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IMAGING INSTRUMENTS

PRODUCT EQUIVALENCE

for

ERS/ENVISAT AO/Cat-1 users

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CHANGE RECORD

	Location	Description	Reason
1.2	Annex B	Update of P.E. for MERIS FR Update of MERIS RR P.E.	Insertion of MERIS FRS
1.3		Insertion of ERS PE Removal of MERIS FR mini-scene	ERS RAW distributed as floating pass

1 THE CONCEPT OF PRODUCT EQUIVALENCE

Within the framework of the Category-1 use scheme, the Principal Investigator (PI) is entitled to a certain quota of products free of any charge or at cost of reproduction, allowing him to perform the study described in his AO/Cat-1 proposal. However, the range of products provided by the ERS/ENVISAT imaging instruments (SAR, ASAR, MERIS, AATSR) is very large, with various geographical size and processing levels.

In order to both simplify the AO/Cat-1 product quota system and to provide PI's with a high flexibility in ordering the products, ESA has introduced the concept of product equivalence. According to this concept, each project requesting SAR, ASAR or MERIS products receives a quota expressed in ASAR or MERIS product equivalents. Whenever the user needs to be able to order future acquisitions, a specific quota will be allocated to the project for future planning requests.

Within the assigned project quota, the PI has the possibility to modify his product requirements at any stage of the progress of his project, using the tables of product equivalences available in the Annexes..

The same approach is extended to AATSR products (Annex C).

2 HOW TO CALCULATE THE PRODUCT EQUIVALENCE

Annexes A to D provide the product equivalence respectively for Envisat ASAR, MERIS, AATSR and ERS SAR.

Example of utilisation of the product equivalence tables:

In the following example, we assume that the AO project has the following product quotas:

Project ENVISAT xxxx
Quota ASAR product equivalents: 30
Quota MERIS product equivalents: 20

With the quota of 30 ASAR product equivalents, the PI could request:

Example 1 (ASAR)	ASAR Product Equivalence (Annex A)
10 Precision Image scenes from IM mode (ASA_IMP_1P)	$10 \times 1 = 10$
40 Medium Resolution scenes from AP mode (ASA_APM_1P)	$40 \times 0.25 = 10$
100 scenes from GM mode (ASA_GM1_1P)	$100 \times 0.1 = 10$
Total	30

At anytime during the project, and within the remaining ASAR quota, the PI can modify the combination of ASAR products still to be ordered.

With the quota of 20 MERIS product equivalents, the PI could request:

Example 2 (MERIS)	MERIS Product Equivalence (Annex B)
100 RR Level 1b scenes (MER_RR_1P)	$100 \times 0.1 = 10$
5 FR full swath Level 2 scenes (MER_FRS_2P)	$5 \times 1 = 5$
10 FR Level 2 imagettes, i.e. quarter scene (MER_FR_2P)	$10 \times 0.5 = 5$
Total	20

At anytime during the AO project, and within the remaining MERIS quota, the PI can modify the combination of MERIS products still to be ordered.

With the quota of 30 ASAR product equivalents, the PI cannot request MERIS products, and vice-versa.

Annex A: ASAR Product Equivalence

ASAR	ASAR product equivalence	Product ID	Max. Size (MB)	Temporal/spatial coverage
Precision Images	1	ASA_IMP_1P	134	1 scene (100 km length)
		ASA_APP_1P	268	
Single Look Complex	1	ASA_IMS_1P	740	1 scene (100 km length)
		ASA_APS_1P	1480	
Geocoded Images	1	ASA_IMG_1P	281	1 scene (100 km length)
		ASA_APG_1P	562	
Medium Resolution Images	0.25 Free on server	ASA_IMM_1P	4	1 scene (100 km length)
		ASA_APM_1P	4 or 8	
Wide Swath Medium Resolution Image	1 Free on server	ASA_WSM_1P	59	1 scene (400 km length)
High Rate Level 0 [note: additional s/w are needed to process L0]	1	ASA_IM__0P	186	1 scene (100 km length)
		ASA_APx_0P	186	
		ASA_WS__0P	709	1 scene (400 km length)
New acquisition	1			Any length
Global Monitoring Image	0.1 Free on server	ASA_GM1_1P	1.5	1 scene (400 km length)
Wave Products	0.5	ASA_WVI_1P	2400	1 orbit
	Free on server	ASA_WVS_1P	2	
		ASA_WVW_2P	2	
Browse Images	Free on server			1 segment

Annex B: MERIS Product Equivalence

MERIS	MERIS product equivalence	Product ID	Max. Size (MB)	Temporal/spatial coverage
Full Resolution Level 1B	0.50	MER_FR__1P	156	1/4 scene (650 km length)
	1 Free on server	MER_FRS_1P	500	Full swath (1470 km)
Full Resolution Level 2	0.50	MER_FR__2P	186	1/4 scene (650 km length)
	1 Free on server	MER_FRS_2P	500	Full swath (1470 km)
New FR acquisition	1			Any length (Min. 60 sec)
Reduced Resolution Level 1B	Free on server	MER_RR__1P	41	Any length
Reduced Resolution Level 2	Free on server	MER_RR__2P	47	Any length
Reduced Resolution Level 2 Vegetation indices	Free on server	MER_RRV__2P	87	1 orbit
Reduced Resolution Level 2 Cloud thickness & water vapour (Non meteo users)	Free on server	MER_RRC__2P	104	1 orbit
Reduced Resolution Level 2 Cloud thickness & water vapour (meteo users)	Free on server	MER_LRC__2P	9	1 orbit
Browse Image	Free on server			1 orbit

Annex C: AATSR Product Equivalence

AATSR	AATSR product equivalence	Product ID	Max. Size (MB)	Temporal/spatial coverage
Gridded Brightness Temperature and Reflectance	1 Free on server	ATS_TOA_1P	10 (764/orbit)	1 scene (512 km length)
Geophysical Product for Ocean, Land and Atmosphere	1 Free on server	ATS_NR__2P	2 (133/orbit)	1 scene (512 km length)
Spatially Averaged Sea/Land Geophysical Product (AST)	0.2 Free on server	ATS_AR__2P	62	1 orbit
Spatially Averaged Sea Surface Temperature (AST) for Meteo Users	Free on server	ATS_MET_2P	5	1 orbit
Browse Image	Free on server	ATS_		1 orbit

Annex D: ERS SAR Product Equivalence

SAR	SAR product equivalence	Product ID	Max. Size (MB)	Temporal/spatial coverage
Level 0	1	SAR_IM_OP		1 scene (100 km length)
Level 1 (PRI, SLC, IMG)	1	SAR_IMP_1P SAR_IMS_1P SAR_IMG_1P		1 scene (100 km length)
Medium Resolution Level 1	0.25 Free on server	SAR_IMM_1P		1 segment

