange

The following plots have been loaded up.

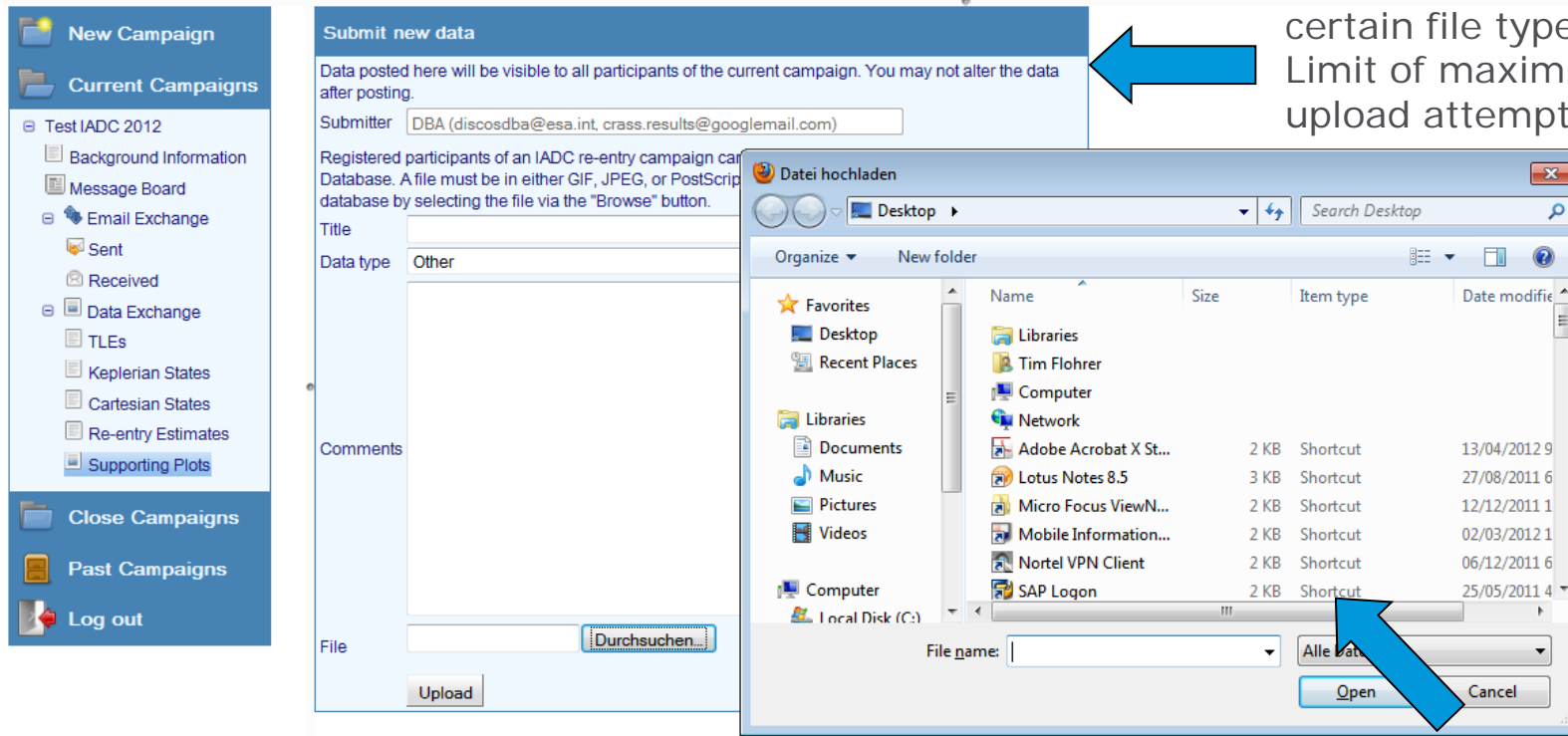
15May12 14:52 Supp. plot by DBA (discosdba@esa.int, crass.results@goo

Sort according to:



Selection of available plots, which are displayed below, download via "image→save" functionality of browser

Submission of new graphical information



Limitation of submission to certain file types (gif, jpg, ..)
Limit of maximum file size for upload attempts (10MB)

File selection dialog is function of the local web browser

- The new IADC REDB web front-end is available for testing
- Review comments by all IADC Members is highly appreciated, in particular with regard to the available functionality and usability in different browser environments
(recent browsers, such as Firefox, Safari, Chrome, Internet Explorer 8 were tested and validated for compatibility)
- Please join the TEST 2012 campaign and try the new REDB interface
- Feedback expected until September 2 (IADC SG meeting in Naples)
- The current IADC REDB remains active and official until further notice.