

#### COMMISSION EUROPÉENNE DIRECTION GENERALE ENTREPRISES et INDUSTRIE

Industrie aérospatiale, maritime, de sécurité et de défense

# GMES DATA ACCESS SPECIFICATIONS OF THE EARTH OBSERVATION NEEDS OVER THE PERIOD 2011-2013

## APPROVAL

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GMES Data Access Specifications of the Earth observation needs over the period 2011-2013			
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Modification of the requirements concerning Médium resolution Composites (frequency, coverage, synchronisation with Core_001) as requested by the GMES Land Service	1	8	30/05/2011
Modification of the acquisition Windows for CoreOOl and Core_003 as requested by the Land service	1	9	13/03/2013

## CHANGE RECORD

Issue 1	Revision 9		
Reason for change	Date	Pages	Paragraph
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projections)		13	REQ 5.2.1-1 modified
		14	REQ 5.2.1-5 deleted REQ 5.2.1- 6 modified
		15	REQ 5.2.1-8 modified
		Annex 5 and 6	New annex
Update of the list of FP7 projects		7	2.3
Modification of the detailed requirement of Core_003 (acquisition time window, national projections)		5	2.1 (2) (b)
(woquission time ii, nime iii projettiene)		15	REQ 5.2.3-1 modified
		16	REQ 5.2.3-9 and REQ 5.2.3-10 added
Modification of the overall quota for additional data sets		24	REQ 5.3.6-1 modified

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#### 1. Introduction

#### 1.1. Background

For an initial period of three years, data access management has been funded through a data access grant between the EC and ESA. Current Earth Observation data is provided to GMES Services through this approach.

As from October 2010 the next step of the EC-ESA cooperation, the delegation agreement, ensures continuity of the data procurement. This new phase intends to widen the scope of the data access to a broader community.

So far the current data access grant approach was dedicated to the specific needs of the FP7 projects, based on a collection of very detailed requirements which was a very long process. In addition the original licenses were limited to the FP7 projects and the re-use of the acquired datasets by other users in the fulfilment of EU Public Tasks was limited due to budget constraints. On this basis, a change of paradigm is required moving to a new concept of Data Warehouse offering two types of datasets common to a broader user community. This is based on two types of data: (i) a fixed part called 'CORE datasets' which are typically well defined large datasets covering the needs of FP7 projects and other users and (ii) a flexible part called 'ADDITIONAL' datasets. This approach should be flexible enough to accommodate further additional requirements or specific requirements which are not covered by the CORE datasets and not known in advance.

#### 1.2. Scope and objective

This document is the "Data Warehouse requirements" referred to in the EC/ESA delegation agreement on the Implementation of the Space Component of GMES (last amended on 15/06/2011).

This document represents the user requirements for Earth Observation data for the period covered by the EC/ESA delegation agreement.

The approach suggested in this document aims at widening, as far as possible, user access along three major principles:

- (1) extension of licences to meet the needs of a wider range of user activities beyond existing FP7 projects for the datasets procured under the Data Access Grant;
- (2) depending on the type of service, predefinition of <u>CORE datasets</u> with fixed specifications that represent the common needs of a broad user community;
- (3) Bulk agreement for ADDITIONAL datasets with flexible specifications, e.g. geographical area, under the establishment of predefined quotas.

The requirements take into account the needs of users at large, encompassing the FP7 projects and other GMES connected activities.

The Commission will define in detail the CORE Datasets (cf. § 5.2). By definition, the ADDITIONAL datasets are flexible and are not known in advance, therefore technical details cannot be provided at this stage, but only general requirements (cf. § 5.3) and principles on the quota management mechanism (§5.3.6). The FP7 needs should be reiterated together with the ADDITIONAL datasets.

The approach for the procurement of the two types of datasets will be different: CORE datasets can be procured on the basis of pre-defined specifications, ADDITIONAL datasets through a quota mechanism and bulk agreements with data providers for the provision of data within a financial envelope (§5.3).

The document is structured as follows:

- Section 1 describes the scope and objectives
- Section 2 defines the overall requirements
- Section 3 defines the user categories and the rights of use of the users
- Section 4 defines the services to be offered by the usage types (services)
- Section 5 details the datasets specifications to be procured under the delegation agreement

#### 1.3. Applicable and reference documents

- 1.3.1. Applicable documents
- AD[1] Project Implementation Plan
- 1.3.2. Reference documents
- RD[1] Data Access Portfolio Requirement Document, GMES-PMAN-EOPG-RD-08-0002, issue 1.1, 15/03/2009
- RD[2] Data Access Portfolio Document, GMES-PMAN-EOPG-TN-07-0003, Issue 1.0, 09/09/2009

#### 2. OVERALL REQUIREMENTS

#### 2.1. CORE datasets

The requirements for new activities to be considered under the GMES Initial Operations are not fully known in advance. To cope with this situation, and to propose a more robust and cost-effective access mechanism, it is proposed to change the approach with the predefinition of CORE datasets with fixed specifications which will be offered to a broad range of users and activities.

Those CORE dataset specifications should take account of the needs of (i) existing FP7 projects until their termination, (ii) the operational services to be initiated under GIO and (iii) other activities within FP7 to be launched in the continuation of current FP7 projects. It is also enlarged to take account of common needs of user communities:

- (1) Fulfilment of the data needs for establishing an emergency service over the period 01/2012 to 30/04/2014. As a starting point, the data needs can be considered as equivalent to the ones requested by SAFER. The rapid mapping is requiring specific satellite tasking and therefore will be covered under 'ADDITIONAL datasets with predefined quotas'. The dataset specifications are detailed under § 5.3.
- (2) Fulfilment of the data needs for establishing the land monitoring services. It should cover:
  - (a) pan-EU High Resolution (HR) image coverage for the requirements of land cover/land cover change activities (Corine: CLC and CLCC), and 5 High Resolution Layers (HRLs) on land cover characteristics (imperviousness, forestry, agriculture (grasslands), permanent wetlands and small water-bodies (cf. details in § 5.2.1). It shall include access to archives of previous coverages (§ 5.2.2).
  - (b) One partial or full European Very High Resolution (VHR) coverage over EU matching the requirements of applications at EU level (Urban Atlas, Land cover on riparian zones for the purpose of biodiversity monitoring, monitoring of coastal areas, risk areas, protected areas (Natura 2000 sites), Land Parcel Identification...) and at national level (§ 5.2.3).
  - (c) For Dynamic Land monitoring: daily Low Resolution (LR) and Medium Resolution (MR) full globe coverage for the production of biogeophysical parameters in the global component of GIO land (similar to the BIOPAR service component from Geoland2) (cf. § 5.2.4 and 5.2.5).
  - (d) For seasonal vegetation monitoring: monthly to 15-days composites of Medium Resolution (MR) full EU coverage during the vegetation period March-October (extension of SATCHMO) (cf. § 5.2.6).

- (e) Outside Europe (Africa): one full sub-Saharan HR coverage. Due to the possible decentralised approach for service implementation, the licensing scheme shall include full access to EU institutions and mandated organisations in the Member States as a baseline (cf. § 5.2.7).
- (3) Fulfilment of the data needs for establishing the marine and atmosphere composition monitoring services through the current MACC and MyOcean projects and their follow-on. The data needs are based on MACC and MyOcean project requirements.(cf. § 5.2.8 and 5.2.9).

#### 2.2. ADDITIONAL datasets with predefined quotas

ADDITIONAL datasets are needed to complement the establishment of land and emergency services, marine and atmosphere composition services, and the security service, as some data characteristics are not known in advance (e.g. satellite tasking for rapid mapping or security applications).

As for the CORE datasets, these ADDITIONAL datasets are expected to fulfil the needs of (i) existing FP7 projects until their termination not covered by the CORE datasets, (ii) the operational services to be initiated under GIO over the post 2010 period and (iii) other activities within FP7 to be launched in the continuation of current FP7 projects. In addition other GMES-related activities (EEA, EMSA, EUSC, FRONTEX...) should be considered as well.

In the absence of specific requirements, it is assumed that the new FP7 projects and GIO activities will use as a priority the aforementioned 'CORE' datasets which will be complemented by predefined quotas to fulfil their specific needs.

Some assumptions have been made for the specification of requirements:

- The envelope estimates should be made on the basis of a combination of statistics and requirements from current FP7 projects, previous projects and other related activities;
- The needs for GMES services in support to crisis management (SAFER, G-MOSAIC and further activities) are considered with the highest priority;
- In addition some specific requirements from EU agencies (EMSA, EUSC, FRONTEX) which could be covered by GMES have been identified;
- Further additional requirements to cover specific 'non-crisis' activities will be considered with medium priority (e.g. specific requirements for GIO Land service not covered by the CORE datasets, or for Downstream FP7 projects);

• The approach with this document is to cover the majority of requirements with CORE and ADDITIONAL datasets; however this might not satisfy 100% of requirements, which should be covered by the projects/services themselves;

## 2.3. FP7 projects

The Delegation Agreement will support the extension or the acquisition of new licences for the needs of the current FP7 projects and those under negotiation beyond 2010. This includes:

- (a) SAFER, MyOcean, G-Mosaic and MACC over the period 10/2010 to 12/2011; MyOcean 2 and MACC II until 30/04/2014.
- (b) DORIS, AQUAMAR, Downstream projects GEO-BIO SOS, PICTURES, SubCoast, EVOSS, COBIOS, CRYOLAND, DOLPHIN, EUFODOS, FRESHMON, GLOWASIS, ISAC. MALAREO, MS.MONINA, MYWATER, NEREIDS, RECOVER, REDDAF, REDD-FLAME, REDDINESS, SEAU, SIRIUS, WATPLAN, G-NEXT, G-SEXTANT, IMAGINES, INCREO, LAMPRE, LOBOS, PREFER, SAGRES, SENSUM.

### 2.4. Licensing conditions

The overall principle should be to have a broad access to CORE datasets, whereas access to ADDITIONAL data managed through quotas could be more limited.

Regarding the pan-EU and EU CORE datasets (wall-to-wall HR pan-EU coverage, VHR EU coverages, monthly 15-days HR composites) and the Global MR and LR coverages, the licences should include unrestricted access to the Primary Products and the Altered Products and Derivative Works<sup>1</sup> for EU institutions [EU\_Inst], Public Authorities [Publ\_Auth] and FP7 projects (service providers) [FP7\_Proj]. This should be the case as well for the full sub-Saharan HR coverage, which also includes access for International organisations and NGOs involved in land monitoring activities in these African countries.

Regarding the ADDITIONAL dataset for emergency service activities included in EU Public Tasks, the licences should include unrestricted access to the Primary Products and the Altered Products for EU institutions [EU\_Inst] and FP7 projects (service providers) [FP7\_Proj].

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<sup>&</sup>lt;sup>1</sup>- it is considered that there is unrestricted access to derivative works in all further discussion in the document

#### 3. USER CATEGORIES AND USAGE RIGHTS

Five User types are defined under the DA, as indicated below. The sections below also define the usage allowed by each user category. These user categories are referred to in the specification by their abbreviation in square brackets.

#### 3.1. Participants to a project financed under FP7 [FP7\_Proj]

This includes any natural or legal person officially registered as participant of a project funded under the 7<sup>th</sup> FP Space theme.

Participants to a project financed under FP7 may use the Primary Products and Altered Products for activities within the project.

#### 3.2. Institutions and bodies of the EU [EU\_Inst]

It includes:

- (1) The European Institutions set up under the EU Treaties;
- (2) Agencies set up under the EU Treaties.

The institutions and bodies of the EU, as well as their contractors may Use the Primary Product and Altered Products for activities whose purpose is within the EU Public tasks (development, implementation and monitoring of policies and related activities as defined by the EU Treaties and subsequent EU legislation).

## **3.3.** Public authority [Public\_Auth]:

Public authorities include:

- (1) Any government or other public administration of States participating in FP7 or participating in the GMES Space Component, including public advisory bodies, at national, regional or local level. This is without prejudice to the right of the Commission to establish the priority list of the beneficiaries who are entitled to receive the data;
- (2) any natural or legal person performing public administrative functions under national law, including specific duties, activities or services in relation to an EU policy;
- (3) any natural or legal person having public responsibilities or functions, or providing public services relating to an EU policy under the control of a body or person falling within (1) or (2), such as a contractor of a public authority;
- (4) Any research and academic organisation.

Public authorities as well as their contractors may Use the Primary Product and Altered Products for activities whose purpose is within the EU Public tasks.

#### 3.4. International Organisations and NGOs [INT\_ORG\_NGO]

These bodies are defined as:

- (1) Any International Governmental Organisation created by an international treaty which can be looked up in the UN online database of treaties. Specialised agencies of the UN are included;
- (2) Any International Non Governmental Organisation specialised in humanitarian or development activities.

International Organisations, Non-governmental Organisation as well as their contractors may Use the Primary Product and Altered Products for activities whose purpose is within the EU Public tasks.

#### 3.5. Public [Public]

Any natural or legal person.

Any natural or legal person may Use the Primary Product and Altered Products derived from it for non-commercial activities.

## 4. USAGE TYPES (SERVICES), OR USE DEFINITION

The usage types have been defined adhering to the INSPIRE nomenclature. For each dataset the usage type per user category should be specified.

#### 4.1. DISCOVERY Service:

Spatial data services making it possible to search for spatial datasets and services on the basis of the content of the corresponding metadata and to display the content of the metadata.

All users can access such services.

#### 4.2. VIEW Service

The VIEW service shall make possible, as a minimum, to display, navigate, zoom in/out, pan, or overlay viewable spatial data sets and to display legend information and any relevant content of metadata

#### 4.3. DOWNLOAD Service:

The DOWNLOAD service shall allow the beneficiary:

- (1) to make an unlimited number of copies of the Primary Product as needed (archiving and backup purposes included);
- (2) to install on as many individual computers as needed, including internal computer network;
- (3) to alter or modify the Primary Product by invoking a computer application to produce Altered Products and Derivative work;

- (4) to post Metadata of the Primary Product or its Altered Products on an internet website with the display of the following credit: "includes material (c) Mission name (year of acquisition), all rights reserved";
- (5) to make hard copies or to display on an internet web site a Representation of any extract of the Primary Product or its Altered Products at any resolution, with the display of the following credit: "includes material (c) Mission name (year of acquisition), all rights reserved"; the data received by client applications, through above internet posting, should be such that it is not possible to use/generate back the Primary or Altered Products;
- (6) to Use the Primary Product or its Altered Products for internal or external demonstration purposes; and
- (7) to retain all Intellectual Property Rights associated with any Derivative work developed on the basis of the Product.

#### 5. DATASETS REQUIREMENTS

This section provides the definition of datasets. The objective of this section is to provide the user requirements, identifying **the criteria**, **which will have a significant impact on the cost of data**. This should give sufficient details to derive technical specification as input for the procurement.

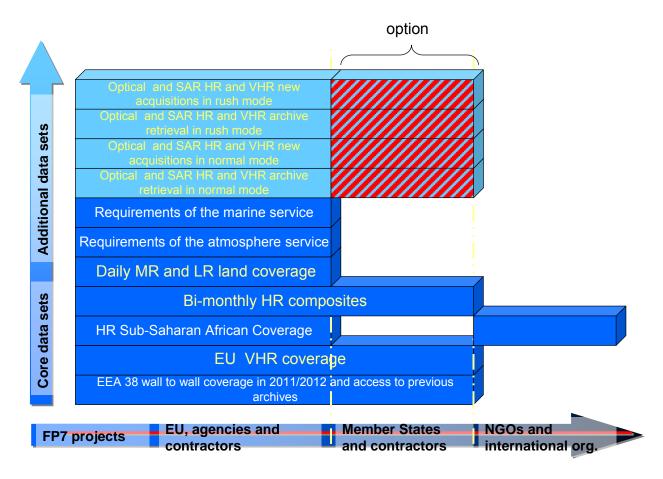


Figure 1: licensing scheme and data needs synthesis

#### 5.1. Data characteristics, definitions

Each dataset detailed in Annexes is specified according to a specific template. The template includes the following information:

- (1) <u>ID #:</u> Specifies the ID of the dataset, according to project acronym sequential numbering.
- (2) <u>Title Dataset:</u> Specifies the title of the dataset.
- (3) <u>Description Dataset</u>: Describes the content of the dataset and specifies the main application(s) served by the dataset (e.g. soil sealing, EEA 38 land coverage, etc).
- (4) <u>Usage:</u> Specifies usage (services) allowed for each user category. User categories and usage (services) are defined in section 3.
- (5) **Priority:** Specifies the priority of the dataset. Possible values are Low, Medium or High. Note: this is a general marking of the datasets versus other datasets.
- (6) Area of interest & Estimated surface: Specifies the area of interest (e.g. EEA 38, EU-27 plus 3 the Candidate Countries (Turkey, Croatia, and the Former Yugoslav Republic of Macedonia), Africa, Romania, etc.) and the estimated area which needs to be covered (e.g. 5 M sq km, etc.). Whenever possible, this information will be accompanied by a shapefile. This information will be complemented by the following sub-elements:
  - (a) Area name: Well known name e.g. EU27 plus 3, EEA38, etc.
  - (b) Shapefile Name: If shapefile exists.
  - (c) Km2: Dataset size in km2.
  - (d) BOX: Delimited by N/S E/W coordinates.
  - (e) Contiguous: Yes if area is one block.
  - (f) Non-Contiguous: Approximate size of smallest contiguous zone over the AOI, and number of different AOIs.
  - (g) Non contiguous grid: statistically sample grid grid size.
- (7) Optical characteristics: Spectral Bands placed in order as appears on electromagnetic spectrum, and include red-edge, max. elevation angle, Cloud Cover, composite characteristic. This information will distinguish "mandatory bands to execute the service" from "nice-to-have bands". A field for entering MANDATORY is included for the different bands.

- (8) Radar characteristics: Specifies the radar bands of the sensor(s) that makes the dataset. It includes the frequency band (e.g. X or C), the polarisation (Single, Dual, or Quad, stating combination), and whether INSAR is required.
- (9) **Resolution spatial:** Specifies the resolution of the sensor(s) that makes the dataset. Possible values are:
  - (a) VHR1:  $\leq 1 \text{ m}$
  - (b) VHR2: >1m <=4m
  - (c) HR1: >4m <=10m
  - (d) HR2: >10m <=30m
  - (e) MR1: >30m <=100m
  - (f) MR2: >100m-<=300m
  - (g) LR: >300m
- (10) <u>Updating frequency:</u> Specifies the revisit mapping over the area of interest and constraints (if any). For example, the dataset shall be acquired every year during the vegetation season (April –Sept).
- (11) <u>Accuracy product:</u> Includes the radiometric resolution (i.e. bits/pixel required, saturation %) and the geometric accuracy (max. allowed absolute 1-D RMSE threshold in meter).
- (12) <u>Acquisition programming:</u> Specifies the acquisition programming for making the dataset. Possible values are Archive, Standard programming, Priority programming.
- (13) <u>Lead\_time:</u> Specifies the time before programming, with reference to the dataset.
- (14) <u>Production time:</u> Specifies the delay for delivery of data after acquisition. Possible values are:
  - (a) *NRT15min:* Newly acquired data are made available within 15 min from sensing
  - (b) *NRT30min:* Newly acquired data are made available within 30 min from sensing
  - (c) **NRT1h:** Newly acquired data are made available within 1 hour from sensing.
  - (d) **NRT3h:** Newly acquired data are made available within 3 hours from sensing.
  - (e) *Fast24h:* Newly acquired data are made available within 24 hours from sensing.

- (f) *Fast48h:* Newly acquired data are made available within 48 hours from sensing.
- (g) Normal: Newly acquired data are made available less than a week after sensing, with a target of 48-72h hours. This category typically includes fresh data systematically refined off-line with consolidated auxiliary data. Timeliness for refinement depends on the availability of auxiliary data and is to be defined on a Dataset basis. Archive Normal is placed in this category even though data shall be made available within 24 hours after data request.
- (h) *Cumulative:* For cumulative datasets, products are made available only at completion of the pre-agreed coverage. This delivery mode is used typically for Land Services. Data are made available by default 2 months after closure of acquisition windows unless otherwise specified in the dedicated sections.
- (i) **Rush archive:** Archived data are made available as soon as possible after (acknowledgement of) data request. Usually this specification applies for emergency requests.
- (15) <u>Delivery media:</u> Specifies the media for delivery (e.g., DVD, tape, ftp get, ftp push or OGC service).
- (16) **Processing:** Specifies the level of pre- processing to be done by the Space Component. This includes bundling, pan-sharpening, and tbc LUT stretching, tbc atmospheric correction, <u>ortho-rectification</u>, and mosaicking. For orthorectification a field MANDATORY has been included.
- (17) Reference data to be used: Specifies the characteristics of reference data and Digital elevation model (Ground control points GCP-planimetric accuracy, GCP source, DEM source, DEM vertical accuracy). Free text is given for comments and eventual licence restrictions/cost.
- (18) <u>Auxiliary information:</u> Provides ADDITIONAL information for specifying the dataset. (Free text.)
- (19) **Data type Sensor:** Describes if multiple sensors are allowed.

### **5.2.** Fixed / CORE Dataset requirements

- 5.2.1. Optical HR Pan EU coverage (CORE\_001a / CORE\_001b)
  - **REQ-5.2.1-1** Two seasonal coverages of Optical pan Europe HR1/2 (5.8 M Km²) (two coverages, each fully within the vegetation season either in 2011 or in 2012, separated by at least 6 weeks; preferably one coverage within the narrow acquisition windows, and mandatory both

within the limits of the extended acquisition windows) shall be provided for the continuation of Corine like exercises and the production of HRLs on land cover characteristics by EU, EEA and Member States. Gap filling shall be acquired in 2013. Three options should be considered:

Option 1: (i) one optical HR1 coverage with SWIR in season 1 (CORE\_001a) and (ii) one optical HR2 coverage without SWIR in season 2 (CORE\_001b).

Option 2: Two coverages in HR2 with SWIR in season 1 and 2 (CORE 001b).

Option 3: One coverage in HR2 with SWIR in season 1 and one coverage in HR2 without SWIR in season 2.

- REQ-5.2.1-2 Multi-user licenses should be acquired to cover as a baseline all relevant activities of users in [EU\_Inst], [Publ\_Auth] and [FP7\_Proj] (download service). [Public] should have access in DISCOVERY mode. VIEW mode should however be considered an option towards [Public] and will be used if affordable
- **REQ-5.2.1-3** The images should be delivered per "large region" and production time for the coverage in season 1 of reference year respectively should not exceed 30 days after the closure of the actual acquisition window. Delivery of coverage 2 should be no later than the end of the reference year, -. Partial deliveries per smaller areas of minimum 2500 sqkm are acceptable.
- **REQ-5.2.1-4** Cloud coverage should not exceed 5% per country.
- REQ-5.2.1-5 Deleted
- **REQ-5.2.1-6** The images should be ortho-rectified both in European and 39 national projections as defined in Annex 6.
- **REQ-5.2.1-7** For each season the acquisition strategy should take into account the capacities of the sensors to complete the coverage within the acquisition windows, using one sensor as a baseline completed with additional sensors to fill the gaps. The management of acquisition should be flexible enough to revise dynamically the acquisition plan and complete the coverage within the

<sup>&</sup>lt;sup>2</sup> The map of the "large regions" is provided in Annex 4, and the corresponding shapefile provided with the electronic version of this document.

<sup>&</sup>lt;sup>3</sup> Reference year being either 2011 or 2012.

- acquisition period using programming capacities if required (multi-tasking approach).
- **REQ-5.2.1-8** The detailed requirements are provided in Annex 1 under the reference CORE 001a and b and in Annex 5.
- **REQ-5.2.1-9** The number of large regions to be delivered in 2011 shall cover a minimum area of 2 million square kilometres.
- 5.2.2. Access to former pan EU coverage archives (CORE\_002)
  - **REQ-5.2.2-1** Access to Image 2000, Image2006 and Image2009 archive for [EU\_Inst], [Publ\_Auth] and [FP7\_Proj] and [Public] at the same conditions as specified in REQ-5.2.1-2, shall be provided by extending the existing licenses if required.
  - **REQ-5.2.2-2** The detailed requirements are provided in Annex 1 under the reference CORE 002.
- 5.2.3. Optical VHR2 coverage over EU (CORE\_003a / CORE\_003b)
  - **REQ-5.2.3-1** An Optical VHR2 coverage over EU 27 plus 3 Candidate Countries (4.5 M Km²) shall be provided to cover the requirements of various services :
    - a. Land applications at EU level (Urban Atlas, land cover over riparian zones for the purpose of biodiversity monitoring, monitoring of coastal areas, risk areas, protected areas (Natura 2000 sites), Land Parcel Identification...) and at national level;
    - b. Emergency response service: the objective is to have a continuous update of image archive for reference mapping.

The acquisition strategy could be completed within 3 years (e.g. 1/3 of EU covered each year).

- **REQ-5.2.3-2** The detailed requirements are provided in Annex 1 under the reference CORE\_003a.
- **REQ-5.2.3-3** In case REQ-5.2.3-2 is not achievable (full EU27 plus 3 coverage VHR2), requirements as specified in CORE\_003b shall apply. Requirements should be identical to those applied for Urban Atlas 2006. In such case, 200 additional hot spots of 2500 sqkm each will be covered by additional data sets.
- **REQ-5.2.3-4** The images shall be delivered on a quarterly basis and production time shall not exceed 30 days. A continuous acquisition strategy and resulting delivery strategy is assumed. On average, delivery of 400000 sqkm is

expected per quarter. Delivered datasets shall be bigger than 2500 sqkm.

- **REQ-5.2.3-5** Cloud coverage should not exceed 5% per country, and no more than 5% over the areas defined in REQ-5.2.3-3.
- **REQ-5.2.3-6** For Core\_003a, the images should be ortho-rectified to an accuracy better than 5m rmse (absolute 1-D value<sup>4</sup>) and provided both in European and 27 plus 3 national projections as specified in Annex 6. For areas defined in REQ-5.2.3-3, an image to image accuracy of 1 pixel or better has to be achieved with respect to Urban Atlas 2006.
- REQ-5.2.3-7 For each season the acquisition strategy should take into account the capacities of the sensors to complete the coverage within the acquisition windows and should ensure a 5 years time difference with respect to the actual acquisitions of Urban Atlas2006 to the maximum possible extent. The management of acquisition should be flexible enough to revise dynamically the acquisition plan and complete the coverage within the acquisition period using programming capacities if required (multi-tasking approach). Seasonal snow shall be avoided.
- REQ-5.2.3-8 Multi-user licenses should be acquired to cover as a baseline all relevant activities of users in [EU\_Inst], [Publ\_Auth] and [FP7\_Proj] (download service). [Public] should have access in DISCOVERY mode. VIEW mode should however be considered an option towards [PUBLIC] and will be used if affordable
- **REQ-5.2.3-9** The acquisition of Core\_003a shall be performed within the same extended acquisition windows than Core\_001, for the purposes of the local component Land Cover/Use on riparian zones.
- **REQ-5.2.3-10** As an option, Core\_003shall be extended to the full EEA39 coverage.
- 5.2.4. Optical worldwide LR coverage (CORE\_004 and 5)
  - **REQ-5.2.4-1** A daily worldwide coverage in LR data with imaging multi-spectral radiometers shall be provided for the

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<sup>&</sup>lt;sup>4</sup> "absolute 1-d value" means rmse computed between output images and reference checkpoints which should have 5 times better accuracy than the required tolerable rmse. The rmse value should be valid in both X- and Y- directions separately.

- production of biogeophysical parameters as specified in Annex 1 under the reference CORE 004
- **REQ-5.2.4-2** The data should be delivered within 24h after the acquisition (Fast24h)
- **REQ-5.2.4-3** Archive data (10 years) shall also be provided as specified in Annex 1 under the reference CORE\_005, as an extension of the current DA grant (LMCS\_006b).
- **REQ-5.2.4-4** Any complementary requirement not specified in this document shall be identical to requirement LMCS 006b of RD[1].
- **REQ-5.2.4-5** Authorised users for DOWNLOAD service are [EU\_Inst], and [FP7\_Proj]. In addition [Publ\_Auth] and [Public] should have access to DISCOVERY service.
- 5.2.5. Optical worldwide MR coverage (CORE 006 / CORE 007)
  - **REQ-5.2.5-1** A worldwide coverage in MR data with imaging multispectral radiometers shall be provided for the production of biogeophysical parameters as specified in Annex 1 under the reference CORE 006.
  - **REQ-5.2.5-2** The data should be delivered within 24h after the acquisition (Fast24h)
  - **REQ-5.2.5-3** Bi-monthly and bi-weekly composites<sup>5</sup> shall be delivered in normal mode.
  - **REQ-5.2.5-4** Archive data (from 01/2007) shall also be provided as specified in Annex 1 under the reference CORE\_007, as an extension of the current DA grant (LMCS 006a).
  - **REQ-5.2.5-5** Any complementary requirement not specified in this document shall be identical to requirement LMCS 006a of RD[1].
  - **REQ-5.2.5-6** Authorised users for DOWNLOAD service are [EU\_Inst], and [FP7\_Proj]. In addition [Publ\_Auth] and [Public] should have access to DISCOVERY service.
- 5.2.6. European HR composites (CORE\_008)
  - **REQ-5.2.6-1** Composites of optical MR1 (AWIFS type) full EU coverage shall be provided during the vegetation period

<sup>&</sup>lt;sup>5</sup> See definition in Annex 3

- March-October, as specified in Annex 1 under the reference CORE 008
- **REQ-5.2.6-2** Composites shall be provided on a monthly basis.
- REQ-5.2.6-3 Multi-user licenses should be acquired to cover as a baseline all relevant activities (download service) of authorised users which are by order of priority (i) [EU\_Inst], and [FP7\_Proj] and (ii) [Publ\_Auth]. [Public] should have access in DISCOVERY mode. VIEW mode should however be considered an option towards [Public] and will be used if affordable
- **REQ-5.2.6-4** The repetition cycle has a higher priority than the license extension.
- **REQ-5.2.6-5** Cloud coverage should not exceed 20% per product.
- **REQ-5.2.6-6** The area to be covered by the MR1 composites shall be temporally and spatially synchronised with Core\_001. (i.e. 8 MR1 composites shall be provided in 2011 over the Core\_001 areas acquired in 2011, and 8 MR1 composites shall be acquired in 2012 over the Core\_001 areas acquired in 2012).
- 5.2.7. Sub-Saharan Optical coverage (CORE\_009)
  - **REQ-5.2.7-1** One full sub-Saharan optical HR2 coverage shall be provided, as specified in Annex 1 under the reference CORE 009.
  - **REQ-5.2.7-2** Cloud coverage should not exceed 20% per country. There should not be haze.
  - REQ-5.2.7-3 Data should be preferably acquired during the dry seasons for the regions with seasonal climate (outside the equatorial belt). For the northern hemisphere the dry season usually extends from October/November to March/April. For the southern hemisphere the dry season usually extends from June/July to August/September. The acquisition strategy should prefer the beginning or the end of the dry season and avoid the middle of the dry season.
  - **REQ-5.2.7-4** The images should be delivered on a quarterly basis. A continuous acquisition strategy and resulting delivery strategy is assumed. On average, delivery of 2 mio. sqkm is expected per quarter.
  - **REQ-5.2.7-5** For each season the acquisition strategy should take account the capacities of the sensors to complete the coverage within the acquisition windows, using one

sensor as a baseline completed with additional sensors to fill the gaps. The management of acquisition should be flexible enough to revise dynamically the acquisition plan and complete the coverage within the acquisition period using programming capacities if required (multi-tasking approach).

- REQ-5.2.7-6 Authorised users are by order of priority:

  1./ [EU\_Inst] and, [FP7\_Proj] (DOWNLOAD service)

  2./ DOWNLOAD service for a limited number of authorised users from [INT\_ORG\_NGO] in Africa (no more than 10-15 organisations)

  3./ Access to DISCOVERY mode for [Public], access in VIEW mode to [Publ\_Auth] as an option if affordable
- **REQ-5.2.7-7** Access to the data set defined under reference DAP\_MG2\_25 in RD[2] shall be provided for the authorised users defined in REQ-5.2.7-6 by extending the existing licenses.

#### 5.2.8. *Marine requirements*

- REQ-5.2.8-1 The requirements identified in section 3.1 of RD[1] shall apply, as a continuation of the activities undertaken under the MyOcean FP7 project: (i) Sea Ice monitoring datasets (MCS\_002a, MCS\_002b, MCS\_002c, MCS\_002d, MCS\_002e, MCS\_002f, MCS\_002g, MCS\_002h), (ii) Global and Regional Sea Level (MCS\_003), Global and Regional sea Surface temperature (MCS\_004), Global and Regional Sea Ocean Colour (MCS\_005 and MCS\_016).
- **REQ-5.2.8-2** Enough flexibility shall be introduced to allow to regularly update the areas identified in requirements MCS\_002a to MCS\_002h, according to the sea ice coverage.
- **REQ-5.2.8-3** Authorised users are [EU\_Inst] and [FP7\_Proj] (download service)

#### 5.2.9. Atmosphere requirements

- **REQ-5.2.9-1** The requirements identified in section 6.1 of RD[1] shall be fulfilled
- **REQ-5.2.9-2** Authorised users are [EU\_Inst] and [FP7\_Proj] (download service)
- **REQ-5.2.9-3** Timeliness requirements shall have precedence over amount of data

#### 5.3. Flexible / ADDITIONAL datasets requirements

Dataset in rush mode will serve the objectives of the ERCS (Safer and its continuation under GIO) and the security services mainly. Both archived data and new tasked satellite data (new acquisitions) shall be made available.

The objective of data sets in standard mode is to allow beneficiaries to access to contributing missions archive in optical and SAR HR1/2 and VHR1/2: in order to be able to build time series, make comparisons etc... and to feed users with new ADDITIONAL images both, for emergency and security (outside crisis phase) and land services worldwide

#### Overall requirements are:

- **REQ-5.3.1-1** ADDITIONAL datasets shall be provided in order to serve the objectives of the GMES services (implemented through either FP7 projects or through the GMES program initial operations) and some requirements specific to EU agencies (e.g. EMSA, EUSC, FRONTEX). Additional data sets are split into categories, according to their timeliness requirements: rush mode or standard mode.
- **REQ-5.3.1-2** Authorised users of Additional data sets are [EU\_Inst] and [FP7\_Proj] (download service). As an option, access to [Publ\_Auth] shall be provided (download service).
- **REQ-5.3.1-3** Data sets shall be made available on demand from the beneficiary.
- **REQ-5.3.1-4** Data ordering and associated timeliness requirements for rush mode data require a 24h/7 service availability (including the GCMs).
- **REQ-5.3.1-5** Timeliness requirements have precedence over data volume

#### 5.3.2. Archive rush retrieval

- **REQ-5.3.2-1** The targeted timeliness for archive retrieval in rush mode shall be 1.5 hours from request. For the period 2010-2013, archive retrieval not older than 24 hours are acceptable.
- **REQ-5.3.2-2** Archived data should not be older than 3 years over EEA38, and should not be older than 5 years over high risk areas as defined by the Emergency Core service outside EEA38.

- **REQ-5.3.2-3** Archived data should be made available over the whole world.
- **REQ-5.3.2-4** The following archived data shall be made available
- a) Optical HR1 data as specified in Annex 2 under the reference ADD\_001a
- b) Optical HR2 data as specified in Annex 2 under the reference ADD\_001b
- c) Optical VHR1 data as specified in Annex 2 under the reference ADD\_003a
- d) Optical VHR2 data as specified in Annex 2 under the reference ADD 003b
- e) SAR HR1 data as specified in Annex 2 under the reference ADD\_005a
- f) SAR HR2 data as specified in Annex 2 under the reference ADD\_005b
- g) SAR VHR1 data as specified in Annex 2 under the reference ADD\_007a
- h) SAR VHR2 data as specified in Annex 2 under the reference ADD 007b

#### 5.3.3. New acquisitions in rush mode

- **REQ-5.3.3-1** The targeted timeliness for new acquisitions in rush mode shall be 16 hours from request. For the period 2010-2013, new acquisitions not older than 72 hours are acceptable.
- **REQ-5.3.3-2** The following new acquisition in rush mode shall be made available
- a) Optical HR1 data as specified in Annex 2 under the reference ADD\_002\_a
- b) Optical HR2 data as specified in Annex 2 under the reference ADD\_002\_b
- c) Optical VHR1 data as specified in Annex 2 under the reference ADD 004a
- d) Optical VHR2 data as specified in Annex 2 under the reference ADD 004b
- e) SAR HR1 data as specified in Annex 2 under the reference ADD\_006\_a

- f) SAR HR2 data as specified in Annex 2 under the reference ADD\_006\_b
- g) SAR VHR1 data as specified in Annex 2 under the reference ADD 008a
- h) SAR VHR2 data as specified in Annex 2 under the reference ADD 008b
- **REQ-5.3.3-3** In case of conflict, [EU\_Inst] and [FP7\_Proj] implementing the ERCS and the security services shall have precedence over other beneficiaries in requesting new acquisitions.
- **REQ-5.3.3-4** Timeliness requirements and compliance with quality requirements for a given request shall have precedence over the number of requests being served.

#### 5.3.4. Archive standard retrieval

- **REQ-5.3.4-1** Archived data should not be older than 3 years over EEA38, and should not be older than 5 years over high risk areas as defined by the Emergency Core service outside EEA38.
- **REQ-5.3.4-2** Archived data shall be made available over the whole world.
- **REQ-5.3.4-3** The following archived data shall be made available
- a) Optical HR1 data as specified in Annex 2 under the reference ADD\_009a
- b) Optical HR2 data as specified in Annex 2 under the reference ADD\_009b
- c) Optical VHR1 data as specified in Annex 2 under the reference ADD 011a
- d) Optical VHR2 data as specified in Annex 2 under the reference ADD 011b
- e) SAR HR1 data as specified in Annex 2 under the reference ADD\_013a
- f) SAR HR2 data as specified in Annex 2 under the reference ADD\_013b
- g) SAR VHR1 data as specified in Annex 2 under the reference ADD 015a
- h) SAR VHR2 data as specified in Annex 2 under the reference ADD 015b

- i) SAR\_MR1 data as specified in Annex 2 under the reference ADD 019a
- j) SAR\_MR2 data as specified in Annex 2 under the reference ADD 019b
- k) Optical\_MR1 data as specified in Annex 2 under the reference ADD 020a
- Optical\_MR2 data as specified in Annex 2 under the reference ADD 020b

#### 5.3.5. New acquisitions in standard mode

# **REQ-5.3.5-1** The following new acquisition in standard mode shall be made available:

- a) Optical HR1 data as specified in Annex 2 under the reference ADD\_010a
- b) Optical HR2 data as specified in Annex 2 under the reference ADD 010b
- c) Optical VHR1 data as specified in Annex 2 under the reference ADD 012a
- d) Optical VHR2 data as specified in Annex 2 under the reference ADD 012b
- e) SAR HR1 data as specified in Annex 2 under the reference ADD 014a
- f) SAR HR2 data as specified in Annex 2 under the reference ADD\_014b
- g) SAR VHR1 data as specified in Annex 2 under the reference ADD 016a
- h) SAR VHR2 data as specified in Annex 2 under the reference ADD 016b
- m)SAR\_MR1 data as specified in Annex 2 under the reference ADD\_017a
- n) SAR\_MR2 data as specified in Annex 2 under the reference ADD\_017b
- o) Optical\_MR1 data as specified in Annex 2 under the reference ADD 018a
- p) Optical\_MR2 data as specified in Annex 2 under the reference ADD 018b

**REQ-5.3.5-2** In case of conflict, [EU\_Inst] and [FP7\_Proj] implementing the ERCS and the security services shall have precedence over other beneficiaries in requesting new acquisitions

## 5.3.6. Quota management

**REQ-5.3.6-1** The overall quota for ADDITIONAL datasets is defined in the table below

## ESTIMATED ENVELOPE OF ADDITONAL DATA FOR THE PERIOD 2011-2013 (area in km2)

		·
Additional dataset	code	TOTAL
Archive_rush_Optical_HR1	ADD_001a	151.162
Archive_rush_Optical_HR2	ADD_001b	323.385
Archive_rush_Optical_VHR1	ADD_003a	43.131
Archive rush Optical VHR2	ADD 003b	230.857
Archive rush SAR HR1	ADD 005a	226.556
Archive rush SAR HR2	ADD 005b	997.188
Archive rush SAR VHR1	ADD 007a	13.350
Archive rush SAR VHR2	ADD 007b	94.000
New acquisition_rush_Optical_HR1	ADD 002a	515.865
New acquisition_rush_Optical_HR2	ADD_002b	522.039
New acquisition rush Optical VHR1	ADD 004a	41.424
New acquisition rush Optical VHR2	ADD 004b	61.498
New acquisition rush SAR HR1	ADD 006a	378.188
New acquisition rush SAR HR2	ADD 006b	2.159.688
New acquisition_rush_SAR_VHR1	ADD 008a	17.359
New acquisition_rush_SAR_VHR2	ADD_008b	283.600
Archive_standard_Optical_HR1	ADD_009a	838.762
Archive standard Optical HR2	ADD 009b	1.301.938
Archive_standard_Optical_VHR1	ADD 011a	146.837
Archive standard Optical VHR2	ADD 011b	429.793
Archive standard SAR HR1	ADD 013a	417.407
Archive_standard_SAR_HR2	ADD_013b	2.309.024

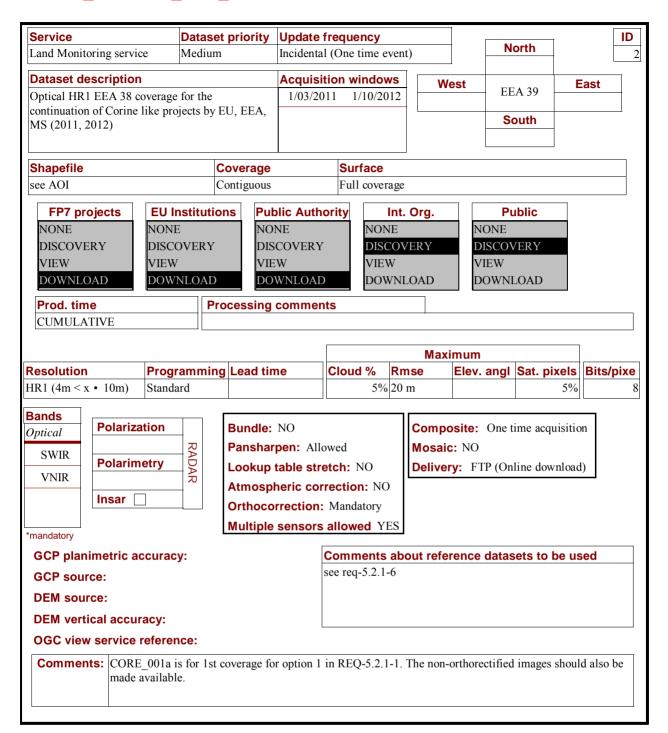
		14.572
Archive_standard_SAR_VHR1	ADD_015a	
Archive standard SAR VHR2	ADD 015b	479.818
	_	1.527.057
New acquisition_standard_Optical_HR1	ADD_010a	
New acquisition_standard_Optical_HR2	ADD_010b	5.345.376
New acquisition_standard_Optical_VHR1	ADD_012a	119.615
Trew addiction_standard_optical_viii()	7188_012a	372.932
New acquisition_standard_Optical_VHR2	ADD_012b	
New acquisition_standard_SAR_HR1	ADD_014a	1.743.275
Trow addition_danadra_o/it_Tit()	7.55_0114	5.351.639
New acquisition_standard_SAR_HR2	ADD_014b	
		25.847
New acquisition_standard_SAR_VHR1	ADD_016a	
New acquisition_standard_SAR_VHR2	ADD_016b	1.050.004
	_	1.612.500
New acquisition_standard_SAR_MR1	ADD_017a	
New acquisition_standard_SAR_MR2	ADD_017b	9.640.000
		0
New acquisition_standard_Optical_MR1	ADD_018a	
New year in the standard Outland MDO	ADD 0404	0
New acquisition_standard_Optical_MR2	ADD_018b	0
Archive_standard_SAR_MR1	ADD_019a	o o
		6.200.000
Archive_standard_SAR_MR2	ADD_019b	0
Archive_standard_Optical_MR1	ADD_020a	U
	ADD 255	0
Archive_standard_Optical_MR2	ADD_020b	

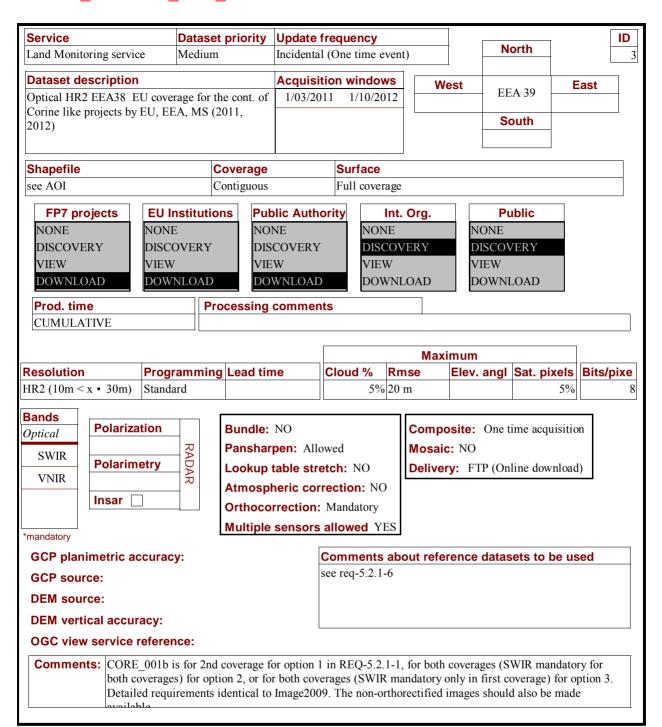
- **REQ-5.3.6-2** In case REQ-5.2.3-3 is implemented, additional 500,000 km<sup>2</sup> of the data set ADD\_012b shall be made available.
- **REQ-5.3.6-3** The quota mechanism shall ensure that all needs of the emergency and security services are fulfilled, with priority given to crisis phase.
- **REQ-5.3.6-4** For other services, a maximum quota will be assigned and shall be managed on a per service basis. They will be informed in advance of the overall envelope of quotas per type of datasets allocated to their activities (based on the initial estimate of their requirements).
- **REQ-5.3.6-5** A continuous monitoring of the consumption of the quotas shall be maintained on a per service basis and make this information available to the services.

- **REQ-5.3.6-6** At regular intervals (e.g. 6 months or one year) the quota consumption should be assessed by the EC and ESA, in order to take corrective measures if required
- **REQ-5.3.6-7** Services will be responsible for managing themselves their own annual quotas, under the control of ESA. As a first step the beneficiary will approach ESA with a requirement for a certain area to be covered with certain data types in a certain time frame. The Operations team will issue the orders to the GMES Contributing Missions, and will inform the beneficiary of the progress status on a regular basis.

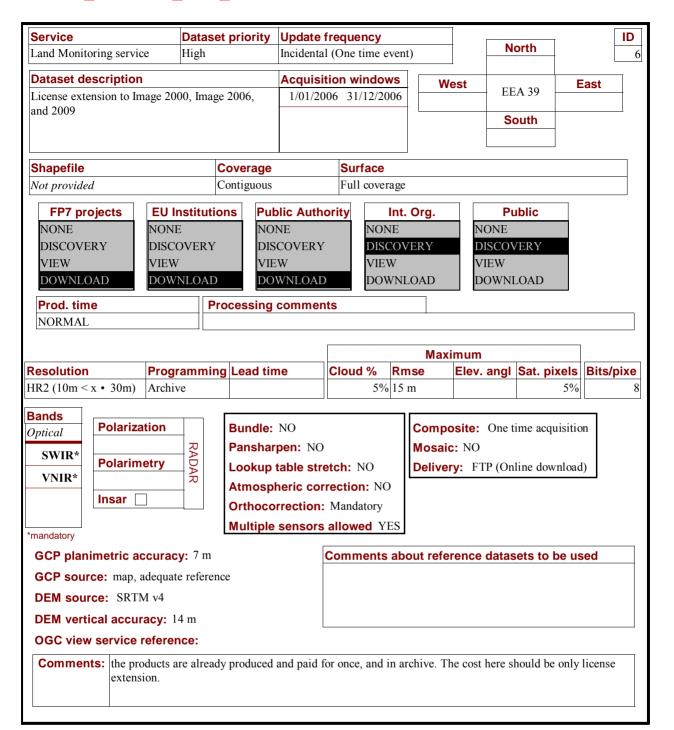
# Annexes

# Annex 1. DETAILED CORE DATASETS SPECIFICATIONS

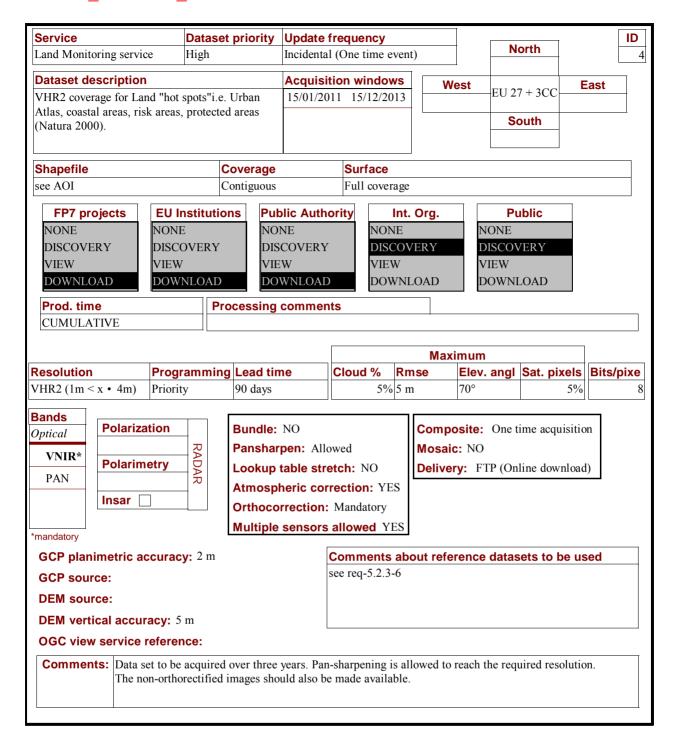




## CORE 002 EU HR2 archive

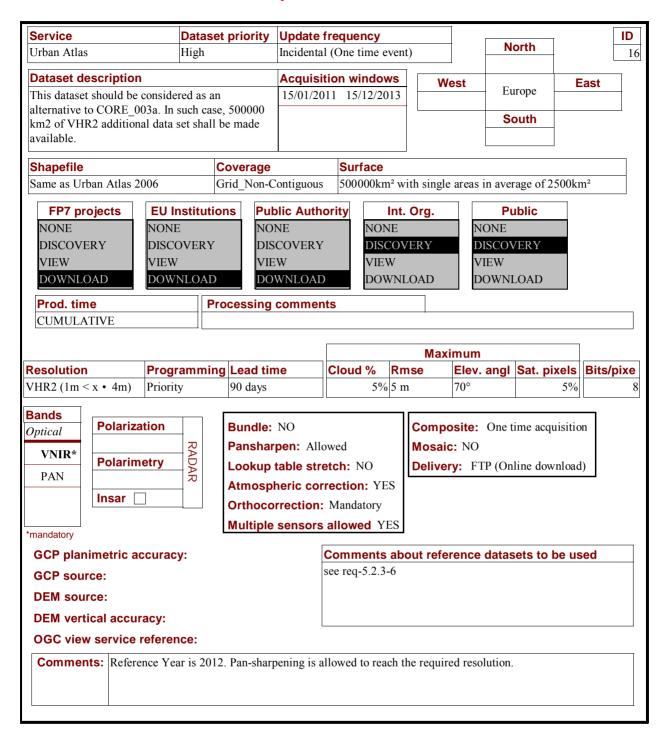


## CORE 003a EU VHR2

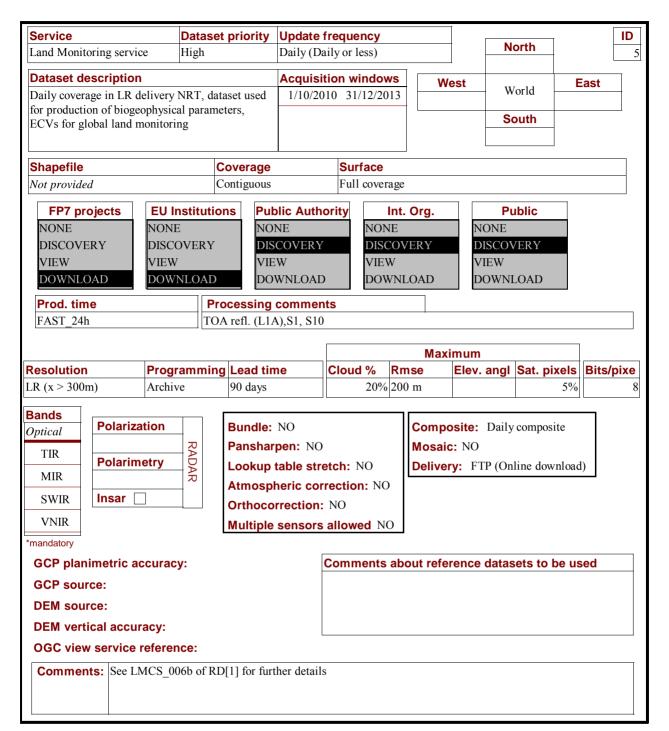


## CORE\_003b EU\_VHR2\_hotspots

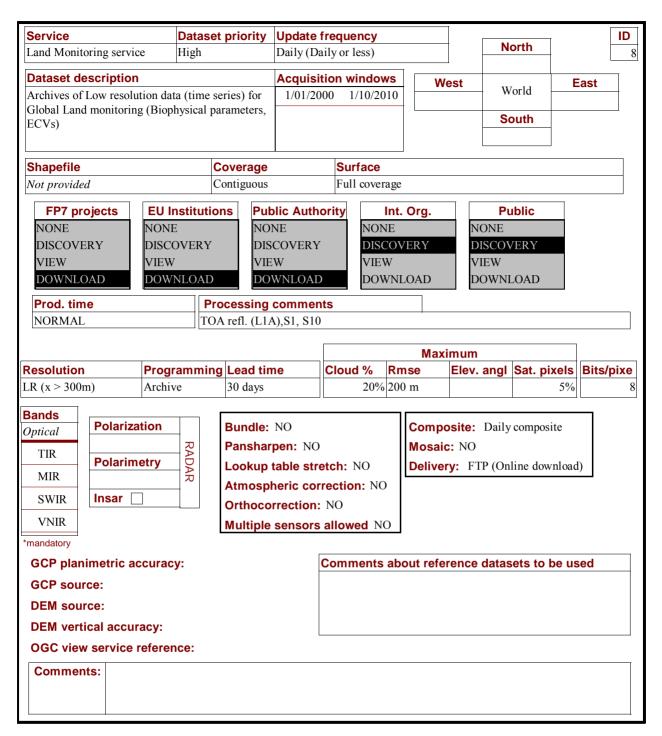


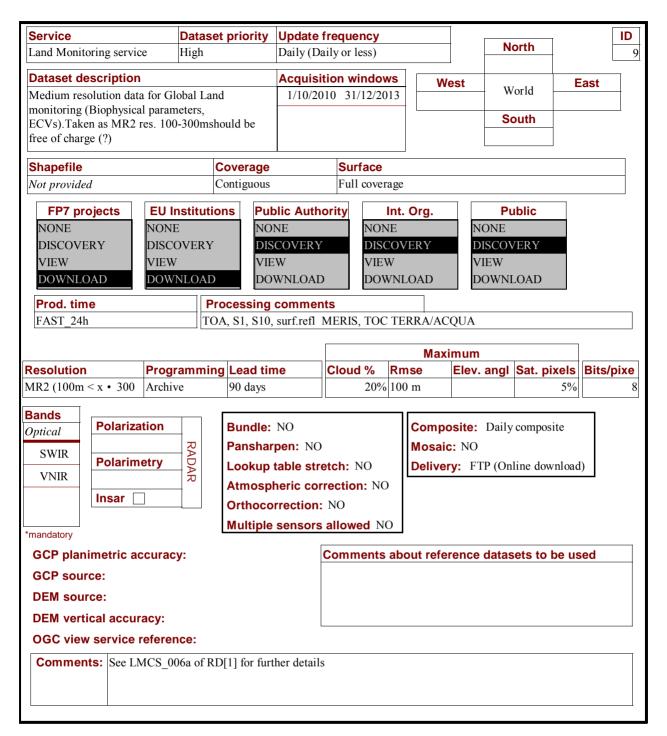


### CORE\_004 Global\_LR



### CORE\_005 Global\_LR\_archive

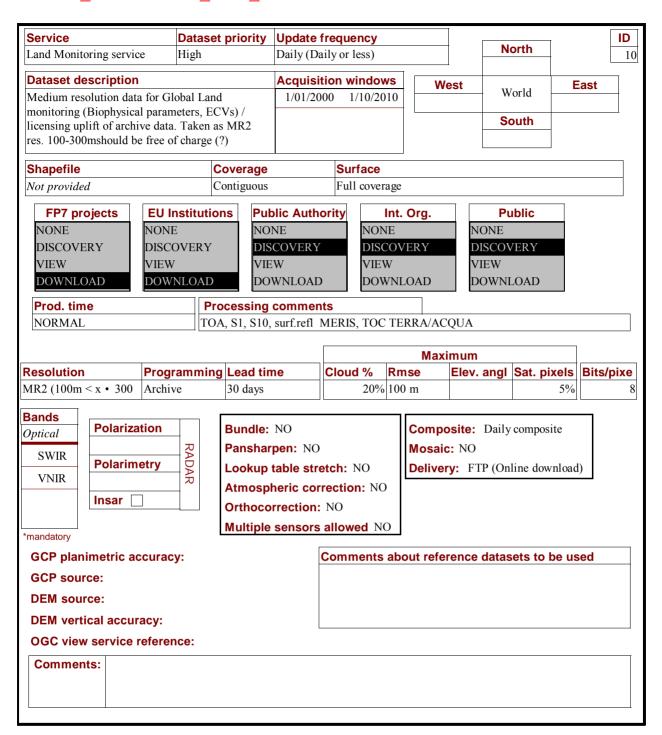




#### Occurences

**x1** 

#### CORE 007 Global MR2 archive

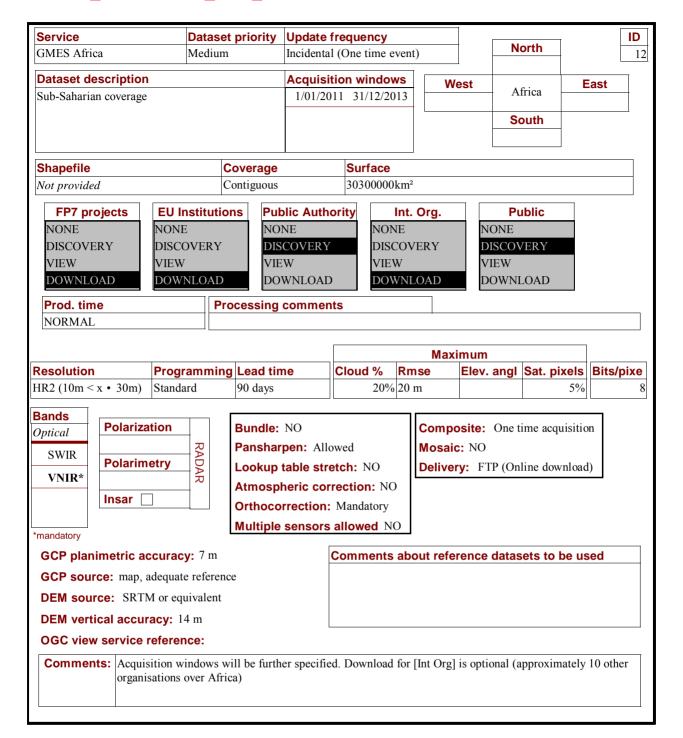


# CORE\_008 EU\_MR1\_seasonal\_monitoring

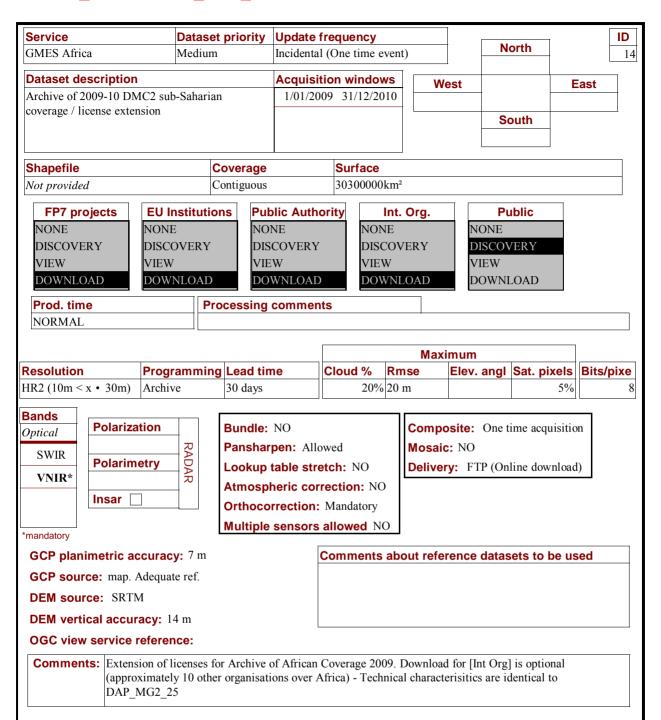
Occurences

Service	Dataset priority	Update	frequency						ID
Land Monitoring service	Medium	Monthly	(Every month	)		No	rth		11
Dataset description			tion windov		West	FEA	20	East	
Dynamic monitoring of vegeta vegetation period (March-Octo composites of optical MR1 (A	ober): Monthly	1/03/20	011 31/10/20	11		Sou			
Shapefile	Coverage		Surface						
Not provided	Contiguous		Full cover	age					
NONE NONI DISCOVERY DISCOVERY VIEW VIEW	E NO OVERY DIS VIII	WNLOAD	NON DISC VIEV DOV	COVERY	I	Pub NONE DISCOVE VIEW DOWNLO	ERY		
				N/I	aximum			7	
Resolution Progr	ramming Lead tir	ne	Cloud %	Rmse			Sat. pixels	Bits/	pixe
MR1 (30m < x • 100m) Standa			20%	20 m		J	5%	+	8
Bands Optical SWIR* VNIR*  Insar  *mandatory	Lookup Atmosp Orthoco	rpen: NO table stro heric cor orrection:	etch: NO rection: YE Mandatory allowed No	Mos Deliv	aic: NO	)	ly composito		
GCP planimetric accurac	ev: 7 m	ſ	Comments	about re	ference	datase	ets to be u	sed	
GCP source: map, adequat		-		about 16	10101100	, uulast	no to be u	Jua	
DEM source: SRTM v4									
DEM vertical accuracy: 1	4 m								
OGC view service referen		Ĺ							
Remarks:	mes 1/3 of Europe (mes 2/3 of Eu	the same 2	/3 that will be	e covered l	by 2012	HR image			

### CORE 009 Africa HR2 full



#### CORE\_010 Africa\_HR2\_archive

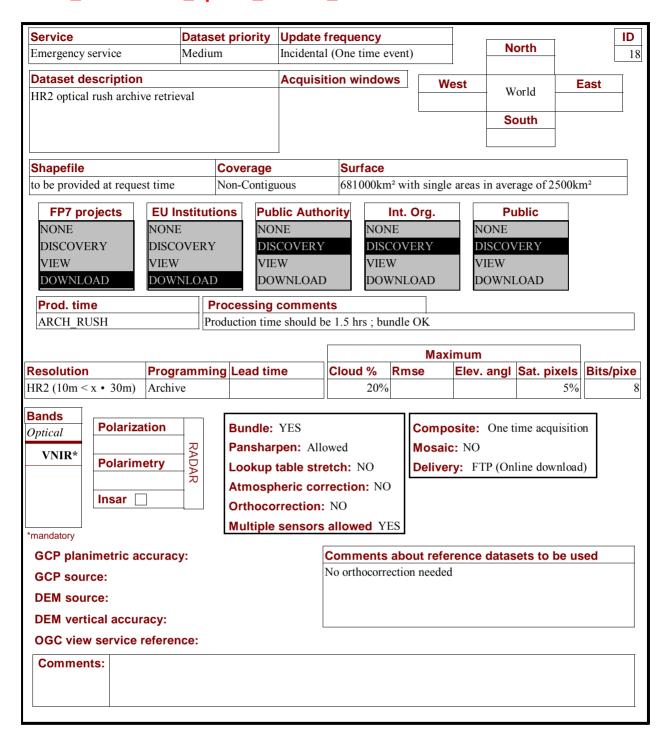


# Annex 2. Detailed ADDITIONAL datasets specifications

# ADD\_001a HR1\_optical\_archive\_rush

Dataset description HR1 optical rush archive retrieval  Shapefile to be provided at request time Non-Contiguous  FP7 projects NONE DISCOVERY VIEW DOWNLOAD  Prod. time ARCH_RUSH  Production time should be 1.5 hrs; bundle OK  Resolution HR1 (4m < x • 10m) Polarization Acquisition windows West World South  None Discover View Discovery VIEW DOWNLOAD Download Download Discovery VIEW Download Download Download Discovery VIEW Download Download Download Download Discovery VIEW Download Download Download Download Download Download Discovery VIEW Download Download Download Download Download Download Discovery VIEW Download	Service	Datas	et priority	Update fr				N			ID
Shapefile   Coverage   Surface   To be provided at request time   Non-Contiguous   S84000km² with single areas in average of 2500km²	Emergency service	High		Incidental (	One time event	t)		Nort	h		17
Shapefile   Coverage   Surface   To be provided at request time   Non-Contiguous   S84000km² with single areas in average of 2500km²	Dataset description			Acquisiti	on windows	<b>\</b> \\\	act			East	
Shapefile to be provided at request time Non-Contiguous  FP7 projects NONE DISCOVERY VIEW DOWNLOAD  Prod. time ARCH_RUSH  Programming Lead time ARCH_RUSH  Polarimetry  Shapefile  None Discovery View Download  Surface Saturface Saturder Saturface	HR1 optical rush archive re	etrieval				•	-31	Worl	d	Last	
to be provided at request time  Non-Contiguous    S84000km² with single areas in average of 2500km²								Sout	th		
to be provided at request time  Non-Contiguous    S84000km² with single areas in average of 2500km²											
to be provided at request time  Non-Contiguous    S84000km² with single areas in average of 2500km²	Shanofila		Coverage		Surface						
FP7 projects NONE DISCOVERY VIEW DOWNLOAD  Prod. time ARCH_RUSH  Resolution HR1 (4m < x • 10m) Polarimetry  Public Authority NONE DISCOVERY VIEW DOWNLOAD  Processing comments Production time should be 1.5 hrs; bundle OK  Maximum Cloud % Rmse Elev. angl Sat. pixels 20%  Maximum Cloud % Rmse Elev. angl Sat. pixels Syd	•	ime		uous		ith single	areas i	n average	e of 2500	km²	
NONE DISCOVERY VIEW DOWNLOAD  Prod. time ARCH_RUSH  Processing comments Production time should be 1.5 hrs; bundle OK    Maximum											
DISCOVERY VIEW DOWNLOAD  Prod. time ARCH_RUSH  Production time should be 1.5 hrs; bundle OK    Maximum   Cloud %   Rmse   Elev. angl   Sat. pixels   Bits/pixe			=			Org.	NO		IC		
VIEW DOWNLOAD  Prod. time ARCH_RUSH  Production time should be 1.5 hrs; bundle OK    Naximum   Resolution   Programming Lead time   HR1 (4m < x • 10m)   Archive   Archive   Archive   Polarization   Atmospheric correction: NO   Delivery: FTP (Online download)				*		'ERY			RY		
Prod. time ARCH_RUSH  Production time should be 1.5 hrs; bundle OK    Maximum   Cloud %   Rmse   Elev. angl   Sat. pixels   Elev.											
ARCH_RUSH  Production time should be 1.5 hrs; bundle OK    Maximum	DOWNLOAD	OWNLOAI	DO.	WNLOAD	DOWNL	OAD	DO	OWNLO	AD		
Resolution Programming Lead time Cloud % Rmse Elev. angl Sat. pixels 20% Sat.	Prod. time	F	Processing	comments	3						
Resolution	ARCH_RUSH	Pı	roduction tim	e should be	1.5 hrs ; bundle	OK.					
Resolution				Г		May					
HR1 (4m < x • 10m) Archive 20% 5% 8    Bands   Optical   VNIR   Polarization   Polarization   Polarimetry   Polarimetry   Atmospheric correction: NO   Delivery: FTP (Online download)   Polarization   P	Resolution Pr	ogrammi	ng Lead tin	ne (	Cloud % Rm			angl Sa	at. pixel:	s Bits/	pixe
Polarization								ang. co			8
Polarization	Pands										
VNIR Polarimetry Lookup table stretch: NO Atmospheric correction: NO	Polarization	n	Bundle:	YES		Compo	site:	One time	e acquisit	ion	
Atmospheric correction: NO	VNIR	RA	Panshar	pen: Allov	ved	Mosaid	: NO				
Atmospheric correction: NO	Polarimetry	y DA	Lookup	table stret	ch: NO	Deliver	<b>y:</b> FT	P (Online	e downloa	ad)	
	Incor -		Atmospl	heric corre	ection: NO						
Insar U Orthocorrection: NO	Insar		Orthoco	rrection: 1	NO						
*mandatory	*mandatory		Multiple	sensors a	llowed YES						
GCP planimetric accuracy: Comments about reference datasets to be used	GCP planimetric accu	racy:		С	omments abo	out refe	rence	datasets	s to be ı	ısed	
GCP source:  No orthocorrection needed	-	-		N	o orthocorrectio	n needed					
DEM source:	DEM source:										
DEM vertical accuracy:	DEM vertical accuracy	v:									
OGC view service reference:	•										
Comments:											

# ADD\_001b HR2\_optical\_archive\_rush



ADD\_002a HR1\_optical\_rapid Occurences x1

Service Dataset priority Update frequency
Emergency service High Incidental (One time event)

Dataset description Acquisition windows West World

Emergency service	Hig	gh		Incidental	(One time e	vent	t)		N	orth		19
Dataset description	1			Acquisiti	on windov	vs	We	est			East	$\neg$
HR1 optical rapid task	ing									orld		
Shapefile		С	overage	1	Surface							
to be provided at reque	est time	N	Ion-Contigu	ious	2162000k	m² v	with singl	e areas	in ave	erage of 2500	km²	
FP7 projects NONE DISCOVERY VIEW DOWNLOAD	EU Insti NONE DISCOVE VIEW DOWNLO	ERY	NON DISC VIE	COVERY	NON DISC VIEV	NE C <b>OV</b> W	Org.  VERY  LOAD	DI VI	ONE SCOV EW	/ERY		
Prod. time		+	ocessing									
FAST_24h		Proc	duction time	e should be	16 hrs ; but	ıdle	OK					
							Maxi	mum			1	
Resolution	Program	ming	Lead tim	ne	Cloud %	Rm	ıse	Elev.	angl	Sat. pixels	Bits/	pixe
HR1 $(4m < x \cdot 10m)$	Priority				20%					5%		8
Polariz  VNIR*  Polarin  Insar [	R		Lookup t Atmosph Orthocol	cen: Allow cable stremeric correction:	tch: NO ection: NO		Mosaic	: NO		ime acquisiti		
GCP planimetric a	ccuracy:			C	omments	abo	out refer	ence	datas	ets to be u	sed	
GCP source:				N	lo orthocorre	ectio	n needed					
DEM source:												
DEM vertical accu	racy:											
OGC view service	reference:											
Comments												

DEM vertical accuracy:

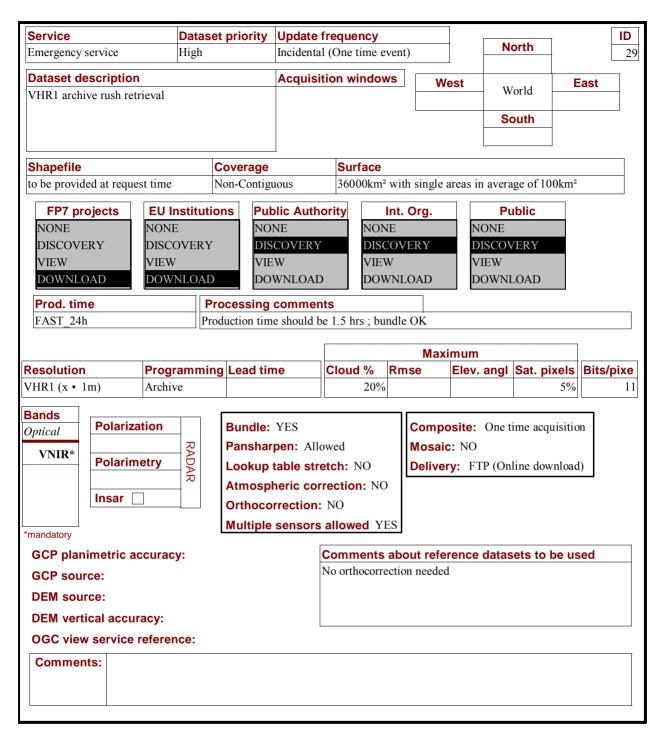
OGC view service reference:

Comments:

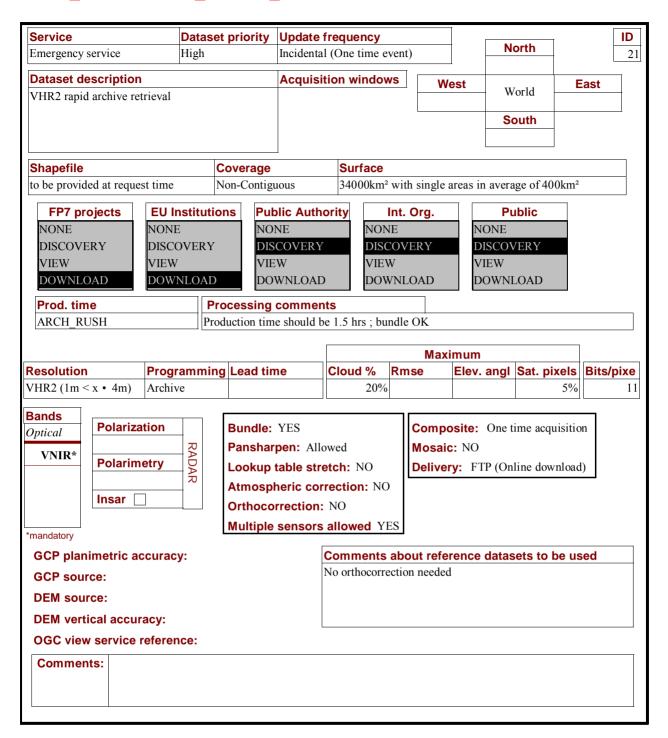
# ADD\_002b HR2\_optical\_rapid

Service Dataset priority Update frequency ID North Medium Incidental (One time event) Emergency service 20 **Dataset description** Acquisition windows West East World HR2 optical rapid tasking; South **Shapefile** Coverage Surface 894000km² with single areas in average of 2500km² to be provided at request time Non-Contiguous FP7 projects **EU Institutions Public Authority Public** Int. Org. NONE NONE NONE NONE NONE DISCOVERY DISCOVERY DISCOVERY DISCOVERY DISCOVERY VIEW VIEW VIEW VIEW VIEW DOWNLOAD DOWNLOAD DOWNLOAD DOWNLOAD DOWNLOAD Prod. time **Processing comments** ARCH RUSH Production time should be 1.5 hrs; bundle OK Maximum Resolution Programming Lead time Cloud % **Rmse** Elev. angl Sat. pixels Bits/pixe  $HR2 (10m < x \cdot 30m)$ Priority 20% **Bands Polarization Bundle: YES** Composite: One time acquisition Optical RADAR Pansharpen: Allowed Mosaic: NO VNIR\* **Polarimetry** Lookup table stretch: NO **Delivery:** FTP (Online download) **Atmospheric correction:** NO Insar Orthocorrection: NO Multiple sensors allowed YES \*mandatory **GCP** planimetric accuracy: Comments about reference datasets to be used No orthocorrection needed **GCP** source: **DEM** source: **DEM** vertical accuracy: **OGC** view service reference: **Comments:** 

### ADD\_003a VHR1\_archive\_rush

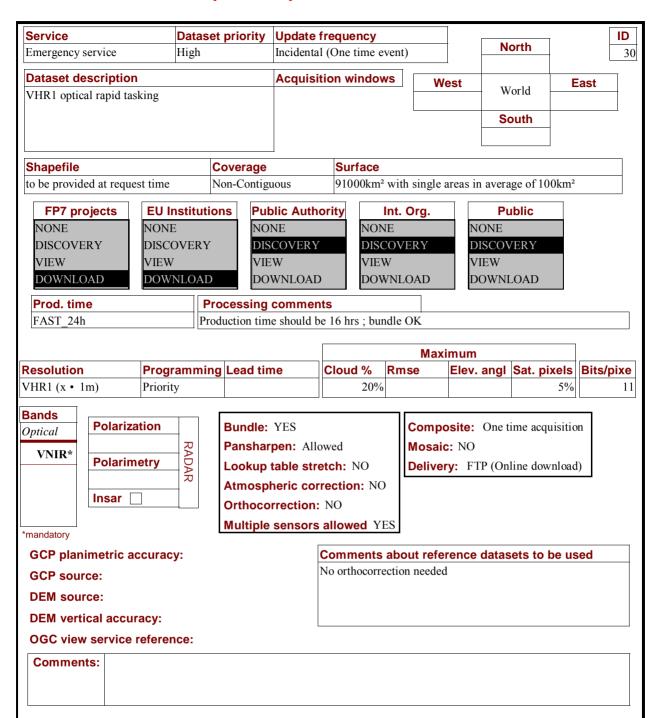


#### ADD\_003b VHR2\_archive\_rush



**x1** 

#### VHR1\_optical\_rapid ADD\_004a

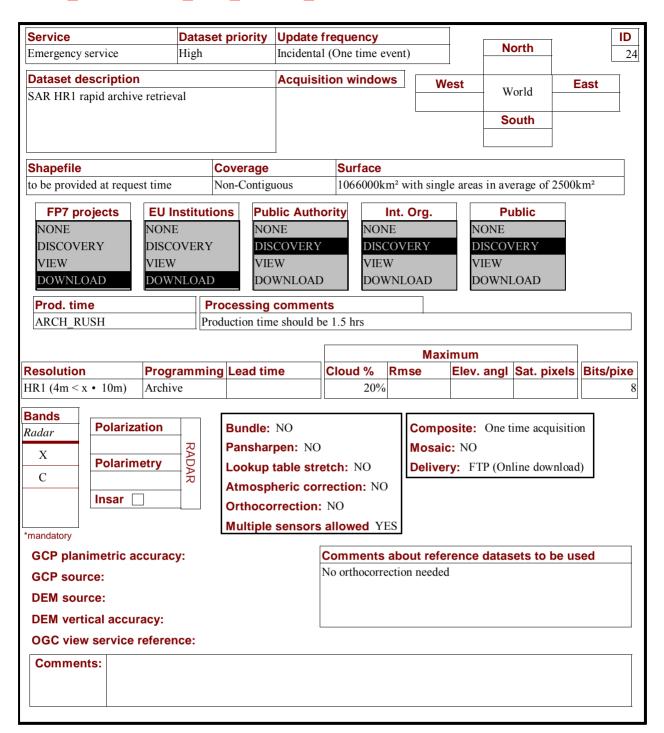


**x1** 

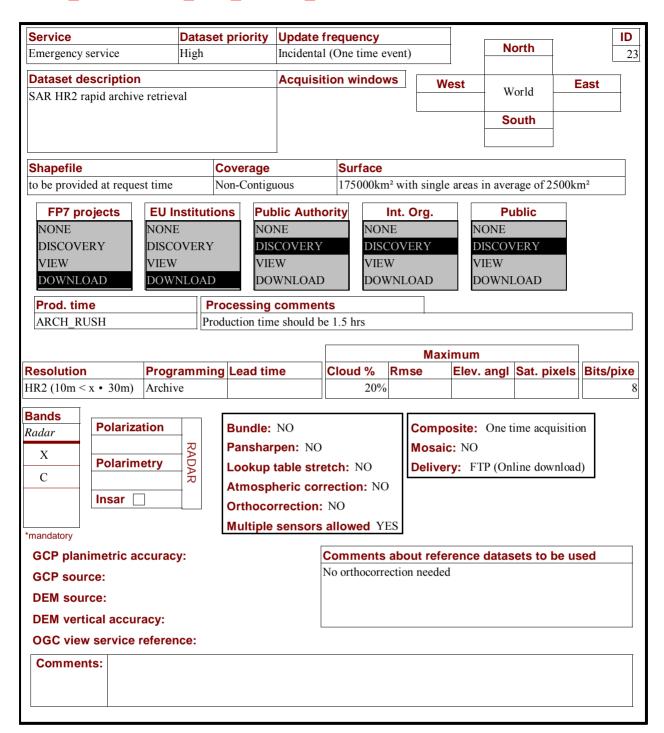
#### VHR2\_optical\_rapid ADD\_004b

Service Dataset priority Update frequency ID North High Incidental (One time event) Emergency service 22 **Dataset description** Acquisition windows West East World VHR2 optical rapid tasking; South **Shapefile** Coverage Surface 86000km² with single areas in average of 100km² to be provided at request time Non-Contiguous FP7 projects **EU Institutions Public Authority Public** Int. Org. NONE NONE NONE NONE NONE DISCOVERY DISCOVERY DISCOVERY DISCOVERY DISCOVERY VIEW VIEW VIEW VIEW VIEW DOWNLOAD DOWNLOAD DOWNLOAD DOWNLOAD DOWNLOAD Prod. time **Processing comments** FAST 24h Production time should be 16 hrs; bundle OK Maximum Resolution Programming Lead time Cloud % **Rmse** Elev. angl Sat. pixels Bits/pixe VHR2  $(1m < x \cdot 4m)$ Priority 20% 11 **Bands Polarization Bundle: YES** Composite: One time acquisition Optical RADAR Pansharpen: Allowed Mosaic: NO VNIR\* **Polarimetry** Lookup table stretch: NO **Delivery:** FTP (Online download) **Atmospheric correction:** NO Insar Orthocorrection: NO Multiple sensors allowed YES \*mandatory **GCP** planimetric accuracy: Comments about reference datasets to be used No orthocorrection needed **GCP** source: **DEM** source: **DEM** vertical accuracy: **OGC** view service reference: **Comments:** 

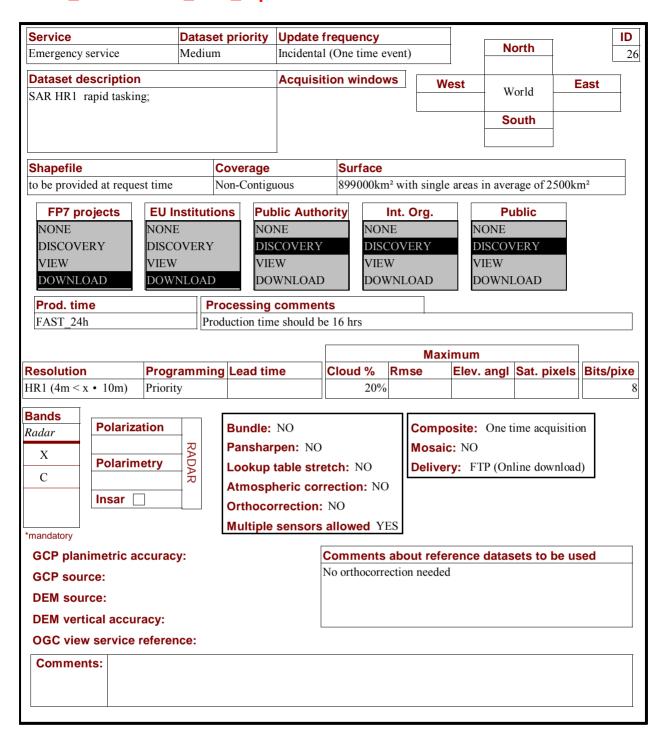
#### ADD\_005a SAR\_HR1\_archive\_rush



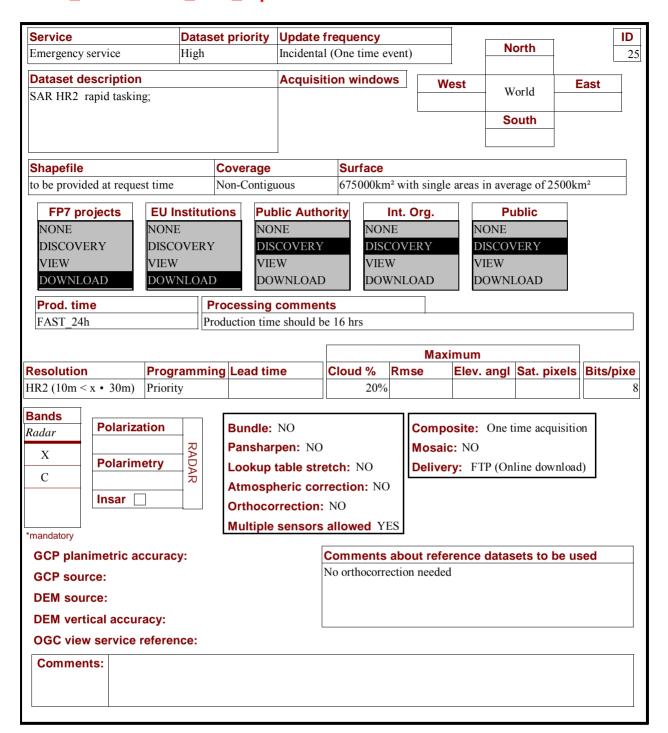
#### ADD\_005b SAR\_HR2\_archive\_rush



# ADD\_006a SAR\_HR1\_rapid



# ADD\_006b SAR\_HR2\_rapid



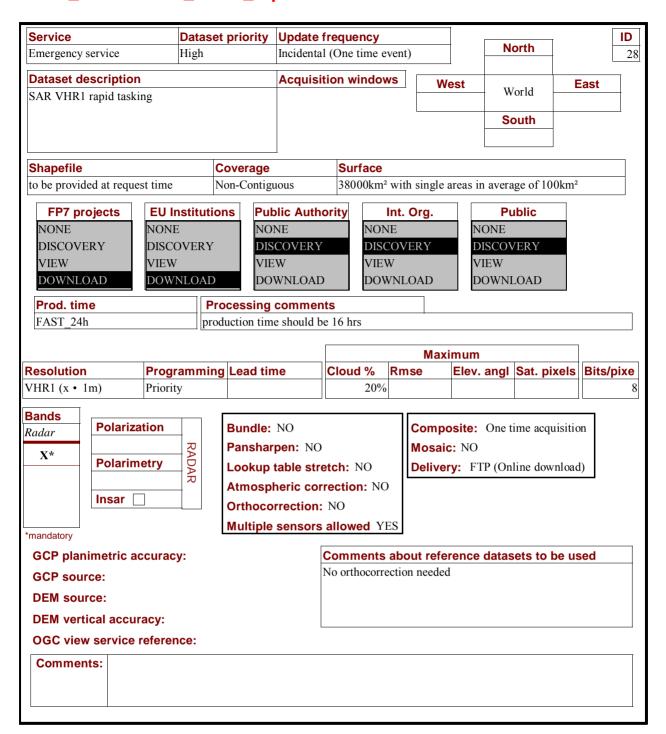
# ADD\_007a SAR\_VHR1\_archive\_rush

Service	Datas	et priority	Update f	requency							ID	Ī
Emergency service	High		Incidenta	(One time e	vent)			Nor	rth		3	1
Dataset description			Acquisi	ion window	vs	W	est			Eas	et	
SAR VHR1 rapid archive retri	eval					•	531	Wo	rld –		31	
								Sou	uth			
Shapefile		Coverage	1	Surface								
to be provided at request time		Non-Contigu	ious	27000km²	with	single a	areas in	average	e of 100	km²		
FP7 projects  NONE DISCOVERY VIEW DOWNLOAD  EU III NONI DISCOVERY DISCOVERY DOWNLOAD	OVERY NLOAI	ions Pub NON DISC VIE DOV	olic Authone NE COVERY W WNLOAD	NON DISC VIEW DOW	Int. C IE COVE	Org.	NO DI VI	Pub ONE SCOVE IEW OWNLO	olic ERY			
Prod. time ARCH RUSH		Processing of roduction time										
/MCH_ROSH		oddetion time	e should b	C 1.3 III3								
		mum	- 1-				7					
ResolutionProgramVHR1 (x • 1m)Archiv		ng Lead tim	16	Cloud % 20%	Rms	se	Elev.	angl S	Sat. pix	els E	Bits/pixe	-
Bands Radar  X*  Polarization  Polarimetry  Insar	rrection:	etch: NO rection: NO	֓֞֜֜֜֜֜֜֜֜֜֓֓֓֓֓֓֜֜֟֜֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֜֜֜֓֓֡֓֜֜֡֓֓֡֓֜֜֡֓֡֓֜֡֓֜	Mosaid	: NO		ne acqui					
*mandatory		manapis	501100.0	unonou	35							
GCP planimetric accurac	y:		-	Comments				datase	ts to b	e use	d	
GCP source:			1	No orthocorre	ection	needed						
DEM source:												
<b>DEM</b> vertical accuracy:			L									
OGC view service referen	nce:											
Comments:												

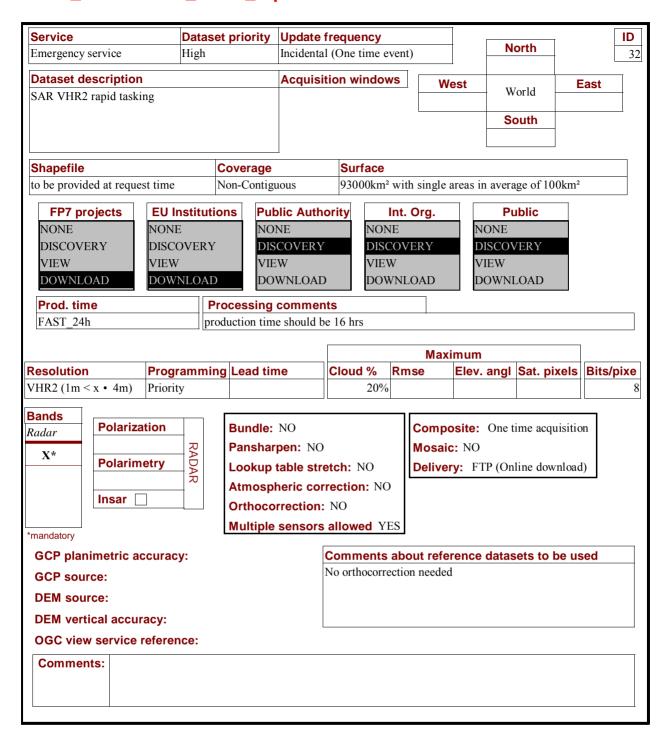
# ADD\_007b SAR\_VHR2\_archive\_rush

Service		Datas	et priority	Update f	requency					ſ		ID
Emergency service	ŀ	High		Incidental	(One time event)	)		No	orth			27
Dataset description				Acquisit	ion windows	We	<b></b>				ast	
SAR VHR2 rapid archi		val				VVE	<b>;</b> 51	W	orld		ası	_
								So	uth			
01 61			0	<u></u>	0					1		_
Shapefile to be provided at reque	st time		Coverage Non-Contig	110118	Surface 79000km² with	single a	reas in	avera	re of 10	0km²		$\dashv$
						i siligic a	ir cas iii			OKIII		
FP7 projects	EU Ins	stituti		olic Autho		Org.	2.7		blic			
NONE DISCOVERY	NONE DISCO	VEDV		NE COVERY	NONE DISCOVI	EDV		ONE ISCOV	EDV			
VIEW	VIEW	V LIX I	VIE		VIEW		_	IEW	LICI			
DOWNLOAD	DOWN	LOAI		WNLOAD	DOWNLO	OAD		OWNL	OAD			
Prod. time		Р	rocessing	commen	ts							
ARCH_RUSH		$\rightarrow$	oduction tim									
Resolution	Drogra	mmi	ng Lead tir	20	Cloud % Rm	Maxi	mum Elev.	anal	Sat. pi	volc	Bits/	nivo
VHR2 (1m < x • 4m)	Archive		ng Leau tii	ile	20%	<b>SE</b>	Elev.	angi	Sat. pi	xeis	DILS/	pixe
Bands Radar Polariza	tion		Bundle:	NO		Compo	site:	One ti	me acq	uisitio	n	
		₽.	Panshai	pen: NO		Mosaic						
X* Polarim	etry	RADAR	Lookup	table stre	etch: NO	Deliver	y: FT	P (Onl	ine dow	nload	)	
	_	D	Atmosp	heric cor	rection: NO							
Insar			Orthoco	rrection:	NO							
*mandatory			Multiple	sensors	allowed YES							
GCP planimetric ac	curacy			Ī	Comments abo	ut refer	ence	datas	ets to	he iis	ed	
GCP source:	our acy			H	No orthocorrection			uutuo			-	
DEM source:												
DEM vertical accur	acv.											
OGC view service	•	e:		L								
Comments:	3.0.010											
Comments.												

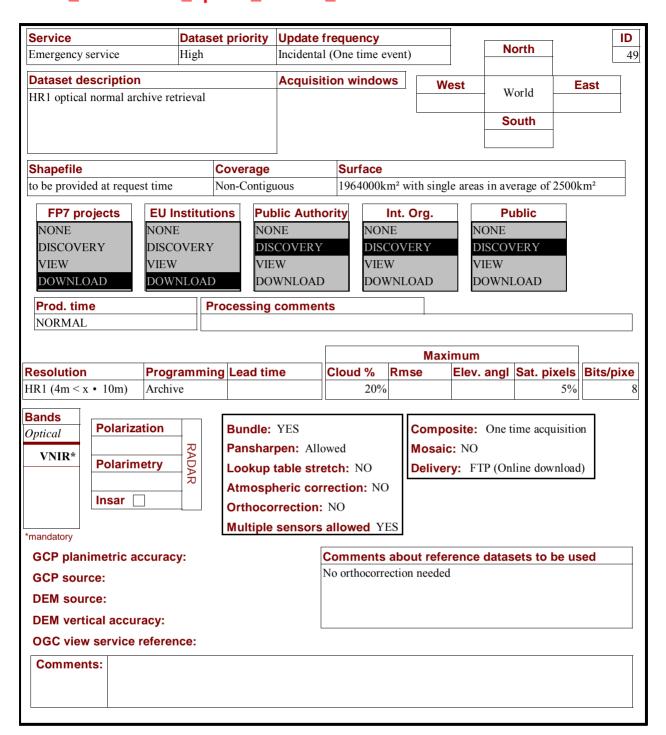
# ADD\_008a SAR\_VHR1\_rapid



# ADD\_008b SAR\_VHR2\_rapid



# ADD\_009a HR1\_optical\_archive\_standard



# ADD\_009b HR2\_optical\_archive\_standard

Occurences

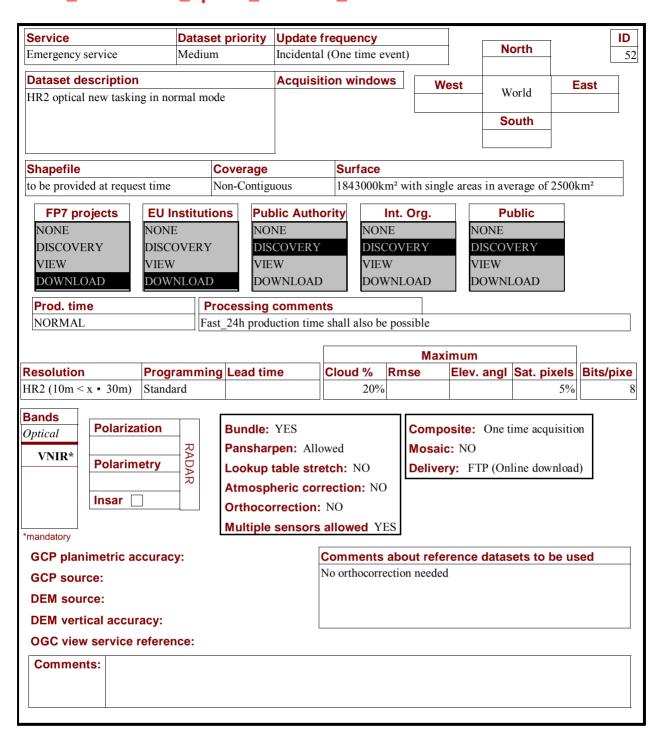
Service	Datas	et priority	Update f	requency							ID
Emergency service	Mediu	m	Incidental	(One time ev	ent)			No	orth		50
Dataset description	•		Acquisit	ion window	s	W	est	***	1.1	E	ast
HR2 optical normal archive re-	trieval							W	orld		
								So	uth		<del></del>
Shapefile		Coverage		Surface							
to be provided at request time		Non-Contigu	ious	533000km <sup>2</sup>	with	n single	areas i	n aver	age of 2	500kn	1 <sup>2</sup>
FP7 projects EU II	nstituti	ions Pub	olic Autho	rity lı	nt. O	)ra.		Pu	blic		
NONE NONE		NO:		NONI		. 9.	NO	ONE			
DISCOVERY	OVERY	DIS	COVERY	DISC	OVE	RY	DI	SCOV	ERY		
VIEW		VIE		VIEW				EW			
DOWNLOAD	NLOAI	DO	WNLOAD	DOW	NLO	)AD	DO	OWNL	OAD		
Prod. time	P	rocessing	commen	s							
NORMAL											
						Maxi	mum				
Resolution Progr	ammi	ng Lead tin	ne	Cloud %	Rms	e	Elev.	angl	Sat. pi	xels	Bits/pixe
HR2 (10m < x • 30m) Archiv	/e			20%						5%	8
Bands					$\neg$						$\neg$
Optical Polarization	_	Bundle:				Compo	site:	One ti	me acqu	isitio	ı
VNIR*	RAI		pen: Allo		11	Mosaid					
Polarimetry	RADAR	_	table stre			Deliver	<b>y:</b> FT	P (Onl	ine dow	nload	)
Insar 🗆	- 1			ection: NO							
III3di			rrection:								
*mandatory		Multiple	sensors	allowed YE	S						
GCP planimetric accurac	y:		(	Comments a	abou	ıt refe	rence (	datas	ets to l	oe us	ed
GCP source:			1	No orthocorrec	ction	needed					
DEM source:											
DEM vertical accuracy:											
OGC view service referer	ice:										
Comments:											

# ADD\_010a HR1\_optical\_standard\_new

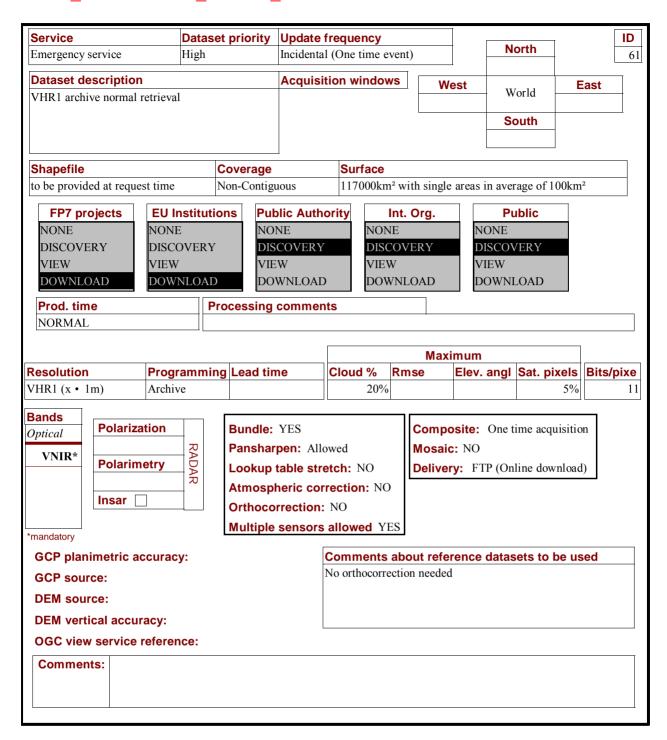
Occurences

Service	Datas	et priority	Update f	requency		· . [		Т	ID
Emergency service	High		Incidental	(One time event)	)		North		51
Dataset description			Acquisit	ion windows	We	204		E	ast
HR1 optical new tasking in no	rmal m	ode	4		vve	est	World	E	ist
							South		
		I_	1						
Shapefile to be provided at request time		Coverage Non-Contigu	10116	Surface 684000km² wit	th single	orene i	n average of	25001cm	2
		Non-Contigu	10us	084000KIII WII	iii siligie	areas r	ii average or 2	JOOKIII	
	stitut		lic Autho		Org.	_	Public		
NONE NONE		NO		NONE	FDV		ONE		
DISCOVERY DISCOVIEW VIEW	OVERY	VIE	COVERY	DISCOVI	EKY		SCOVERY EW		
	NLOAI		WNLOAD	DOWNLO	OAD		DWNLOAD		
Prod. time		rocessing	commont						
NORMAL	-	rocessing	Comment						
	1		Г						
				<b>.</b>	Maxii				
Resolution Progr HR1 (4m < x • 10m) Standa		ng Lead tin	ne	Cloud % Rm:	se	Elev.	angl Sat. p	5%	Bits/pixe 8
THET (4HI × X * TOHI) Stands	ii u			2070				370	0
Bands Polarization		Bundle:	YES		Compo	site:	One time acq	uisition	
Optical	رج		pen: Allo		Mosaic				
VNIR* Polarimetry	RADAR		table stre		Deliver	v: FT	P (Online dov	vnload)	
	מ	-		ection: NO	•				
Insar		Orthoco	rrection:	NO					
<u> </u>		Multiple	sensors	allowed YES					
*mandatory				Name and a land				h	al l
GCP planimetric accurac	y:		H-	Comments abo  No orthocorrection			datasets to	be use	<b>2</b> 0
GCP source:			Î						
DEM source:									
DEM vertical accuracy:									
OGC view service referer	ice:								
Comments:									

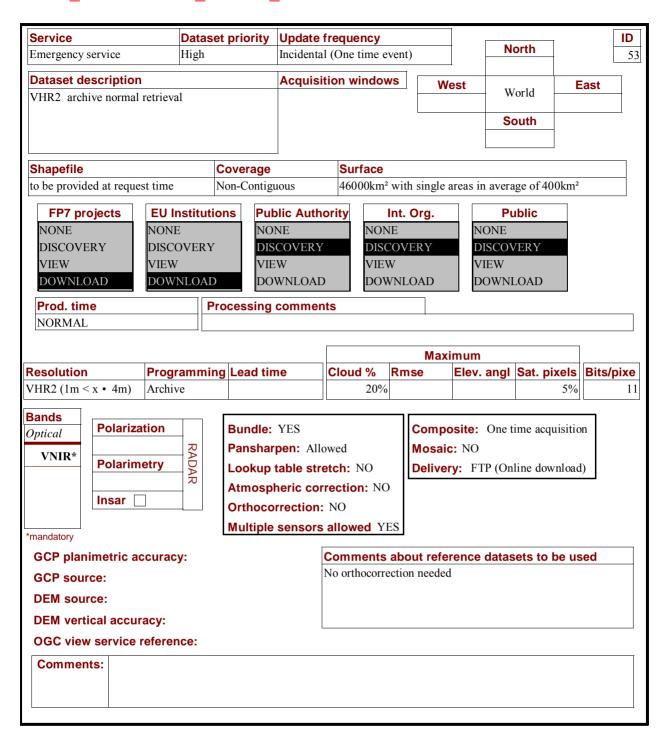
# ADD\_010b HR2\_optical\_standard\_new



# ADD 011a VHR1 archive standard



# ADD 011b VHR2 archive standard



# ADD\_012a VHR1\_optical\_standard\_new

Occurences <sub>Y</sub>

Service	Datas	et priority	Update f	requency						ID
Emergency service	High		Incidental	(One time event)	)		Nort	h		62
Dataset description			Acquisit	ion windows	We	t			East	$\neg$
VHR1 optical new tasking in	normal	mode			vve	est	Worl	d	East	-
							Sout	h		
Chanafila		C	1	Conford						
Shapefile to be provided at request time		Coverage Non-Contigu	10118	Surface 64000km² with	single a	reas in	average	of 100kn	n <sup>2</sup>	$\dashv$
					i siligic a	icas in			1	
	nstitut		olic Autho		Org.	2.1	Publi	ic		
NONE NON DISCOVERY DISC	E OVERY	NO]	COVERY	NONE DISCOVE	FDV		ONE SCOVER	V		
VIEW VIEW		VIE		VIEW	LIXI		EW	<b>\ 1</b>		
	NLOAI		WNLOAD	DOWNLO	OAD		OWNLO	AD		
Prod. time	T F	Processing	commen	ts						
NORMAL										
Resolution Prod	rommi	ng Lead tin	20	Cloud % Rms	Maxii	mum Elev.	onal Ca	ıt. pixel	Dito	/pixe
VHR1 (x • 1m) Stand		ng Leau un	ile	20%	Se	Elev.	anyı Sa	1 <b>t. pixe</b> i	<del></del>	11
									1	
Bands Optical Polarization		Bundle:	YES		Compo	site:	One time	e acquisit	ion	
	₽.	Panshar	pen: Allo		Mosaic			•		
VNIR* Polarimetry	RADAR	Lookup	table stre	tch: NO	Delivery	y: FT	P (Online	e downlo	ad)	
	D	Atmospl	heric cori	ection: NO						
Insar		Orthoco	rrection:	NO						
*mandatory		Multiple	sensors	allowed YES						
GCP planimetric accura	21/-		(	Comments abo	ut refer	anca	datacoto	s to bo	isad	
GCP source:	<b>-у.</b>		-	No orthocorrection		CIICC	uatasets	s to be	useu	
DEM source:										
DEM source.  DEM vertical accuracy:										
•			L							
OGC view service refere	nce:									
Comments:										

# ADD\_012b VHR2\_optical\_standard\_new

Occurences <sub>Y</sub>

Service	Datas	et priority	Update f	requency			Ī		_	:		ID
Emergency service	High		Incidental	(One time ev	rent)			No	orth			54
Dataset description			Acquisit	ion window	S	W	est			F	ast	
VHR2 optical rapid tasking;						•••	COL	W	orld	_	ust	
								So	uth			
Shapefile		Coverage	_1	Surface								
to be provided at request time		Non-Contigu	uous	488000km²	with	single	areas i	n aver	age of 1	00km²	2	
FP7 projects EU II	nstitut	iono Duk	olic Autho	mids.		-		D.,	blic			
NONE NONE		NO:		NONI	nt. O E	rg.	N(	ONE	DIIC			
	- OVERY		COVERY	DISC		RY		SCOV	ERY			
VIEW		VIE	W	VIEW	I		VI	EW				
DOWNLOAD	NLOAI	DO.	WNLOAD	DOW	NLO.	AD	DO	OWNL	OAD			
Prod. time	F	Processing	commen	S								
NORMAL												
			[			Mayi	imum					
Resolution Progr	ammi	ng Lead tin	ne	Cloud %	Rms		Elev.	angl	Sat. pi	xels	Bits/p	oixe
	13 11 3									5%		11
Bands					<b>—</b> —							
Optical Polarization	1	Bundle:	YES		С	ompo	osite:	One ti	me acqu	isitio	n	
VNIR*	RA	Panshar	pen: Allo	wed	N	losaid	: NO					
Polarimetry	RADAR	-	table stre		D	eliver	<b>'y:</b> FT	P (Onl	ine dow	nload	)	
Insar	- ~			ection: NO								
modi _			rrection:									
*mandatory		Multiple	sensors	allowed YE	S							
GCP planimetric accurac	y:		(	Comments a	abou	t refe	rence (	datas	ets to l	oe us	ed	
GCP source:			1	No orthocorrec	ction	needed	l					
DEM source:												
DEM vertical accuracy:												
OGC view service referer	nce:											1
Comments:												

# ADD\_013a SAR\_HR1\_archive\_standard

Occurences

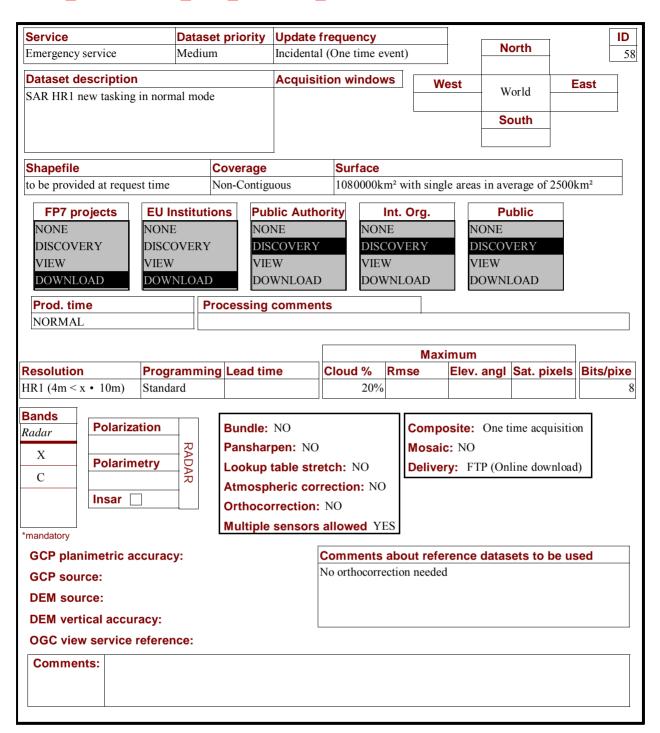
Service	Datas	et priority	Update f	requency							ID
Emergency service	High			(One time ev	ent)			No	rth		56
Dataset description			Acquisit	ion window	S	W	est			E	ast
SAR HR1 normal archive retri	eval							Wo	orld		401
								So	uth		
Shapefile		Coverage	1	Surface							
to be provided at request time		Non-Contigu	ious	739000km²	witl	h single	areas i	n avera	age of 2	500kn	n²
NONE DISCOVERY VIEW DOWNLOAD DOW	OVERY	NOI DIS VIE DO'	COVERY W WNLOAD	NONI DISC VIEW DOW	OVE /	ERY	DI VI	Pul ONE SCOV IEW OWNL			
Prod. time NORMAL	P	rocessing	commen	ts							
TVORWIT IL											
							mum				
Resolution Progr HR1 (4m < x • 10m) Archiv		ng Lead tin	ne	Cloud %   20%	Rms	se	Elev.	angl	Sat. pi	xels	Bits/pixe 8
Bands Radar  X Polarization Polarimetry C Insar	RADAR	Atmosph Orthoco	pen: NO table stre neric corr rrection:	tch: NO	יו	Compo Mosaid Deliver	: NO				n
*mandatory		wuitiple	Selisors	allowed IE	S						
GCP planimetric accurac	y:		-	Comments a				datase	ets to I	oe us	ed
GCP source:				No orthocorrec	etion	needed					
DEM source:											
<b>DEM</b> vertical accuracy:											
OGC view service referer	ice:										
Comments:											

# ADD\_013b SAR\_HR2\_archive\_standard

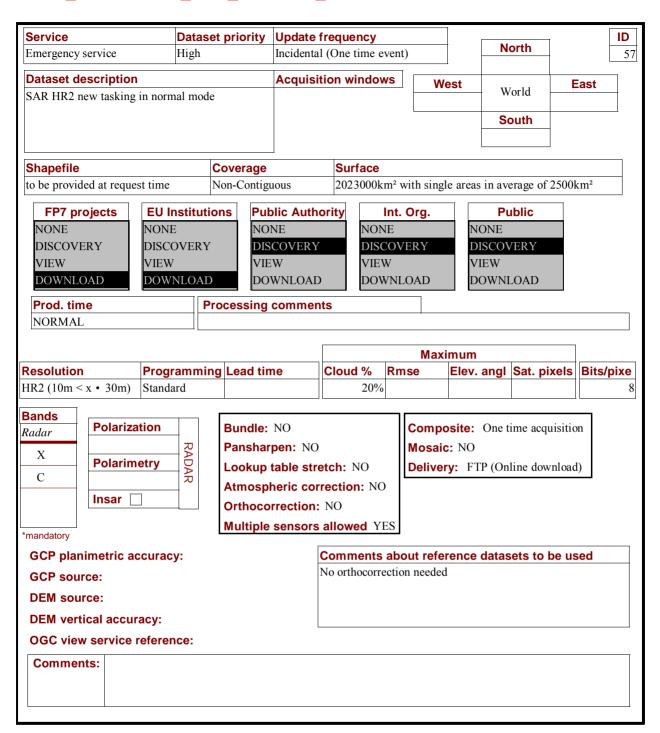
Occurences x

Service	Datas	et priority	Update f	requency						Ī	ID
Emergency service	High		Incidental	(One time eve	ent)			No	orth		55
Dataset description SAR HR2 archive normal retr	ieval		Acquisit	on windows	S	W	est	W	orld	Е	ast
								So	outh		
Shapefile		Coverage		Surface							
to be provided at request time		Non-Contigu	ious	123000km <sup>2</sup>	with	n single	areas i	n aver	age of 2	500kn	l <sup>2</sup>
NONE DISCOVERY VIEW DOWNLOAD DOW	OVERY NLOAI	NOI DIS VIE DO'	COVERY W WNLOAD	NONE DISCO VIEW DOWN	OVE	RY	DI VI	Pu ONE ISCOV IEW OWNI			
Prod. time	F	rocessing	comment	S							
NORMAL											
						Maxi	mum				
Resolution Progr	ammi	ng Lead tin	ne		Rms	e	Elev.	angl	Sat. pi	xels	Bits/pixe
HR2 $(10m < x \cdot 30m)$ Standa	ırd			20%							8
Bands Radar  X Polarization  Polarimetry  C Insar	RADAR	Lookup Atmospl	pen: NO table stre	ection: NO	N	/losaid	: NO		me acqu		
*mandatory		Multiple	sensors	allowed YES	S						
GCP planimetric accurace GCP source: DEM source: DEM vertical accuracy:	y:			Comments a  Jo orthocorrec				datas	ets to I	be us	ed
OGC view service referer	ice:										
Comments:											

#### ADD\_014a SAR\_HR1\_standard\_new



#### ADD\_014b SAR\_HR2\_standard\_new

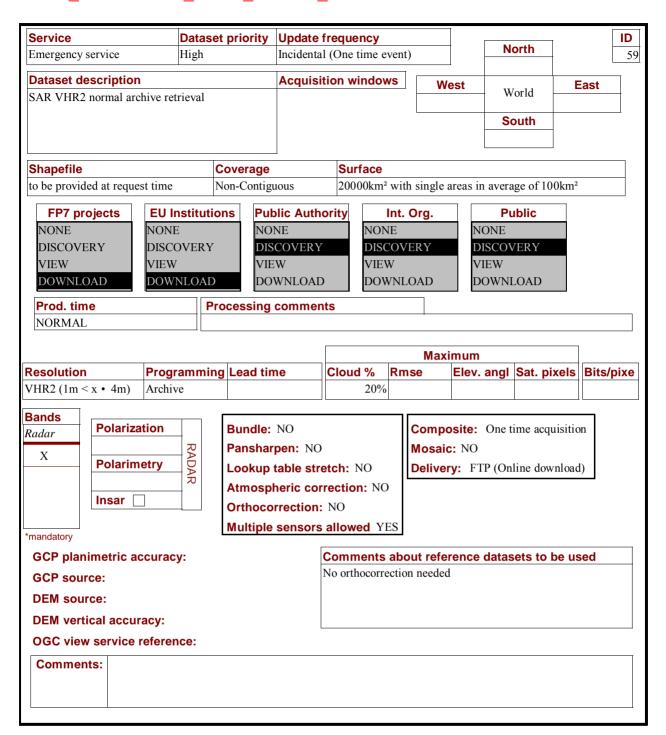


# ADD\_015a SAR\_VHR1\_archive\_standard

Occurences

Service	Datas	et priority	Update fi	equency								ID
Emergency service	High		Incidental	(One time ev	ent)			No	rth			63
Dataset description SAR VHR1 normal arch	nive retrieval		Acquisiti	on window	S	W	est	Wo	orld	E	ast	
								So	uth			
Shapefile		Coverage		Surface								
to be provided at reques	t time	Non-Contigu	uous	10000km² v	with	single a	areas in	averag	ge of 10	0km²		
FP7 projects  NONE DISCOVERY VIEW DOWNLOAD  Prod. time	EU Instituti NONE DISCOVERY VIEW DOWNLOAD	NOI DIS VIE	COVERY CW WNLOAD	NONI DISC VIEW DOW	OVE.	RY	DI VI	Pul ONE ISCOVI IEW OWNL				
NORMAL	•	roccomig	001111110111									
						Maxi	mum					
Resolution	Programmi	ng Lead tin	ne	Cloud %	Rms	e	Elev.	angl	Sat. pi	xels	Bits/	pixe
VHR1 (x • 1m)	Archive			20%								
Bands Radar X Polarizat	RA	Lookup	pen: NO	tch: NO	N	/losaid	: NO		ne acqu			
Insar		Orthoco	rrection:	NO								
* 1.		Multiple	sensors a	allowed YE	S							
*mandatory  GCP planimetric acc	curacy:		C	omments a	abou	ıt refe	rence	datase	ets to I	oe us	ed	
GCP source:			N	lo orthocorrec	ction	needed						
DEM source:												
DEM vertical accura	acv:											
OGC view service re	•											
Comments:												

#### ADD 015b SAR VHR2 archive standard



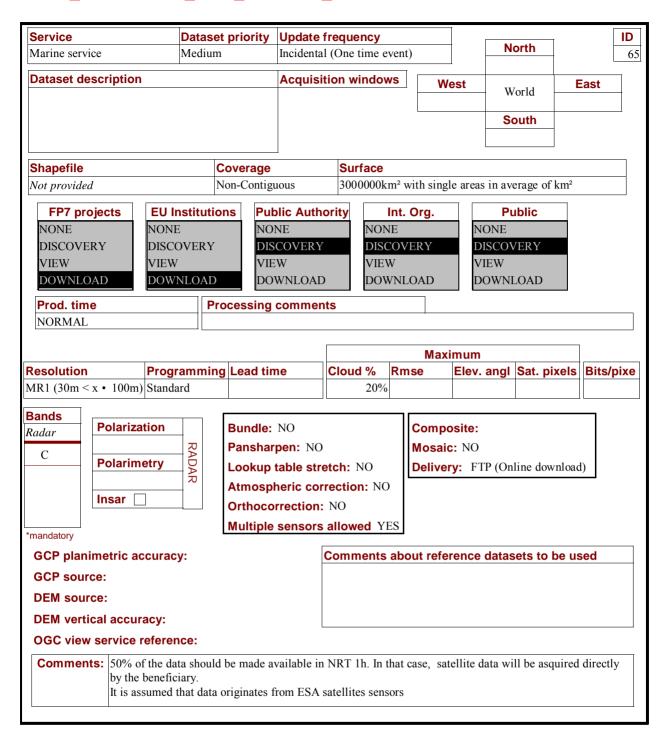
## ADD\_016a SAR\_VHR1\_standard\_new

Service	Datas	et priority	Update f	requency								ID
Emergency service	High			(One time ev	ent)			No	rth			60
Dataset description	1		Acquisit	ion window	/S	W	est			F	ast	
SAR VHR1 new tasking in nor	mal mo	ode				-		Wo	orld	_	ust	
								So	uth			
Shapefile		Coverage	1	Surface								7
to be provided at request time		Non-Contigu	ious	31000km <sup>2</sup>	with	single a	areas in	averag	ge of 10	0km²		1
NONE DISCOVERY VIEW DOWNLOAD DOW	OVERY	NOI DIS VIE	COVERY	NON DISC VIEW DOW	OVE V	ERY	DI VI	Pul ONE ISCOV IEW OWNL				_
Prod. time	P	rocessing	commen	s								
NORMAL												
						Maxi	mum					
	ammi	ng Lead tim	ne	Cloud %	Rms	se	Elev.	angl	Sat. pi	xels	Bits/pi	хe
VHR1 (x • 1m) Standa	ırd			20%								8
Radar  X  Polarization  Polarimetry  Insar	RADAR	Atmosph	pen: NO table stre neric corr rrection:	ection: NO	יו	Compo Mosaio Deliver	: NO					
*mandatory		wuitipie	56115015	allowed 11	20							
GCP planimetric accurac	y:		-	Comments				datase	ets to I	oe us	ed	
GCP source:			]	No orthocorre	ction	needed						
DEM source:												
<b>DEM</b> vertical accuracy:												
OGC view service referer	ice:											
Comments:												

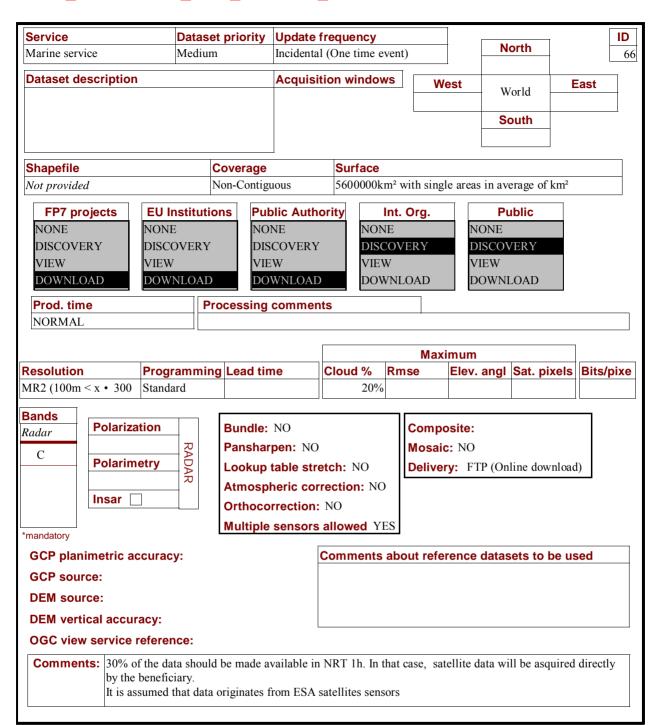
# ADD\_016b SAR\_VHR2\_standard\_new

Service	Datas	et priority	Update f	requency							ID
Emergency service	High		Incidental	(One time ev	ent)			No	orth		64
Dataset description SAR VHR2 new tasking in nor	mal mo	ode	Acquisit	ion window	S	W	est	W	orld	Е	ast
								Sc	outh		
Shapefile		Coverage		Surface							
to be provided at request time		Non-Contigu	ious	202000km <sup>2</sup>	with	n single	areas i	n aver	age of 1	00km²	:
NONE NONE DISCOVERY VIEW VIEW	OVERY NLOAI	NOI DIS VIE DO'	COVERY W WNLOAD	NONI DISC VIEW DOW	OVE	RY	DI VI	Pu ONE ISCOV IEW OWNL			
Prod. time	P	rocessing	commen	s							
NORMAL											
						Maxi	mum				
Resolution Progr	ammi	ng Lead tin	ne	Cloud %	Rms	e	Elev.	angl	Sat. pi	xels	Bits/pixe
VHR2 $(1m < x \cdot 4m)$ Standa	ırd			20%							8
Bands Radar  X Polarization  Polarimetry  Insar	RADAR	Lookup f	pen: NO table stre	ection: NO	N	Mosaid	: NO		ime acqu		
		Multiple	sensors	allowed YE	S						
*mandatory		manapie									
GCP planimetric accurac	y:			Comments a				datas	ets to l	oe us	ed
GCP source:				10 or mocorrec	, t1011	necucu					
DEM source:											
DEM vertical accuracy:											
OGC view service referer	ice:										
Comments:											

#### ADD\_017a SAR\_MR1\_standard\_new



#### ADD\_017b SAR\_MR2\_standard\_new



# ADD\_018a Optical\_MR1\_Standard\_new

Service	Datas	et priority	Update fr	equency					ID
Marine service	Low		Incidental (	One time event)		No	orth		67
Dataset description			Acquisitio	on windows	Wes	4		Eas	•
•					wes	W	orld	Eas	
						Sc	outh		
Shapefile		Coverage		Surface					
Not provided		Coverage		0km <sup>2</sup>					
-									
	stituti		olic Author		Org.		ıblic		
NONE NONE DISCOVERY DISCO	OVERY	NOI DIS	NE COVERY	NONE DISCOVE	FRV	NONE DISCOV	/FRV		
VIEW VIEW		VIE		VIEW		VIEW	LICI		
DOWNLOAD	NLOAD	DO	WNLOAD	DOWNLO	DAD	DOWNI	LOAD		
Prod. time	Р	rocessing	comments	<u> </u>				<u>—</u>	
NORMAL					+				
			Г						
Resolution Progr	ammir	ng Lead tin	ne C	Cloud % Rms	Maxim		Sat. pix	rels Ri	its/pixe
MR1 (30m < x • 100m) Standa		ig Loud till		20%	<u> </u>	iovi ungi	out. pi	CIO DI	torpixo
Bands									
Optical Polarization		Bundle:	NO		Composi	ite:			
VNIR	₽	Panshar	pen: NO	ll i	Mosaic:	NO			
Polarimetry	RADAR	Lookup	table stret	ch: NO	Delivery:	FTP (On	line dow	nload)	
	10	Atmosph	heric corre	ection: NO					
Insar		Orthoco	rrection: N	NO					
*mandatory		Multiple	sensors a	llowed YES					
GCP planimetric accuracy	y:		C	omments abo	ut refere	nce datas	ets to b	e used	
GCP source:									
DEM source:									
DEM vertical accuracy:									
OGC view service referen	ce:								
Comments:									

# ADD\_018b Optical\_MR2\_Standard\_new

Occurences x'

Service	Datas	et priority	Update	frequency				ID
Emergency service	Mediu	m	Incidenta	l (One time event	t)	N	orth	68
Dataset description			Acquisi	tion windows	We		/orld	East
Shapefile		Coverage		Surface				
Not provided				23000km <sup>2</sup>				
FP7 projects  NONE DISCOVERY VIEW DOWNLOAD	EU Instituti NONE DISCOVERY VIEW DOWNLOAD	NOI DIS VIE DO	COVERY W WNLOAD	NONE DISCOV VIEW DOWNI		NONE DISCO VIEW DOWN		
Prod. time	Р	rocessing	commen	its				
NORMAL								
					Maxi	mum		
Resolution	Programmii	ng Lead tin	ne	Cloud % Rm	rse	Elev. angl	Sat. pixels	Bits/pixe
MR2 $(100m < x \cdot 300)$	Standard			20%				
Polarizat  VNIR  Polarime  Insar	etry RADAR	Atmosph Orthoco	pen: NO table stro heric cor rrection:	etch: NO rection: NO	Compo Mosaid Deliver	: NO	iline downloa	d)
*mandatory		Wattiple	30113013	anowed 1L5				
GCP planimetric ac GCP source:	curacy:			Comments abo	out refei	rence datas	sets to be u	sed
DEM source:								
DEM vertical accura	асу:							
OGC view service r	eference:		L					
Comments:								

## ADD\_019a SAR\_MR1\_archive\_standard

Service	Datas	et priority	Update	frequency							ID
	Low			l (One time ev	vent)			No	orth		69
Dataset description			Acquisi	tion window	/S	W	est			F	ast
								W	orld		401
								Sc	outh		1
Shapefile		Coverage		Surface							
Not provided				0km²							
NONE DISCOVERY VIEW DOWNLOAD DOWN	OVERY NLOAI	NOI DIS VIE DO'	COVERY W WNLOAD	NON DISC VIEV DOW	OVE V	ERY	DI VI	Pu ONE ISCOV IEW OWNI			
Prod. time	P	rocessing	commen	ts							
NORMAL	_										
						Maxi	mum				
		ng Lead tin	ne		Rms	se	Elev.	angl	Sat. pi	xels	Bits/pixe
$MR1 (30m < x \cdot 100m) Standa$	rd			20%							
Polarization  VNIR  Polarimetry  Insar	RADAR	Atmospl Orthoco	pen: NO table stre neric cor rrection:		יו	Compo Mosaid Deliver	: NO	P (On	line dow	nload	
*mandatory		Multiple	sensors	allowed YE	ES						
GCP planimetric accurac	y:			Comments	abou	ut refe	rence	datas	ets to l	be us	ed
GCP source:											
DEM source:											
<b>DEM</b> vertical accuracy:											
OGC view service referer	ce:										
Comments:											

## ADD\_019b SAR\_MR2\_archive\_standard

Occurences Y

Service	Datas	et priority	Update f	requency					ID
Marine service	Mediu	m	Incidental	(One time ever	nt)		North		70
Dataset description			Acquisit	on windows	V	/est	World South	E	East
Shapefile		Coverage	1	Surface					
Not provided		Non-Contigu	ious	1600000km²	with sin	gle areas	in average	of km²	
NONE N DISCOVERY D VIEW V	EU Instituti NONE DISCOVERY VIEW DOWNLOAD	NOI DIS VIE	COVERY W WNLOAD	NONE DISCO VIEW DOWN		D. V.	Public ONE ISCOVERY IEW OWNLOAD		
					May	cimum			ı
Resolution P	rogrammiı	ng Lead tin	ne	Cloud % R	mse	Elev.	angl Sat.	pixels	Bits/pixe
MR2 (100m < x • 300 A	rchive			20%				•	
Bands Radar  C  Polarization  Polarimetric  Insar	RA	Atmospi Orthoco	pen: NO table stre neric corr rrection:	ection: NO NO	Mosa Delive	oosite: ic: NO ery: FT	P (Online d	ownload	1)
*mandatory		Multiple	sensors	allowed YES	_				
GCP planimetric according GCP source:  DEM source:  DEM vertical accurace	•		C	Comments al	oout ref	erence	datasets t	o be us	sed
OGC view service ref	ference:								<del></del>
Comments:									

## ADD\_020a Optical\_MR1\_archive\_Standard

Occurences

Service		Dat	ase	t priority	Update	freque	ency					ī		ID
		Low			Incidenta	l (One	time event	)		No	orth			71
Dataset des	scription				Acauisi	tion w	vindows	10/	est			E	201	$\neg$
								VV	est			E	ast	-
										So	uth			
												-		
					<u> </u>									_
Shapefile Not provided	1		C	Coverage		Okn	rface							_
Noi proviaea	! 					UKI	.11							
FP7 pro	jects	EU Instit	utio	_	lic Auth	ority		Org.	_		blic			
NONE	DX	NONE	337	NOI			NONE	FDV		ONE	FDM			
DISCOVEI VIEW	KY	DISCOVE VIEW	ΧY	VIE	COVERY W		DISCOV VIEW	EKY		ISCOV IEW	EKY			
DOWNLO.	AD	DOWNLO	AD		'' WNLOAD	)	DOWNL	OAD		OWNL	OAD			
Prod. time	<u> </u>		Pr	ocessing	commen	ite								
NORMAL				occomig										
<u></u>		<u>'</u>												
D 1.0		_				01	10/ D		mum		<b>.</b> .		D:/ /	. 1
Resolution MR1 (30m <	v • 100m)		nınç	g Lead tim	1e	Clou	d % Rm	se	Elev.	angi	Sat. pi	xels	Bits/ <sub> </sub>	oixe
WIKT (50III <	X * 100III)	Standard					2070							
Bands	Polariza	tion	]	Bundle:	NO			Compo	seita:					
Optical	T Graniza			Panshar				Mosaid						
VNIR	Polarime	etry RADAR		Lookup			NO	Deliver		P (Onl	ine dow	/nload)		
		Ŕ		Atmosph					<b>y</b>	( )				
	Insar	]		Orthoco										
				Multiple	sensors	allow	ed YES							
*mandatory					Γ									
GCP plani		curacy:			-	Comn	nents abo	out rete	rence	aatas	ets to	be use	∌a	-
GCP source														
DEM source														
DEM vertic		•												
OGC view		eterence:												
Comment	is:													

# ADD\_020b Optical\_MR2\_archive\_Standard

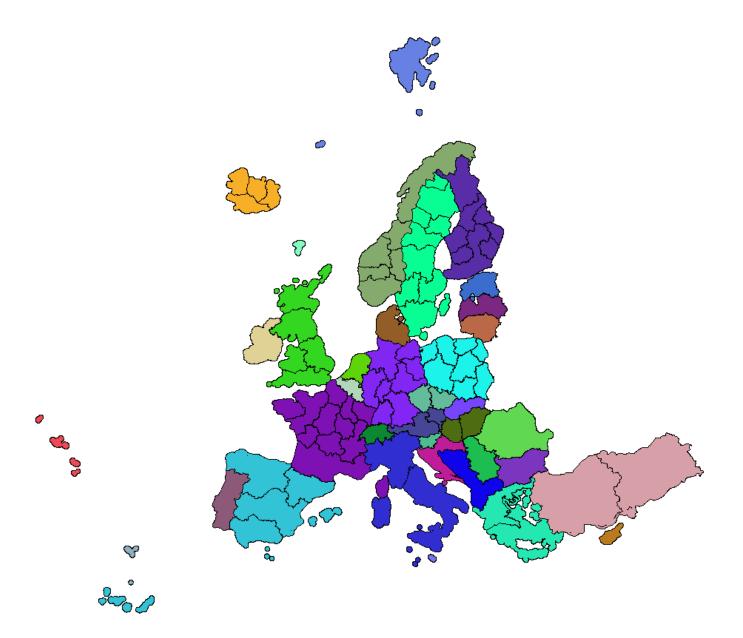
Occurences x

Service	Datas	et priority	Update	frequency						ī		ID
	Low		Incidenta	l (One time ev	ent)			No	orth			72
Dataset description			Acquisi	tion window	e					_		_
Dataset aescription	!		Acquisi	tion window	<u> </u>	We	est	1		Е	ast	
					L			0				
								50	outh			
Shapefile		Coverage		Surface								
Not provided				0km²								
FP7 projects	EU Institut	ions Pub	olic Autho	ority lı	nt. Oı	ra		Pı	ıblic			
NONE	NONE	NO:		NONI		· <del>y</del> ·	N	ONE				
DISCOVERY	DISCOVERY		COVERY			RY	_	ISCOV	ERY			
VIEW	VIEW	VIE	W	VIEW	7		V]	IEW				
DOWNLOAD	DOWNLOAI	DO	WNLOAD	DOW	NLOA	AD	D	OWNI	LOAD			
Prod. time	F	rocessing	commen	ts		7						
NORMAL												
<b>5</b> :				01 10/			mum		0		D:: /	
Resolution ()	Programmi Standard	ng Lead tin	ne	Cloud % I	Rmse	9	Elev.	angı	Sat. pi	xeis	Bits/	pixe
0	Standard			2070								
Bands Polariza	ition	Bundle:	NO			ompo	seito:					
Optical			pen: NO			losaic						
VNIR	etry RADAR		=	etch: NO	11			P (On	line dow	mload	,	
	AR			rection: NO		CIIVEI	<b>y.</b> 11	1 (011	inc dow	moau	<u>′</u>	
Insar		1	rrection:									
				allowed YE	S							
*mandatory		wuitiple	36113013	allowed 1E	.5							
GCP planimetric ad	ccuracy:			Comments a	about	t refei	rence	datas	ets to l	be us	ed	
GCP source:												
DEM source:												
DEM vertical accur	acv:											
OGC view service	•		L									1
Comments:												
Comments:												

#### Annex 3. DEFINITIONS

- (1) <u>Primary Product:</u> shall mean any original Spatial data set originating from a GMES Contributing Mission Entity (GCME) and provided by ESA/GCME to the beneficiary. A Primary Product is understood to include spacecraft and instrument data and is a mono-mission Level 1 or Level 2 (with exceptional provision of higher-level products such as mono-mission Level 3 on a case-by-case basis).
- (2) <u>Altered Product:</u> Products derived from Primary products retaining an existing clear correlation to the original sensor pixel information. Examples: histogram stretched images, orthorectified images, resampled and rescaled images, mosaics.
- (3) <u>Derivative works:</u> Products derived from Primary Products or Altered Products and which do not have a traceable correlation with the original sensor pixel information. Examples: land cover classifications, vegetation indexes.
- (4) <u>Metadata:</u> Information describing spatial data sets and spatial data services and making it possible to discover, inventory and use them. In the case of spatial data set, metadata may include a preview of the full dataset.
- (5) <u>EU Public tasks</u>: The development, implementation and monitoring of policies and related activities as defined by the EC Treaty and subsequent Community legislation.
- (6) <u>Spatial Data Sets, Spatial data and Spatial Data Services</u>: As defined in Directive 2007/2/EC of 14/3/2007.
- (7) Representation: A Representation (of a product) shall mean a raster (e.g. JPG or TIFF format) or PDF file of any *Primary or Altered Product* whose printout does not exceed A3 paper format with the exception of posters, which may be up to A0 format) and not containing more imagery than necessary to achieve respectable prints for non-commercial purposes
- (8) <u>Composite</u>: multi-scene or multi-image aggregation over the same scene/image. Usually used to remove clouds for optical sensors. Can be applied to different sensors, but is preferably based on the same sensor. A composite is multi-temporal (made of several scenes/images acquired at different dates).
- (9) <u>Mosaic:</u> multi-scene or multi-image aggregation to cover a larger area than a given scene/image. Can be applied to different sensors. A mosaic is generally mono temporal (or made of scenes/images collected within a given time period that can range from few days to season).

Annex 4. MAP OF "LARGE REGIONS" FOR CORE\_001



#### **Annex 5.** Core\_001: Complementary requirements

Geo-location accuracy:	Around 1/3 pixel	N	Map Scale:	1/50.000			
Delivery Mechanism:	On-line availability, Med	ia					
Spatial Arrangement	Contiguous/Coverage typ	oe					
Area of Interest (AoI)	39 European states, ~5.8 Croatia, Cyprus, Czech Hungary, Iceland, Irelan Liechtenstein, Lithuania, Republic of Macedonia Switzerland, Turkey, U Canary, Baleares, Greek French Overseas Territor	Republic , Dend , Italy, Koson , Luxembourg , Romania , Sonited Kingdon islands, Cors	enmark, Esto ovo under the g, Malta, Mos Serbia and M n [including a	nia, Finland, Fi UN Security Contenegro, Nether ontenegro, Slow Il islands of thos	nland, France, ouncil Resolution rlands, Norway vakia, Slovenia se countries, e.	Germany, Gre on 1244/99, La y, Poland, Por a, Spain, Swe g. Azores, Mac	eece , tvia , tugal den , deira,
Country temporal window (Coverage 1 & 2)	within following 39 narro from COV1, either upfr windows (if feasible at al	ont or after a	etual COV1	acquisition, CO	V2 preferably	still within na	
	Country	Code	Extended window: Start	Narrow window: Start	Narrow window: End	Extended window: End	
	Albania	AL	15-Jun	01-Jul	31-Jul	15-Aug	
	Austria West (<13°E)	AT_W	15-Jun	01-Jul	15-Aug	31-Aug	

Austria East (>13°E)	AT_E	15-Jun	15-Jun	15-Aug	15-Sep
Belgium	BE	01-Jun	15-Jun	15-Sep	15-Sep
Bosnia and Herzegovina	BA	01-Jun	15-Jun	15-Aug	15-Sep
Bulgaria	BG	01-Jun	15-Jun	15-Sep	15-Sep
Croatia	HR	01-Jun	15-Jun	15-Sep	15-Sep
Cyprus	CY	01-May	01-Jun	31-Jul	15-Aug
Czech Republic	CZ	01-Jun	15-Jun	15-Sep	15-Sep
Denmark	DK	05-Jun	15-Jun	15-Sep	15-Sep
Estonia	EE	05-Jun	15-Jun	15-Aug	31-Aug
Finland North	FI_N	20-Jun	01-Jul	10-Aug	15-Aug
Finland Central	FI_C	15-Jun	01-Jul	10-Aug	15-Aug
Finland South	FI_S	05-Jun	01-Jul	10-Aug	20-Aug
France North	FR_N	01-Jun	15-Jun	15-Sep	15-Sep
France South	FR_S	01-Jun	15-Jun	15-Sep	15-Sep
Germany	DE	01-Jun	15-Jun	15-Sep	15-Sep
Greece	GR	01-May	01-Jul	31-Jul	15-Aug
Hungary	HU	01-Jun	15-Jun	15-Sep	15-Sep
Iceland	IS	01-Jul	15-Jul	15-Sep	30-Sep
Ireland	IE	01-Jun	15-Jun	15-Sep	15-Sep
Italy North (> 41°N)	IT_N	15-Jun	15-Jun	15-Aug	15-Aug
Italy South (< 41°N)	IT_S	01-May	01-Jul	31-Jul	15-Aug
Kosovo	XK	01-Jun	15-Jun	31-Aug	15-Sep
Latvia	LV	05-Jun	15-Jun	15-Aug	31-Aug
Liechtenstein	LI	15-Jun	15-Jun	15-Aug	15-Sep
Lithuania	LT	05-Jun	15-Jun	15-Aug	31-Aug

Luxembourg	LU	01-Jun	15-Jun	15-Sep	15-Sep
Malta	MT	01-May	01-Jun	31-Jul	15-Aug
Macedonia (Republic of)	MK	01-Jun	15-Jun	31-Aug	15-Sep
Montenegro	ME	01-Jun	15-Jun	15-Aug	31-Aug
Netherlands	NL	01-Jun	15-Jun	15-Sep	15-Sep
Norway North (> 65°N)	NO_N	01-Jul	05-Jul	10-Aug	15-Aug
Norway South (< 65°N)	NO_S	01-Jul	05-Jul	10-Aug	31-Aug
Poland	PL	01-Jun	15-Jun	15-Sep	15-Sep
Portugal	PT	15-May	01-Jul	15-Aug	15-Aug
Romania	RO	01-Jun	15-Jun	15-Sep	15-Sep
Serbia	RS	01-Jun	15-Jun	15-Sep	15-Sep
Slovakia	SK	01-Jun	15-Jun	15-Sep	15-Sep
Slovenia	SI	15-Jun	15-Jun	15-Sep	15-Sep
Spain	ES	15-May	01-Jul	31-Jul	15-Aug
Sweden North (> 65°N)	SE_N	01-Jul	05-Jul	10-Aug	15-Aug
Sweden Central (61°N - 65° N)	SE_C	01-Jul	05-Jul	10-Aug	31-Aug
Sweden South (< 61°N)	SE_S	05-Jun	15-Jun	15-Aug	15-Sep
Switzerland	СН	15-Jun	01-Jul	15-Aug	31-Aug
Turkey West (< 30°E)	TR_W	15-May	01-Jul	31-Jul	15-Aug
Turkey Central-West (30°E - 35°E)	TR_C-W	01-Jun	15-Jun	15-Aug	31-Aug

Turkey Central-East (35°E - 40°E)	TR_C-E	15-Jun	15-Jun	15-Aug	31-Aug
Turkey East (>40°E)	TR_E	01-Jul	01-Jul	31-Jul	15-Aug
United Kingdom North (Scotland + N. Ireland)	UK_N	15-Jun	15-Jun	15-Sep	15-Sep
United Kingdom South (England + Wales)	UK_S	01-Jun	15-Jun	15-Sep	15-Sep

#### **Processing level**

**Dataset 1: Level1**: Reconstructed unprocessed data at full resolution, time- referenced, and annotated with ancillary information, including radiometric and geometric calibration coefficients and geo-referencing parameters (e.g. ephemeris) computed and appended but not applied to the Level 0 data./

Radiometrically corrected and calibrated data in physical units at full instrument resolution as acquired.

<u>Dataset 2, Option 1</u>: Orthorectified with GCM owned DEM, GCPs, IMAGE2006 Reference, in European projection and in 39 National projections, each directly derived, Normalised to nominal satellite reflectance (at sensor)

<u>Dataset2</u>, <u>Option 2</u>: Orthorectified with GSC-DA provided DEM (SRTM V3 OR EuroDEM), IMAGE2006 GCPs database, Reference, in European projection and in 39 National projections, each directly derived Normalised to nominal satellite reflectance (at sensor)

	General remark: No mosaic of scenes required.
Product formats	Product Format: BIL, GEOTIFF always with DIMAP header containing full metadata,
	File naming and organisation requirements: unique identification of scenes (e.g. file name coded
	by sensor, date of acquisition and path/row reference):
	Minimum information needed in a filename:
	• Satellite (shortened code)
	• Sensor code and number (if several cameras), sensor mode
	• Scene (GRS reference) [in accordance to the standard of the specific sensor
	including scene offset in percent or ten percent steps]; an alternative might be
	center lat/lon but may become too long
	<ul> <li>Date of acquisition (YYYYMMDD)</li> <li>E.g. satN GRS YYYYMMDD HHMMSS cameranumber mode sceneoffset</li> </ul>
	Metadata: Delivery of standardized and complete metadata (especially information on scene parameters
	(acquisition date/time, sensor, GRS reference, angle of incidence& cloud/snow coverage, shift
	according to standard scene, number of bands, geo-location accuracies, pre-processing, calibration
	information)) in XML format following DIMAP standard. Additional discussion for final definition
	required.
Product quality	Sun elevation angle > 23° (shadows)
	Incidence/Pointing angle < 30° (distortions)
	Cloud coverage < 5% per country; no haze;
	Snow coverage (for northern countries) < 10 % [- only with glaciers and perennial snow]
	As few images as possible

#### References:

- • IMAGE2006 coverage1 (20m res.; accuracy ~10m RMSExy)
- • DEMs:
  - National DEMs OR
  - EuroDEM OR
  - SRTM-C band Version 2 (NASA) improved by MONAPRO, GLOBE, SRTM-X

Accuracy required: < 10m RMSExy

RMSE for each product shall be less than 10m versus the Reference of IMAGE2006 (1st coverage)

#### Annex 6. <u>National Projections Table:</u>

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Code / Full Name	Number Parameter	dX [m] dY [m]	dZ [m]	rx ["]	rx dezcimal	ry [*]	ry decimal	rz ["]	rz decimal	m [ppm]	Projection	Scaling at Central Meridian	Longitude Origin/Central Meridian	Latitude Origin	Standard Parallel 1 Azimuth Angle	Standard Parallel:	2 False Easting	False Northing	Blipsoid	Semi Major Axis	inverse flattening	Source / Comment	Verification
AL Albania	3	24,000000 -130,00000	0 -92,000000	0,000000		0,000000		0,000000		0,000000	TM	1	21"	0,			4500000,00	0,00	Krassovsky 1940	6378245,000	298,300000000	_I&CLC2000_CRS.pdf	no test coordinates
AT	7	577,326000 90,129000	463,919000	-5,137000	-0,001426944	-1,474000	-0,000409444	-5,297000	-0,001471389	2,423200	Lambert Conformal Conic		13"20"	47°30′	46"	49"	400000,00	400000,00	Bessel 1841	6377397,155	299,152812800	Gebhard Bariko	o.k.
BA BA	7	534,801700 133,64190	501,477700	-4,910525	-0,001364035	-3,003572000	-0,000834326	11,093962000	0,003081656	1,156741000	TM	0,9999	18"	0			6500000,00	0,00	Bessel 1841	6377397,155	299,152812800	Hamid Custovic	no test coordinates
Bosnia and Herzegovina BE	0	0,000000 0,000000	0,000000	0,000000		0,000000		0,000000		0,000000	Lambert Conformal Conic		4"21"33"177	50"47"52"134	49°50′	51"10"	649328,00	665262,00	GRS80			table_countries(3)D.doc	-
Belgium BG		secret									UTM 35	0.9996	27*	0'			500000.00	0.00	WGS84			Borislava Borissova	
Bulgaria		674,400000 15,100000	407 000000	0,000000		0,000000		0,000000		0,000000	Hotine Oblique Mercator		7"26"22.50"	46"57"08.66"	001		000000000	2000000000	Bessel 1841	0077007.455	299,152812850	httsriikes biin bund deiers-euledex him	
Switzerland		014,400000 10,10000	400,000000	0,00000		0,00000		0,000000		0,00000			7 2022.30	40 37 00.00	~		00000,00	20000,00	DESSETTON	03/100/,100	239,132012030		0.2
Oyprus	U	0,000000 0,000000	0,000000	0,000000		0,000000		0,000000		0,000000	UTM 36	0,9996	33-				500000,00	0,00	WGS84			Nicos Siamarias	-
CZech Rep	7	570,800000 85,700000	462,800000	4,998000	0,001388333	1,587000	0,000440833	5,261000	0,001461389	3,560000	Krovak	0,9999	24"50"	49"30"			0,00	0,00	Bessel 1841	6377397,155	299,152812850	Jiri Kvapil	0.k.
DE Germany	7	598,100000 73,700000	418,200000	-0,202000	-0,000056111	-0,045000	-0,000012500	2,455000	0,000681944	6,700000	TM	1	6", 9", 12",15"	0,			n500000	0,00	Bessel 1841	6377397,155	299,152812850	http://crs.bkg.bund.de/crs-eu/index.html	0.k
DK	0	0,000000 0,000000	0,000000	0,000000		0,000000		0,000000		0,000000	UTM 32	0,9996	9"	0,			500000,00	0,00	WGS84			M.Sc. Michael Stjernholm	-
E E	0	0,000000 0,000000	0,000000	0,000000		0,000000		0,000000		0,000000	Lambert Conformal Conic		24"	57"31'03,19415"	58"	59"20"	500000,00	6375000,00	GRS80			Tina Dialis	
Estonia ES	0	0,000000 0,000000	0,000000	0,000000		0,000000		0,000000		0,000000	UTM 28, 29, 30, 31	0,9996	-15", -9", -3", 3"	0"			500000,00	0,00	GRS80			http://crs.bkg.bund.de/crs-eu/index.html table_countries(3)D.doc	-
Spain Fl	0	0.000000 0.000000	0.000000	0.000000	0.000000000	0.000000	0.00000000	0,000000	0.000000000	0.000000	FTRS.TMSFIN	0.9996	27*	0"			500000.00	0.00	GRS80	6378137 000	298 257222101	FTSP-CRS (WGS84-Datum) differs from CLC-CRS (ED50-Datum)  Markus Tomm (SVKF) / htm://docs.lbus.ussb.idset fi/lbs.sussb.idset/JHS154_lite3/JHS154_lite3 odf	
Finland			-									-											
France new (RGF93)	U	0,000000 0,000000	0,000000	0,00000	0,000000000	0,000000	0,000000000	0,000000	4,000000000	6,000000	Lumbert Contermal Conic		3	46'30	44"	49	700000,00	00,000000	- Caressu -	6318131.0	238 257 222101	http://goodesin.ign.fo/codensufschiers/documentation/ref934_ambert-93.edf	
GB Great Britain		446,448000 -125,15700				-0,247000	-0,000068611	-0,842100	-0,000233917	-20,489400	TM	0,999601272	-2"	49"			400000,00	-100000,00	Airy 1830	6377563,396	299,324964594	Dr. Geoff Smith  http://www.ordnancesurvey.co.uk/oswebsite/gps/docs/A. Guide to Coordinate Systems in Great Britain.pdf	o.k.
GR Greens	7	-201,830000 74,070000	244,930000	-0,530000	-0,000147222	-0,230000	-0,000063889	-0,450000	-0,000125000	0,470000	TM	0,9996	24"	0,			500000,00	0,00	GRS80			Dr. Konstantinos Stefanakis	no test coordinates
HR	7	534,786590 133,68244	501,481725	-4,910687	-0,001364080	-3,003308	-0,000834252	11,094034	0,003081676	1,156740	TM	0,9999	15*	0"			n500000	0,00	Bessel 1841	6377397,155	299,152812800	Marijo Vranaricie	dfferent system at http://crs.bkg.bund.de/crs-eu/index.html
HU	7	52,684000 -71,19400	-13,975000	0,312000	0,000086667	0,106300	0,000029528	0,372900	0,000103583	-1,019100	Hotine Oblique Mercator	0,99993	zone 5 19°02'54,858408"	47"08"39,817392"	90°		650000,00	200000,00	International 1967	6378160,000	298,250000000	Tomas Soukup	no test coordinates
Hungary IE	7	482.500000 -130.60000	0 564.600000	1,042000	0.000289444	0,214000	0.000059444	0,631000	0.000175278	8.150000	TM	1.000035	-8"	53.5"			200000.00	250000.00	Airy Modified 1849	6377340.189	299,324964600	George McHugh	Latitude one time different 1 with 0.01"?
reland		0,000000 0,000000					0		0,00000000				-19"00"00.0"								298.257222101	http://crs.bkg.bund.de/crs-eu/index.html Guðmundur Valkson	
Iceland	0	8,000000 0,000000	0,000000	0,000000	0	0	0	0,000000	0,00000000	0,000000	LOC		-19'00'00.0"	65'00'00.0"	64*15'00.0"	65*45*00.0*	500000.0	500000.0	GRS 1980	63/813/.0	298.25/222101		
taly taly	0	0,000000 0,000000	0,000000	0,000000	+	0,000000		0,000000		0,000000	UTM 32								WGS84			Image2000 products and methods	-
Li Lierhtenstein	7	577,326000 90,129000	463,919000	-5,137000	-0,001426944	-1,474000	-0,000409444	-5,297000	-0,001471389	2,423200	Lambert Conformal Conic		13.20*	47°30′	46"	49"	400000,00	400000,00	Bessel 1841	6377397,155	299,152812800	Gebhard Banko	O.K.
LT	0	0,000000 0,000000	0,000000	0,000000		0,000000		0,000000		0,000000	TM	0,9998	24"	0"			500000,00	0,00	GRS80				
LV	0	0,000000 0,000000	0,000000	0,000000		0,000000		0,000000		0,000000	TM	0,9996	24"	0"			500000,00	-6000000,00	GRS80			http://crs.bkg.bund.de/crs-eu/index.html Image2000 products and methods	-
Latvia LU	7	-192,986000 13,673000	-39.309000	0,409900	0.000113861	2,933200	0,000814778	-2,688100	-0.000746694	0,430000	TM	1	6" 10"	49" 50"			80000,00	100000.00	Hayford	6378388.000	297,000000000	http://www.act.efat.kuldatum.html	o.k
Luxembourg ME		574.027320 170.17492			0.001957730							0,9999	21"	0.					Lux 1930 Datum		299,152812850	Dragutin Protic	
Montenegro			901,040000		-0,001031739				0,000073047	0,000000	100												
Mazedonien		521,747600 229,48920	590,920700	-4,028780	-0,001119106	-4,488360	-0,001246767	15,520670	0,004311297	-9,780300	TM	0,9999	21"	0"			500000,00		Bessel 1841		299,152812850	Zoran Velickov	-
MT Mata	7	-407,719000 -44,08000	72,190000	0,536699	0,000149083	-11,324882	-0,003145801	3,041836	0,000844954	20,266000	UTM 33	0,9996	15"	0"			500000,00		Hayford Int 1924 elipsoid		297,000000000	Saviour Formosa	no test coordinates
NL Netherlands	7	565,240000 50,010000	465,660000	0,406900	0,000113028	-0,350700	-0,000097417	1,870300	0,000519528	4,081200	Double Stereographic	0,9999079	5,387638889	52,15616056			155000,00	463000,00	Bessel 1841	6377397,155	299,152812800	Gerard Hazeu http://crs.bkg.bund.de/crs-eu/index.html	o.k.
NO	0	0,000000 0,000000	0,000000	0,000000		0,000000		0,000000		0,000000	UTM 33	0.9996	15"	0"			500000.00	0,00	GRS80	6378137.0	298,257222101	Geir-Harald Strand (communication 20130213)	-
PL PL	0	0,000000 0,000000	0,000000	0,000000		0,000000		0,000000		0,000000	TM	0,9993	19"00"00"	0100.001			500000,00	-5300000,00	GRS80			Image2000 products and methods	-
Ptiand PT	0	0,000000 0,000000	0.000000	0.000000		0,000000		0,000000		0.000000	TM	1	-08° 07° 59°,19	39° 40′ 05°,73			0.00	0.00	GRS80	6378137.000	298257222101,00	Ana Luisa Gomes	-
Portugal		20 000000 424 00000	77.00000	0.000000		0.000000		0,000000		0.000000	Country Characteristics	0.99975	or.	46*			F00000 00		Krasovsky 1940		298.30000000	http://www.igeo.pt/produtos/Geodesia/Inf_tecnicalsistemas_referencia/Datum_ETRS89.htm	no test coordinates
Romania		20,000000 -121,0000	-17,000000							0,00000	Dodde Okreographic		- 13				500000,00	De	ealul Piscului 1970 Dat	tum		Jenica Hanganu agreed to use system of image2000 (Romania specified uncorrect sytem)	no test coordinates
Serbia (comeny CS)	7	574,027320 170,17492	401,545300	-4,887860	-0,001357739	0,665240	0,000184789	13,246730	0,003679647	6,889330	TM	0,9999	21"	0,			7500000,00	0,00	Bessel 1841	6377397,155	299,152812850	Dragutin Protic	
SE Sweden new (SWEREF)	0	0,000000 0,000000	0,000000	0,000000	0,000000000	0.000000	0,000000000	0,000000	0,000000000	0,000000	TM	0,9996	15.*	0"			500000,00	0,00	GRS 1980	6378137,000	298,257222010	Mats Halling	
SI	7	426,900000 142,60000	460,100000	-4,910000	-0,001363889	-4,490000	-0,001247222	12,420000	0,003450000	17,100000	TM	0,9999	15*	0"			500000,00	0,00	Bessel 1841	6377397,155	299,152853300	Ales Versic -> http://ere blan bund da/ore ausledes bled	Latitude different of about 0,02° and 0,01° ?
SK	3	25,000000 -120,00000	0 -80,000000	0,000000		0,000000		0,000000		0,000000	TM	1	21"	0"			4500000,00	0,00	Krasovsky 1940	6378245,000	298,300000000	Image 2000 products and methods	different system at http://crs.bkg.bund.de/crs-eu/index.html
Slovakia TR	7	-84,100000 -101,80000	0 -129,700000	0,000000		0,000000		-0,468000	-0,000130000	1,050000	Lambert Conformal Conic		36"	0,	37"30"	40"30"	1000000,00	0,00	Hayford	6378388,000	297,000000000	Slovakia changed requirement (use only central meridian 21") http://crs.bkg.bund.de/crs-eulindex.html bzw.table_countries(3)D.doc	no test coordinates o.k.
Turkey FR																							
Canaries																							
FR Martinique											TM	0,9996	-63	01			500000,00	0,00	WGS84	6378137,000	298,257223563	http://www.spatiaireference.org/ref/epsg/32620/	
FR Guarfeirune											TM	0,9996	.63	01			500000.00		WGS84		298,257223563	http://www.spatiaireference.org/ref/epsg/32620/	
FR																	54500,00						
Guyane FR											TM	0,9996	-51	01			500000,00	0,00	WGS84	637813,000	298,257223563	http://www.spatiaireference.org/ref/epsg/32622/	
Reunion FR											TM	0,9996	57°	01			500000,00	10000000,00	WGS84	6378137,000	298,257223563	http://www.spatiaireference.org/ref/epsg/32740/	
Mayotte											TM	0,9996	45°	01			500000,00	10000000,00	WG984	6378137,000	298,257223563	http://www.spatiaireference.org/ref/epsg/32738/	
Azores West Group											UTM	0,9996	-33	0"			500000,00	0,00		6378137,000	298257222101,00		
Azores Central and East Group PT											UTM	0,9996	-27	0.			500000,00	0,00	GRS80	6378137,000	298257222101,00	http://www.igeo.pt/produtos/Geodesia/Inf_tecnica/sistemas_referencia/Datum_PTRA08-UTM.htm	
Madeira											UTM	0,9996	-15	0"			500000,00	0,00	GRS80	6378137,000	298257222101,00	http://www.igeo.pt/produtos/Geodesia/Inf_tecnica/sistemas_referencia/Datum_PTRA08-UTM.htm	