DOCUMENT

ORBCNT - Swarm Orbit Counter Specifications

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APPROVAL

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CHANGE LOG

Reason for change	Issue	Revision	Date
First issue	1	0	29/06/2017
Change of the repository path on the dissemination server	1	1	29/06/2017
Second revision	1	2	11/10/2017

CHANGE RECORD

Issue 1	Revision 1		
Reason for change	**Date**	**Pages**	**Paragraph(s)**
First issue	29/06/2017	All	All

Issue 1	Revision 1		
Reason for change	**Date**	**Pages**	**Paragraph(s)**
Paragraph 2.2 ("Repository") removed. This information is included in the data access user manuals	29/06/2017	5	2.2

Issue 1	Revision 2		
Reason for change	**Date**	**Pages**	**Paragraph(s)**
The file is not considered anymore an Auxiliary.	11/10/2017	4, 5	1, 2

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CONTENTS

1 INTRODUCTION

This document is intended to describe the Swarm Level 1b data file containing the Swarm orbit numbers.

The Swarm Orbit Counter file is referred with a dedicated product type (ORBxCNT), and it provides precise Swarm orbit number information to the scientific user community. The start of an orbit is defined as the Equator crossing of the ascending node (i.e. the northbound Equator crossing).

2 SWARM ORBIT COUNTER

2.1 Product definition

The Swarm Level 1b Orbit Counter file is an ASCII file with a one-line header. The header line reads (character positions given in line below header line):

```
%orbit      MJD2000        date         UT       phi_AN   Source
123456789012345678901234567890123456789012345678901234567890123456789012
```

The orbit information lines are formatted with one line per orbit as follows:

Name	Description	Type	Format	Units	Range
orbit	Orbit number	integer	%6d	-	$1 - 10^6$
MJD2000	Orbit start date/time in MJD2000	real	%19.11f	MJD2000	
date	Orbit start date	string	YYYY-MM-DD		
UT	Orbit start time	string	HH:MM:SS.sss	UTC	
phi_AN	Longitude of orbit starts	real	%10.3f	Degrees	$\pm 180°$
Source	Source of orbit number information Values: 0. Best quality 1. Reduced quality	integer	%6d		0-1

The Swarm Orbit Counter contains the orbit number, the time of start of the orbit (both in human readable form and in MJD2000), the longitude of the Equator crossing at the start of the orbit, and a source indicator. Each file covers the entire time-span from Mission start until the current day.

Filename of the Swarm Orbit Counter follows the below reported naming convention:

SW_CCCC_ AUXxORBCNT_yyyymmddThhmmss_YYYYMMDDTHHMMSS_vvvv.TXT

Since the file is incremental and covering the entire time-span from Mission start until the current day, only the latest generated file shall be available to users.

'yyyymmddThhmmss' will be fixed and matching the beginning of mission while 'YYYYMMDDTHHMMSS' will be representing the date of latest orbit data file present in the Swarm Orbit Counter.

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