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DOCUMENT CHANGE RECORD

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REFERENCES

1	SMOS Proposal (COP16)		Nov 1998
2	Mission Requirement Definition	5.0	Mar 2001
3	S0-TN-CBSA-GS-0001	1.b	Mar 2003
4	SO-TN-CBSA-GS-0006	2.a	Oct 2004
5	SO-TN-ESA-SY-1369		June 2004

ACRONYMS

ASC	Ascending (pass)
CESBIO	Centre d'Etudes Spatiales de la BIOsphère
DESC	Descending (pass)
ECMWF	European Centre for Medium-range Weather Forecasting
ESA	European Space Agency
LST	Land Surface Temperature
NWC	National Weather Centres
PSU	Practical Salinity Unit
OS	Ocean salinity
Req	Required
SA	Service d'Aéronomie
SAG	Science advisory Group
SM	Soil Moisture
SMOS	Soil Moisture and Ocean Salinity Mission
SRD	System Requirement Document
SSS	Sea Surface Salinity
SST	Sea Surface Temperature
TB	Brightness temperature
TBC	To be confirmed
TBD	To Be Determined
TOA	Top Of Atmosphere
TX, TY	Polarised brightness temperature at antenna level and in antenna ref. frame
WS	Wind Speed
WSC	Wind Scatterometer

TABLE OF CONTENTS

1. INTRODUCTION

For the CATDS review, we were asked to produce a “SMOS User Model” which defines assumption about the numbers and kinds of users expected for the SMOS level 3 and 4 data products, and use this model to derive in a systematic way requirements for the CATDS assessment.

As the project made such a document it did not seem wise to re –invent the wheel so we just adapted the SO-TN-ESA-SY-1369 note to CATDS .

The present document is thus very close and, similarly, It first defines the different categories of users and their anticipated needs. It then identifies the ground segment features, which will be affected by user requirements. Finally, a synoptic table summarises the overall situation.

2. DEFINITION OF USER CATEGORIES

"Investigative"

Users interested in the application science and operational of the mission, in product improvement or new developments and in improvement of the mission/product performance details:

- Instrument developer (ESTEC, CNES, CASA, UPC, DLR, ...)
- Calibration teams (ESTEC, TUD, HUT, CERFACS science teams)
- Level 1 and 2 processor teams (ESTEC, ESRIN, Deimos, DLR, CERFACS, UPC, ESLs, selected Industry...)
- Level 1 cal / val groups
- Level 3 and 4 processor teams
- Level 2 and 3 cal / val teams

Typically groups from Agency, Industry, and science groups involved in retrieval and processors. Complementary groups (beyond those identified already) to be selected from "Announcement of Opportunity" proposals (once issued).

"Operational"

Users providing an operational or quasi-operational service by generating higher-level products or using SMOS data in an operational context (probably initially only on a trial-basis):

- ECMWF, National met centres
- GCM and OCM (MERCATOR and equivalent) model runners
- EUMETSAT "Satellite Application Facilities" SAFs): land-SAF, Ocean-SAF,...
- Aquarius and Hydros Teams
- Agencies and other instrument teams requiring SSS or SM
- Eventually disaster alert/monitoring agencies

"Comprehensive"	Users requiring global data sets at best accuracy as a standing order, with no specific time constraints for the delivery delay. Such users are science teams working with global models for ocean circulation, hydrology, surface / atmosphere interaction, etc.
"Regional"	Users with interest in limited regions and / or periods for "case studies" of specific phenomena: drainage basin modelling, river plume modelling, "El Nino" investigations, dis-aggregation etc. Small to moderate volume with no urgency.
"Occasional"	Users interested in very specific data sets for a limited area / time, mainly in support of (SMOS-unrelated) specific studies. Small volume and no time constraint, but "ease of access" and convenience of use are important.

3. USER REQUIREMENTS DEFINITION

The user requirements, as assessed by this model, are compiled in chapter 4. This chapter defines the various entries for the model:

No. of users: Estimated number of users per category.

Time liners: Within the limits of the mission definition (down link pattern, processor operations only supervised during normal working time), whether a user category needs data delivery as quickly as possible (approximately 3 days after sensing or better) or not:

y : yes n : no

Levels: Which levels of data products are assumed to be of interest. Note that level 0 is not normally distributed but only accessible for technical investigations.

Levels (0), 1, 2, 3, 4 (as per SRD definitions)

Volume: Data volume (in relation to the overall produced data volume):

H : high (i.e. all data products)

M : medium (e.g. 30-50 % sample set)

L : low (e.g. 5-10% sample set)

VL : very low

Frequency: Frequency at which data products have to be delivered:

C : continuously (i.e. at the production rate); and standing order, i.e. all data set especially after major reprocessing for climate studies

F : frequently (e.g. at regular intervals of 1 week)

IF : infrequently: basically only “one off” data sets in most cases

Media: Anticipated preference for the data delivery medium (obviously connected to volume and frequency requirements):

On-line : standing lines (TBC)

DVD : batch delivery on DVD medium

IN : Internet

Catalogue / Browse: Need for user support through catalogue and browse facility

y : yes n : no

Need for reprocessing: Is the user interested to get updates of the data products if “better” products become available through reprocessing (i.e. because of improved algorithms, with restituted auxiliary data, ...)

y : yes n : no

Timeliness of repr.: After reprocessing of the data set is initiated, what is the timeliness requirement:

y : yes (i.e. as soon as available) n : no

Volume of reprocessed data: Volume of reprocessed data needed by the users:

H : high (basically all)

M : medium (representative samples set for verification of quality)

N : none

4. SYNOPTIC TABLE OF USER MODEL

Category	No. of Users	Timelin ess	Leve ls	Volu me	Fre que	Med ium	Catal ./	Nee d	Tim elin	Vol ume	Remarks
Investigative	30-60	Y	all	M*	C	On-line	N	Y	(Y)	M*	* For many prposes, sample data (10%) is sufficient
Operational	5-10	Y	1,2,3	H	C	On-line	N	Y**	N	H	** at the beginning, N when stabilised
Comprehen-sive	10	N	3	H	C	DVD	N	Y	N	H	
Regional	5-20	N	2, 3	M	F	DVD / IN	N?	N	N	N	
Occasional	50	N	2, 3	L	IF	IN	Y	N	N	N	