

Earth Observation Data Centre

Request For Change

Appendix 8 - Improve ingestion process

Business Requirements

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Definitions and acronyms

ACT: Activity Detection Service
BCF: Business Continuity Facility
CDS: Change Detection Service
DER: SAR Wind and Wave Product
EFS: Enriched Feature Service
EO: Earth Observation
EODC: Earth Observation Data Centre
EOP: Earth Observation Package
EOPO: Earth Observation Package Optical
EVS: Enriched Vessel Services
FDS: Feature Detection Service
OSN: Oil Spill Notification
QNO: Quality Notification
QUA: Quality Report
VAP: Value-Added Package
VDS: Vessel Detection Service
WDS: Wake Detection Service

1. Objective of this change

The main objective of this change is to reduce the delivery time of EO data to users by changing the processing times on EMSA systems, namely in EODC.

2. Service Requirements

Title: Transfer of Value-Added Products in maximum 1 minute		
ID: CSN_FUN_0010	JIRA: N/A	Priority: Must have
Service: All Services consuming EO data	Sub-service: N/A	Type: Functional
Application: EODC	Components: N/A	Version: 1.0
<p>The following packages must be transferred to EODC Processing in a maximum of 1 minute after their arrival to CSNDC Archive (ISM_STORE):</p> <ul style="list-style-type: none">- Oil Spill Notification (OSN);- Vessel Detection Service (VDS);- Feature Detection Service (FDS);- SAR Wind and Wave Product (DER);- Activity Detection Service (ACT);- Wake Detection Service (WDS);- Change Detection Service (CDS);- Enriched Vessel Service (EVS);- Enriched Feature Service (EFS);- Quality Report (QUA). <p>Concurrent or consecutive arrival of files does not change the defined threshold (i.e. if one OSN, one VDS and one FDS arrive at the same time, the total transfer time shall be 1 minute, and not cumulative).</p>		
<p>Acceptance criteria: The transfer to EODC Processing shall be concluded in maximum 1 minute after files, of the abovementioned type, have arrived to CSNDC Archive (ISM_STORE). Test Scenarios shall include:</p> <ul style="list-style-type: none">- 1 file per each type of EO Package;- 2 files of different EO Package type;- 5 files of different EO Package type;- 10 EO Package files;- 20 EO Package files.		

Title: Transfer of EO Images and Quality Notifications in maximum 3 minutes		
ID: CSN_FUN_0020	JIRA: N/A	Priority: Must have
Service: All Services consuming EO data	Sub-service: N/A	Type: Functional
Application: EODC	Components: N/A	Version: 1.0
<p>The following packages must be transferred to EODC Processing in a maximum of 3 minutes after their arrival to CSNDC Archive (ISM_STORE):</p>		

<ul style="list-style-type: none">- EOP (Earth Observation Package);- EOPO (Earth Observation Package- Optical);- Quality Notification (QNO). <p>Concurrent or consecutive arrival of files does not change the additional threshold (i.e. if one EOP, one EOPO and one QNO arrive at the same time, the total transfer time shall be 1 minute, and not cumulative).</p>
<p>Acceptance criteria:</p> <p>For all EOP packages arriving at CSNDC Archive (ISM_STORE) the transfer to EODC Processing shall be concluded in maximum 3 minutes.</p> <p>Test Scenarios shall include:</p> <ul style="list-style-type: none">- 1 file per each type of EO Package;- 2 files of different EO Package type;- 5 files including at least 1 EOP and 1 EOPO;- 9 EO Package files including at least 3 EOPs, 3 EOPOs and 3 QNOs.

Title: Log of processes		
ID: CSN_FUN_0030	JIRA: N/A	Priority: Must have
Service: All Services consuming EO data	Sub-service: N/A	Type: Functional
Application: EODC	Components: N/A	Version: 1.0
<p>EODC Logs shall include information on the ingestion processes namely:</p> <ul style="list-style-type: none">- Transferred EO Package (filename);- Origin (location where the files are transferred from);- Destination (location or locations where the files are transferred to);- Date and time of transfer (UTC, and time format including seconds);- Transfer time (Time taken by the system to transfer the file);- Size of package (in MB);- Status of process (Success/Failed);- If applicable, incident information (in case of failure).		
<p>Acceptance criteria:</p> <p>For all packages arriving at CSNDC Archive (ISM_STORE) and transferred to EODC Processing, the logs shall include the information listed in requirement and the information must be accurate.</p>		

Title: Access to Logs		
ID: CSN_FUN_0031	JIRA: N/A	Priority: Must have
Service: All Services consuming EO data	Sub-service: N/A	Type: Functional
Application: EODC	Components: N/A	Version: 1.0
<p>The Transfer logs, mention in CSN_FUN_0030 requirement, shall be made available in a page of EODC Processing Administration Page, in table format.</p>		
<p>Acceptance criteria:</p> <p>The Transfer logs are available in a page of the EODC Processing Administration Page.</p>		

Title: Access to Logs: Functionalities

ID: CSN_FUN_0031	JIRA: N/A	Priority: Must have
Service: All Services consuming EO data	Sub-service: N/A	Type: Functional
Application: EODC	Components: N/A	Version: 1.0

The following functionalities shall be available in the log page of the EODC Administration page:

- Sort by time;
- Sort by Package name;
- Filter by date and time;
- Filter by package name;
- Filter by EO Service ID.

Acceptance criteria:

For 1 week of ingested data in Production, to be selected by EMSA, validate that each one of these functionalities is available and correctly works.

Title: Capability of transfer mechanism

ID: CSN_CAP_0010	JIRA: N/A	Priority: Must have
Service: All Services consuming EO data	Sub-service: N/A	Type: Non-Functional-Capability
Application: EODC	Components: N/A	Version: 1.0

The transfer mechanism shall be able to transfer, in a single process, at least 50 EO packages without an impact on the performance or success of the transfer. These transfers shall take place in parallel.

Acceptance criteria:

Test Scenario: 50 Packages are transferred at the same time. The test scenario shall include:

- 1 file per type of package;
- 1 EOPO with more than 5 GB;
- 1 EOP with more than 5 GB.

Title: Availability of transfer mechanism

ID: CSN_AVA_0010	JIRA: N/A	Priority: Must have
Service: All Services consuming EO data	Sub-service: N/A	Type: Non-Functional-Availability
Application: EODC	Components: N/A	Version: 1.0

The transfer mechanism shall be available 24/7.

Acceptance criteria:

Simulate 1 day of EO services delivery in a testing environment and demonstrate that the transfer mechanism was working without failures.

Title: BCF compliant

ID: CSN_AVA_0010	JIRA: N/A	Priority: Must have
Service: All Services consuming EO data	Sub-service: N/A	Type: Non-Functional-Availability
Application: EODC	Components: N/A	Version: 1.0

The transfer mechanism shall be Business Continuity Facility (BCF) compliant.

Acceptance criteria:

Tests shall ensure that in case the EODC is transferred to BCF, the files transfer mechanism still works at the same level as defined by EMSA.

Title: Resilience

ID: CSN_AVA_0020	JIRA: N/A	Priority: Must have
Service: All Services consuming EO data	Sub-service: N/A	Type: Non-Functional-Availability
Application: EODC	Components: N/A	Version: 1.0

In case of transfer errors, the transfer mechanism shall automatically retry to transfer of the files after a failed transfer- according to conditions defined in requirement CSN_CON_0010.

Acceptance criteria:

For 50 files where there a failure to transfer, the transfer mechanism will retry the transfer process. File should include at least:

- 1 file per file type
- 1 file larger than 5GB
- 10 files failing at the same time.

Title: Documentation content

ID: CSN_DOC_0010	JIRA: N/A	Priority: Must have
Service: All Services consuming EO data	Sub-service: N/A	Type: Non-Functional-Documentation
Application: EODC	Components: N/A	Version: 1.0

The contractor shall issue technical documentation that:

- describes the transferring mechanism and the configuration of the module (covering all configuration of requirement CSN_CON_0010);
- procedures to recover the transfer process (if applicable);
- procedures to force the run of the transfer process (e.g. scripts);
- architectural diagram clearly highlighting the location/function and role the process in the EO product transfer and processing chain

Acceptance criteria:

Document shall be accepted by EMSA.

Title: Documentation formatting

ID: CSN_DOC_0020	JIRA: N/A	Priority: Must have
Service: All Services consuming EO data	Sub-service: N/A	Type: Non-Functional-Documentation
Application: EODC	Components: N/A	Version: 1.0

The technical documentation shall be sent to EMSA in MS Word format.

Acceptance criteria:

Document must be delivered in MS Word format.

Title: Configuration		
ID: CSN_CON_0010	JIRA: N/A	Priority: Must have
Service: All Services consuming EO data	Sub-service: N/A	Type: Non-Functional-Configuration
Application: EODC	Components: N/A	Version: 1.0
<p>The following elements shall be configurable:</p> <ul style="list-style-type: none">- File types (External Interface Control Document (EICD) may foresee additional EO Packages);- Transfer intervals (as defined in CSN_FUN_0010 and CSN_FUN_0020);- Origin (location where the files are transferred from);- Destination (location or locations where the files are transferred to);- Interval and number of retries in case of failure (as defined in CSN_AVA_0020); <p>Configuration elements shall not require a deployment of the application / component, should be centralized and accessible by EMSA.</p>		
<p>Acceptance criteria:</p> <ol style="list-style-type: none">1- Transfer times are changed by EMSA and applied to the transfer mechanism.2- EMSA changes file types, and the change is applied to the transfer mechanism3- EMSA change the origin of the files, and the change is applied to the transfer mechanism4- EMSA change the destination of the files, and the change is applied to the transfer mechanism5- EMSA changes the interval and number of retries in case of failure, and the change is applied to the transfer mechanism		

Title: Monitoring		
ID: CSN_DOC_0010	JIRA: N/A	Priority: Must have
Service: All Services consuming EO data	Sub-service: N/A	Type: Non-Functional-Monitoring
Application: EODC	Components: N/A	Version: 1.0
<p>EMSA Monitoring systems shall be able to monitor if any process transfer process failed. If yes, alerts shall be raised on this platform.</p>		
<p>Acceptance criteria:</p> <p>EMSA monitoring system can access monitoring probes and detect transfer process failures.</p>		