

# **Delta-DOR WG: Report of the Spring 2015 Meeting**

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## SEA Area WG REPORT SUMMARY TECHNICAL STATUS

### Delta-DOR WG

**Goal: Standardising cross-support for Delta-DOR measurements**

**Working Status: Active**

**Summary progress / Major accomplishments:**

**Magenta Book** on Quasar catalogue: final draft revised → **Resolved to go for Agency Review**

**Magenta Book** on DDOR operations v2: second draft provided, revision on-going

**Green Book**; Revision will start in 2016

**New Magenta Book** proposed: **DDOR architectural guidelines for meeting performance targets** (to be started in 2017)

Revision of RDEF **Blue Book** proposed (to be started in 2017)

Status:	OK	CAUTION	PROBLEM
	X		

**Progress since last meeting: Magenta Book on operations reviewed / Magenta Book on Quasar catalogue ready to **go for Agency Review****

# Systems Engineering Area Report



## Delta-DOR WG → Goals achieved so far

### Goals:

- Develop Delta Differential One-way Ranging (Delta-DOR) service
  - Coordinate with work in other WGs (SLS/RF&M, MOIMS/Nav, CSS/SM, SEA/SANA)
  - Develop integrated service, interoperability points (interfaces) and related standards

### Status:

- Magenta Book on DDOR operations (containing DDOR Service Request) published in 2011
- Blue Book on Raw Data Exchange Format (RDEF) published in June 2013
- Zodiac Data Systems has produced in early 2014 an open loop receiver for Delta-DOR use based on
  - Service Request of the Magenta Book as input
  - RDEF format as output
- Green Book published in 2013
- Update of DDOR recommendations in RF&Mod BB published in 2014.

# Systems Engineering Area Report



## Delta-DOR WG → Input to the strategic plan

### Goals:

- Develop Delta Differential One-way Ranging (Delta-DOR) service
  - Coordinate with work in other WGs (SLS/RF&M, MOIMS/Nav, CSS/SM, SEA/SANA, FT WG)
  - Develop integrated service, interoperability points (interfaces) and related standards

### Working Group Status:

- Started new projects:
  - New Quasar Catalogue MB, procedures, validation & registry operations
  - Revision of MB on DDOR operations with new service request and quantitative criteria for validation
  - Revision of GB with new signal structure discussion (to be started in 2016)
- Planned new projects
  - Agreed to start **new Project MB** on DDOR architectural guidelines → **outstanding CMC poll**
  - Agreed to start **new Project BB** on the DDOR RDEF revision → **outstanding CMC poll**
  - Agreed to start **new Project BB** on Delta-DOR signal structures (still TBD with RF&Mod)
- CSS/SM coordination, D-DOR to be covered by next version of CSS- SM BB and File Transfer Project, joint meeting held (another planned).
- MOIMS/Nav coordination on specific addition into TDM for next meeting
- Three agencies (NASA, ESA, JAXA) have standardized D-DOR. Russia, China and India are developing the standardized capability too, this has been fostered by D-DOR WG interactions

# Books updates [1]

## MB Delta-DOR Quasar catalogue development

- ❖ An updated version of the book was distributed before the meeting to the WG and comments were collected
- ❖ The book has been edited/reviewed during the meeting, also with the participation of expert from NASA/JPL
- ❖ The book is ready to go for Agency Review

## Books updates [2]

- ❖ MB DDOR operations:
  
- ❖ The following has been discussed:
  - Review of the Service Request format and fields
  - As an outcome of the review, the Service Request field description in Table 6-1, will be re-edited following what was already included in BB on RDEF (where applicable). Also, more examples will be added in a dedicated Annex (informative)
  - Section 5.4 quantitative criteria for validation added, discussed and agreed
  - Section 7 (quasar catalogue) removed, since content is covered in a dedicated MB and in Section 6.2.1

# WG resolutions (1)



- ❖ WG resolution (1) The WG resolves that the **Magenta Book** on Quasar catalogue development is ready to go for Agency Review
- ❖ WG resolution (2): The WG resolves that the JPL quasar catalogue (rev 107D) is to be submitted to **SANA** for official release as applicable Quasar catalogue

# Review of charter



- ❖ No charter update was considered necessary at this meeting



# Summary of Goals and Deliverables



Date	Milestone
Fall 2014	<p>Revision of the Delta-DOR operations <b>Magenta Book</b> (chapter 5, chapter 6 Service Request format/information and Annex on items for IA)</p> <p>Evaluate results of interoperability testing and planning future activities.</p> <p>Continue interaction with File Transfer WG</p> <p>Charter revision and agreement on new <b>Magenta Book</b> on architectural guidelines for meeting DDOR performance requirements</p>
Spring 2015	<p>Revision of consolidated drafts of the Delta-DOR operations <b>Magenta Book</b> (chapter 5, Service Request format/information) and of the Quasar Catalogue <b>Magenta Book</b></p> <p><b><u>Resolution to go for Agency Review</u></b> of Quasar Catalogue <b>Magenta Book</b></p> <p>Present initial material and related discussion on the future revision of <b>Green Book</b></p> <p>Continue interaction with CSS-SM/RF&amp;Mod</p>
Fall 2015	<p>Revision of final draft of the Delta-DOR operations <b>Magenta Book</b></p> <p>Resolution to go for Agency Review of Delta-DOR operations <b>Magenta Book</b></p> <p>Resolution of RIDs on Quasar Catalogue <b>Magenta Book</b> (decision on whether to go for second round of Agency review or publish the book will be taken upon RIDs resolution)</p> <p>Present further material on the future revision of <b>Green Book</b></p> <p>Continue interaction with CSS-SM/RF&amp;Mod/Navigation WGs</p>

# Interactions with other WG [1]



## ❖ CSS-SM:

- A joint meeting was held on 23/03 – PM.
- DDOR WG presented examples of the Service Request (as elaborated in the current issue of the Magenta Book)
- CSS-SM introduced their work on the new SM BB
- DDOR WG is to send description of new Service Request and examples of new Service Request once finalised to CSS-SM
- CSS-SM to reformat/reorganise the Service Request to fit into the CSS framework (with discussion/agreement with DDOR WG)
- It was agreed that another joint session will be held in Fall 2015

## ❖ CSS-SM – File Transfer Project

- It was agreed that the File Transfer concept did not reach enough maturity to be discussed at this Spring meeting
- It was agreed that a joint session will be held in Fall 2015 to specifically discuss File Transfer issues (with emphasis on metadata)

# Interactions with other WG [2]



## ❖ RF&Mod:

- DDOR WG attended part of the session of RF&Mod on 26/03 – PM.
- In this session a new concept for TM-based RNG was introduced by JPL
- Some discussion followed on precision and accuracy of this proposed method
- DDOR WG will be kept in the loop of this discussion (if the technique will be proposed for standardisation)

## ❖ Navigation

- JAXA representative proposed to include sigma information (on all radiometric data) into the TDM format
- DDOR WG is intends to propose a joint session with Nav WG when this will be discussed

# Open Issues / Areas of concern

- ❖ What are the currently known open issues
  - None
  
- ❖ Areas of concern
  - Monitor the development of the white book of the File Transfer Project, which could have impacts on DDOR HW and/or SW applications