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|  | CSC ESA  GROUND SEGMENT OPERATIONS FRAMEWORK  OPERATIONS COORDINATION DESK SERVICE  [OMCS] SentiBoard Installation Manual |  |

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| **Title:** | **CSC Coordination Desk – [OMCS] SentiBoard Installation Manual** | | |
| **Abstract**: | This document describes the SentiBoard installation procedure | | |
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# Introduction

## Purpose

The objective of this document is to describe the installation procedure of the SentiBoard.

## Structure of the document

The present document is structured as follows:

* Chapter 1: Introduction – this Chapter;
* Chapter 2: Applicable and Reference documents, Acronyms
* Chapter 3: SentiBoard installation procedure

# Applicable and Reference Documents, Acronyms

## Applicable Documents

The following table lists the applicable documents:

| **Refer.** | **Title** | **Code** |
| --- | --- | --- |
| [AD-IL] | Invitation To Tender for ESA Ground Segment Operations Framework Operations Coordination Desk Service | AO/1-10177/12/I-BG-SC 13.05.2021 |
| [AD-SOW] | Copernicus Space Component - ESA Ground Segment Operations Framework – Coordination Desk Service - STATEMENT OF WORK | ESA-EOPG-EOPGC-SOW-20 Issue 1.0 |
| [AD-DC] | Appendix 2 to ITT – Draft Contract | 13.05.2021 |
| [AD-STC] | Appendix 3 to ITT – Special Conditions of Tender | 13.05.2021 |
| [AD-ADG] | Auxiliary Data Gathering Technical Requirements | ESA-EOPG-EOPGC-RS-17 Issue 1.0 |
| [AD-WEB] | Web Pages Operations Technical Requirement | ESA-EOPG-EOPGC-RS-14 Issue 1.0 |
| [AD-OMCS] | Operations Monitoring and Coordination Service Technical Requirements | ESA-EOPGEOPGC-RS-18 Issue 1.0 |
| [AD-SLA] | SLA and Key Performance Indicators | EOPG-EOPGC-TN-43 Issue 1.0 |
| [AD-SEC] | Coordination Desk Service - Security Requirements Document | ESA-EOPG-EOPGCS-SP-13 Issue 1.0 |
| [AD-CDP] | CSC PDGS/CDS Coordination Desk Procedures | COPE-GSEG-EOPG-PR-14-0035 Issue 2.0 |
| [AD-MNT] | CSC Ground Segment Coordinated Maintenance Procedure, | COPE-PMAN-EOPG-PR-14-0001 Issue 4.0 |
| [AD-CM] | CSC Ground Segment Configuration Management Requirements, | ESA-EOPG-CSCOP-RS-14 Issue 1.0 |
| [AD-AMP] | CSC Ground Segment Anomaly Management Procedure, | GMES-GSEG-EOPG-PR-13-0008 Issue 4.0 |
| [AD-CIDL] | CSC Coordination Desk – Configuration Data Item List | ESA-EOPG-EOPGC-TN-45 Issue 1.0 |

*Table 2‑1: Applicable Documents*

## Reference Documents

The following table lists the reference documents:

| **Refer.** | **Title** | **Code** |
| --- | --- | --- |
| [RD-ARCH] | CSC Operations – ESA Framework – Ground Segment Architecture, | ESA-EOPG-EOPGC-TN-7 Issue 1.2 |
| [RD-MICD] | Copernicus Space Component ESA Ground Segment Operations Framework-MasterICD | ESA-EOPG-EOPGC-IF-6 Issue 1.2 |
| [RD-CSDAR] | Copernicus Sentinel Data Access Report https://scihub.copernicus.eu/twiki/pub/SciHubWebPortal/AnnualReport2019/COPESERCO-  RP-20-0570\_-\_Sentinel\_Data\_Access\_Annual\_Report\_Y2019\_v1.0.pdf |  |
| [RD-EUG] | EU green public procurement criteria for data centres, server rooms and cloud services | SWD(2020) 55 final |
| [RD-NRJ] | Acton, M., Bertoldi, P., Booth, J., Flucker, S., Newcombe, L., Royer, A. and Tozer, R., 2019 Best Practice Guidelines for the EU Code of Conduct on Data Centre Energy Efficiency, European Commission, Ispra, 2018, | JRC114148 |
| [RD-GL] | CSC Sentinel Ground Segment Operations Glossary | ESA-EOPG-EOPGC-TN-13 |
| [RD-STB] | System Technical Budget | ESA-EOPG-EOPGC-TN-09 Issue 1.4 |

*Table 2‑2: Reference Documents*

## Acronyms and Abbreviations

The following table contains all acronyms and abbreviations used in the current document.

| Acronym/Abbreviation | Definition |
| --- | --- |
| API | Application Programming Interface |
| AUX | Auxiliary |
| AUXIP | Auxiliary Interface (delivery) Point |
| CADU | Channel Access Data Unit |
| Cal/Val | Calibration/Validation |
| CCD | Copernicus Coordination Desk |
| CFI | Customer Furnished Item |
| COM | European Commission |
| CSC | Copernicus Space Component |
| CVIP | Calibration & Validation Interface (delivery) Point |
| DD | Data Distribution |
| DP | Documentation Package |
| DPA | Dynamic Procurement Approach |
| E2E | End-to-End |
| EC | European Commission |
| ECMWF | European Centre for Medium-Range Weather Forecasts |
| EDRS | European Data Relay Satellite System |
| EO | Earth Observation |
| EOF | ESA Operations Framework |
| EOP | Earth Observation Programme |
| ESA | European Space Agency |
| EU | European Union |
| EUM | EUMETSAT |
| FC | Frame Contract |
| FTP | File Transfer Protocol |
| GS | Ground Segment |
| HKTM | Housekeeping Telemetry |
| ICD | Interface Control Document |
| IF | Interface |
| IP | Interface (delivery) Point |
| IPF | Instrument Processing Facility |
| ITT | Invitation To Tender |
| KPI | Key Performance Indicators |
| LTA | Long Term Archive |
| MP | Mission Planning |
| MPIP | Mission Planning Interface (delivery) Point |
| ODP | On-Demand Processing |
| ODPRIP | On-Demand Processing Interface (delivery) Point |

*Table 2‑3: Acronyms and abbreviations*

# SentiBoard Installation procedure

## Hardware specifications

SentiBoard is deployed as a Web Application is meant to run on Linux server. Below the HW specifications are reported:

* OS: Linux Ubuntu 20.04 (64Bit)
* Number of CPUs: 2
* RAM: 16 GB
* HDD: 100 GB
* Coin-UP format: OCI Image (Dockerized)

SentiBoard is deployed as a Web Application is distributed as a Docker OCI (Open Container Initiative) Image. The Open Container Initiative is an open governance structure for the express purpose of creating open industry standards around container formats and runtimes. Established in June 2015 by Docker and other leaders in the container industry, the OCI currently contains two specifications: the Runtime Specification (runtime-spec) and the Image Specification (image-spec). The Runtime Specification outlines how to run a “filesystem bundle” that is unpacked on disk. At a high-level an OCI implementation would download an OCI Image then unpack that image into an OCI Runtime filesystem bundle. At this point the OCI Runtime Bundle would be run by an OCI Runtime.

## Docker installation

As a prerequisite, install “docker” on the target VM. To do so, ensure to enable the proper repository:

>> sudo apt-get update

>> sudo apt-get install \

ca-certificates \

curl \

gnupg \

lsb-release

Then add the Docker official GPG key:

>> sudo mkdir -p /etc/apt/keyrings

>> curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo gpg --dearmor -o /etc/apt/keyrings/docker.gpg

Use the following command to set up the repository:

>> echo \

"deb [arch=$(dpkg --print-architecture) signed-by=/etc/apt/keyrings/docker.gpg] https://download.docker.com/linux/ubuntu \

$(lsb\_release -cs) stable" | sudo tee /etc/apt/sources.list.d/docker.list > /dev/null

Update the apt package index, and install the latest version of Docker Engine, containerd, and Docker Compose, or go to the next step to install a specific version:

>> sudo apt-get update

>> sudo apt-get install docker-ce docker-ce-cli containerd.io docker-compose-plugin

## SentiBoard software installation

To install the SentiBoard software deployed as a Web Application, perform the following steps:

1. Copy the SentiBoard image on the target VM, and load the docker image:

>> docker load < /home/ubuntu/sentiboard/releases/1.0.0/app.tar

1. Acknowledge that the sha256 is displayed on screen:

a132fa8c831ed4665b3ca4fe80f4209bc953225d81d8cc6a65488ae83fdefecb

1. Create the Postgres’s volume:   
   >> docker volume create --name=postgres-db-volume
2. Create the PgAdmin’s volume:   
   >> docker volume create --name=pgadmin-db-volume
3. Remove all old containers (in the same path where is file: stack-db-coinup.yaml) :  
   >> docker-compose -f stack-pdashboard.yaml down
4. Run all new containers (in the same path where is file: stack-db-coinup.yaml):  
   >> docker-compose -f stack-pdashboard.yaml up -d