1 DORIS and Orbit Products

1.1 Doris and Orbit Products t Summary Table

DORIS & Orbits Products	Processing Level	Product ID Size Mbytes / COVERAGE
Level 0	Doris Navigator	DOR_NAV_0P 24 KByte per orbit
Level 0	Doris Doppler Level 0	DOR_DOP_0P 120 KByte per orbit
Level 1B	Doris Doppler Level 1b (generated by CTDP)	DOR_DOP_1P
Level 2	Doris Preliminary Orbit State Vector (computed by CTDP)	DOR_POR_2P
Level 2	Doris Precise Orbit (computed by CTDP)	DOR_VOR_2P
Auxiliary Data	Predicted Orbit State Vector (computed by ESOC FOS)	AUX_FPO_AX
Auxiliary Data	Restituted Orbit (computed by ESOC FOS)	AUX_FRO_AX

1.2   DORIS and Orbit Product Spreadsheets

PRODUCT ID	DOR_NAV_0P
NAME	Doris Navigator level 0
DESCRIPTION	DORIS Navigator Product generated after frame synchronisation, demultiplexing and formatted into a file containing annotated DORIS Navigator Instrument Source Packet (1292 bytes). The DORIS Navigator Instrument Source Packet contains 39 or 40 DORIS Navigator Bulletin, per Instrument Source Packet. The DORIS Navigator Bulletin is 16 words (16 bit per word) containing the DORIS computed Orbit state vector.
COVERAGE	one orbit unconsolidated - one or more orbit when consolidated One Navigator Instrument Source Packet (1292 bytes) each 320 second
TEMPORAL SAMPLING	na
SIZE	24 Kbytes per Orbit
GEOMETRIC RESOLUTION	Navigator Bulletin accuracy: Position: 10m RMS radial, along and across track Velocity: 1cm/sec RMS radial, along and across track
RADIOMETRIC ACCURACY	na
DATASET	MPH SPH one MDSR (with 1 annotated Instrument Source Packet per MDSR)
AUXILIARY DATA	Predicted Orbit State Vector from ESOC FOS Satellite to UTC Time conversion table
NOTES	This product is used internally by the PDS Near Real Time Processing chain as an input to the Orbit propagator software (GENOPS) The consolidated product is available at the LRAC after 2 weeks after sensing.

PRODUCT ID	DOR_DOP_0P
NAME	Doris Doppler Level 0
DESCRIPTION	DORIS Doppler Product generated after frame synchronisation, demultiplexing and formatted into a file containing annotated DORIS Doppler Instrument Source Packet (1292 byte).
COVERAGE	one orbit unconsolidated - one or more orbit when consolidated One Doppler Instrument Source Packet (1292 byte) each 64 second
GEOMETRIC RESOLUTION	tbd
SIZE	120 Kbytes per orbit
RADIOMETRIC RESOLUTION	tbd
RADIOMETRIC ACCURACY	tbd
DATASET	MPH SPH MDS with 1 annotated ISP per MDSR
AUXILIARY DATA	Predicted Orbit State Vector from ESOC FOS in the MPH Satellite to UTC Time conversion table in the MPH
NOTES	This product is systematically transferred to the F-PAC CTDP to generate the level1b, the Preliminary and Precise orbit products. The consolidated product is available at the LRAC after 2 weeks after sensing.

PRODUCT ID	DOR_DOP_1b
NAME	Doris Doppler level 1b
DESCRIPTION	TBD CTDP
COVERAGE	TBD CTDP
THROUGHPUT	TBD CTDP
SPATIAL SAMPLING	TBD CTDP
SIZE	TBD CTDP
GEOMETRIC RESOLUTION	TBD CTDP
RADIOMETRIC ACCURACY	TBD CTDP
DATASET	TBD CTDP
ANCILLIARY DATA	TBD CTDP
AUXILIARY DATA	TBD CTDP
NOTES	This product is generated by the Centre de Traitement Doris Poseidon (CTDP), 3 days after sensing (TBC), and stored into the F-PAC archive.

PRODUCT ID	DOR_POR_2P
NAME DESCRIPTION	DORIS Preliminary orbit This product is created 3 days after reception of the Doppler level 0 product at the CTDP. The product is stored into the F-PAC archive and appears in the PDS Inventory. The product contains 1 state vector per record, and 1 record per minute along the orbit(s).
COVERAGE TEMPORAL SAMPLING	one orbit per product, with 120 min overlap between products 1 orbit state vector per minute along the orbit(s)
SIZE GEOMETRIC RESOLUTION	tbd Orbit state vector accuracy: Position: 20cm RMS radial, 40 cm RMS along and 40cm RMS across track
RADIOMETRIC ACCURACY	
DATASET	MPH SPH one MDS with 1 annotated orbit state vector per MDSR
AUXILIARY DATA	tbd
NOTES	This product is used internally by the PDS Processing chain, off-line, as an input for orbit propagation software (INTERPOL) This product has the same file format as the FOS Predicted Orbit State Vector, FOS Restituted Orbit State Vector and the DORIS Precise Product.

PRODUCT ID	DOR_VOR_2P
NAME DESCRIPTION	DORIS Precise orbit This product is created 4 to 5 weeks after reception of the Doppler level 0 product at the CTDP. The product is stored into the F-PAC archive and appears in the PDS Inventory. The product contains 1 state vector per record, and 1 record per minute along the orbit(s).
COVERAGE THROUGHPUT	one orbit per product, with 120 min overlap between products tbd
TEMPORAL SAMPLING	1 orbit state vector per minute along the orbit(s)
SIZE GEOMETRIC RESOLUTION	tbd Orbit State Vector Accuracy Position: 10 cm RMS radial, 30 cm RMS along and 30 cm RMS across track
RADIOMETRIC ACCURACY	
DATASET	MPH SPH one MDS with 1 annotated orbit state vector per MDSR
AUXILIARY DATA	tbd
NOTES	This product is used internally by the PDS Processing chain, off-line, as an input for orbit propagation software (INTERPOL) This product has the same file format as the FOS Predicted Orbit State Vector, FOS Restituted Orbit State Vector and the DORIS Preliminary Product.

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Doc. No:**PO-TN-ESA-GS-00701**
Issue   :**1 . 0**
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PRODUCT ID	AUX_FPO_AX
NAME DESCRIPTION	ESOC Flight Operation Segment Envisat Predicted Orbit State Vector This product contains the Envisat Predicted Orbit State Vector computed by the ESOC Flight Dynamic group, used by the PDS Processing chain in near real time for geolocation purposes.
COVERAGE	6 days of orbit state vector (i.e about 86 state vectors) Generated by ESOC FOS once per day for the next 6 days.
TEMPORAL SAMPLING	1 orbit state vector per orbit close to the ANX
SIZE GEOMETRIC RESOLUTION	tbd Orbit State Vector Accuracy (worst case of Solar activity): Position: <25m (3sigma) radial, < 900m (3sigma) along and <15m (3sigma) across track Velocity: <955mm/sec (3sigma) radial, < 29 mm/sec (3sigma) along and <16 mm/sec (3sigma) across track
RADIOMETRIC ACCURACY	na
DATASET	MPH SPH one MDS with 1 annotated orbit state vector per MDSR
AUXILIARY DATA	none
NOTES	This product is used internally by the PDS Processing chain, in near real time, as an input for orbit propagation software (GENOPS) This product has the same file format as the FOS Restituted Orbit State Vector, The DORIS Preliminary and the DORIS Precise Product. This product will be permanently archived at the PDS LRAC

PRODUCT ID	AUX_FRO_AX
NAME DESCRIPTION	ESOC Flight Operation Segment Envisat Restituted Orbit State Vector This product contains the Envisat Predicted Orbit State Vector computed by the ESOC Flight Dynamic group, used by the PDS Processing chain in off line mode, for geolocation purposes.
COVERAGE	one or more orbit Generated by ESOC FOS 3 days after the event.
TEMPORAL SAMPLING	1 orbit state vector per minute along the orbit(s)
SIZE GEOMETRIC RESOLUTION	tbd Orbit State Vector Accuracy: Position: <25m (3sigma) radial, < 60 m (3sigma) along and <15m (3sigma) across track Velocity: <40 mm/sec (3sigma) radial, < 27 mm/sec (3sigma) along and <14 mm/sec (3sigma) across track
RADIOMETRIC ACCURACY	na
DATASET	MPH SPH one MDS with 1 annotated orbit state vector per MDSR
AUXILIARY DATA	none
NOTES	This product is used internally by the PDS Processing chain, off-line, as an input for orbit propagation software (INTERPOL) This product has the same file format as FOS Predicted Orbit State Vector, The DORIS Preliminary and the DORIS Precise Product. This product will be permanently archived at the PDS LRAC