WP1 – Project Management & Coordination

D1.7 DWH Use for 2019

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Table of Contents

Copyright © EO4AGRI Project Consortium

List of Tables

Copyright © EO4AGRI Project Consortium

List of Figures

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Glossary

The glossary of terms used in this deliverable can be found in the public document "EO4AGRI_Glossary.pdf" available at: http://www.eo4agri.eu/EO4AGRI_Glossary.pdf

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Definitions, Abbreviations and Acronyms

Table 1: List of Abbreviations and Acronyms

Abbreviation / Acronym	Definition
ADD	ADDitional datasets
AOI	Area Of Interest
CAP	Common Agricultural Policy
CSA	Coordination and Support Action
CSCDA	Copernicus Space Component Data Access
DWH	Data Warehouse
DIAS	Copernicus Data and Information Services
DAP	Data Access Portfolio
Dx.y	Deliverable number y belonging to WP x
EC	European Commission
EC	European Commission
EO	Earth Observation
GEOGLAM	GEO Global Agricultural Monitoring
ESA	European Space Agency
IACS	Integrated Administration and Control System
REA	Research Executive Agency
VHR	Very High Resolution
WP	Work Package

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EO4AGRI Project Overview

The main objective of EO4AGRI is to catalyse the evolution of the European capacity for improving operational agriculture monitoring from local to global levels based on information derived from Copernicus satellite observation data and through exploitation of associated geospatial and socio-economic information services.

EO4AGRI assists the implementation of the EU Common Agricultural Policy (CAP) with special attention to the CAP2020 reform, to requirements of Paying Agencies, and for the Integrated Administration and Control System (IACS) processes. EO4AGRI works with farmers, farmer associations and agro-food industry on specifications of data-driven farming services with focus on increasing the utilization of EC investments into Copernicus Data and Information Services (DIAS).

EO4AGRI addresses global food security challenges coordinated within the G20 Global Agricultural Monitoring initiative (GEOGLAM) capitalizing on Copernicus Open Data. EO4AGRI assesses information about land-use and agricultural service needs and offers to financial investors and insurances and the potential added value of fueling those services with Copernicus information.

The EO4AGRI team consists of 11 organizations, complementary in their roles and expertise, covering a good part of the value-chain with a significant relevant networking capital as documented in numerous project affiliations and the formal support declarations collected for EO4AGRI. All partners show large records of activities either in Copernicus RTD, governmental functions, or downstream service operations. The Coordinator of EO4AGRI is a major industrial player with proven capacities to lead H2020 projects.

The EO4AGRI project methodology is a combination of community building; service gap analysis; technology watch; strategic research agenda design and policy recommendations; dissemination (including organization of hackathons).

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Executive Summary

The goal of this document is to provide detailed information about the use of ADD datasets in EO4AGRI project. In 2019, the project has followed the process stablished by ESA through the Data Warehouse mechanism (DWH) in order to request Earth Observation data (EO) for validation purposes according to the project objectives.

Although at the beginning of the project it was planned to request EO datasets via the DWH mechanisms in order to support part of the requirements and gap analysis activities concerning the Paying Agencies and the CAP Monitoring, it was early disregarded due to the high budgetary cost that it would imply acquiring them.

Therefore, the present deliverable provides no description of the use of Additional data sets during the year 2019 has been included as no datasets where officially requested.

Notwithstanding, the document describes, for historical reasons, the datasets that were originally planned for request.

As a final remark, in principle, there are no plans in the project to order ADD datasets from DWH mechanism for 2020.

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1 Introduction

1.1 Purpose of the document

In the context of the Data Warehouse Mechanism managed by ESA, this document includes the initial EO4AGRI request done by the project in September 2018.

1.2 Relation to other project work

As part of EO4AGRI activities, partner EOX intended to intensively exchange information with the Paying Agencies (PAs) for CAP Monitoring using Copernicus data. In that regard, early at the project start the consortium was realizing already that Sentinel datasets was not the only EO data source for the PAs but strong needs exist for the use of multi-sensor data coverages.

EOX plans were to approach the PAs not only via interviews and desk research but also via sharing of practical results from looking at these data (thematic classification for agriculture fields and grassland monitoring) for the purpose of assessing them and capturing educated feedback.

Therefore, the consortium was interested in receiving some coverages e.g. areal cut outs from the so-called Image2018 data set, which at that time was being procured by ESA/EC for the DWH, in order to perform such assessment.

Austria as a whole was considered as the initial testing area for performing the DWH request (approximately 1.3 billion square kilometers (see Section 2 for further details)) of Optical VHR multispectral and panchromatic coverage over Europe (VHR_IMAGE_2018).

However, due to the large economic cost that it would imply (billions of euros), the request of the data was finally disregarded by the project.

Therefore, no description of the use of Additional data sets during the year 2019 has been included as no datasets where officially requested. Section 2 describes, for historical reasons, the datasets that were originally planned for request.

1.3 Structure of the document

This deliverable is divided into the following sections:

- **Section 2** presents an introduction to the DWH mechanism and the ordering process.
- **Section 3** presents the use of additional datasets for EO4AGRI project. This chapter includes requested data in 2019.
- **Section 4** presents the main conclusions
- The **References** section provides information about the documentation used to produce this deliverable.

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2 Additional datasets ordering process (DWH mechanism)

This section provides a brief introduction of the process to order ADDitional datasets (ADD) using the DWH mechanism. The content intends to summarize the process followed in the project to get access to ADD.

2.1 Collect request

The ordering process start with the collection of ADD datasets request for eligible projects (such as Eo4AGRI). The Research Executive Agency (REA) collects the request through the defined process. Involved partners in the process (mainly EOX) complete the request template provided by the EC (see next figures).

Project Name :		Project Coordinator:				
Category: Projects						2019
Core dataset	code	Single AOI size (sqkm)	Number of repetitions	Timeframe avaialbility of data	Area and coordinates	Total sqkm
Archive_rush_Optical_HR1	ADD_001a					0
Archive_rush_Optical_HR2	ADD_001b					0
Archive_rush_Optical_VHR1	ADD_003a					0
Archive_rush_Optical_VHR2	ADD_003b					0
Archive_Rush_Optical_MR1	ADD_021a					0
Archive_rush_SAR_HR1	ADD_005a					0
Archive_rush_SAR_HR2	ADD_005b					0
Archive_rush_SAR_VHR1	ADD_007a					0
Archive_rush_SAR_VHR2	ADD_007b					0
Archive_Rush_SAR_MR1	ADD_023a					0

Figure 1: ADD datasets template to be filled

Figure 1 shows the information to be provided by project partners, such as the Single AOI (Area of Interest) size, the number of repetitions, the timeframe availability of data, and the Area and coordinates.

The project's needs were gathered among partners and listed in Figure 2 and Figure 3.

Project Name: EO4AGRI		Project Coordinator: Miguel Ángel Esbrí (ATOS Spain)				
Category: Projects				2019		
Core dataset	code			Total sqkm	automatic formula	Comment
Archive_rush_Optical_HR1	ADD_001a			0		0
Archive_rush_Optical_HR2	ADD_001b			0		0
Archive_rush_Optical_VHR1	ADD_003a			0		0
Archive_rush_Optical_VHR2	ADD_003b			0		0
Archive_Rush_Optical_MR1	ADD_021a			0		0
Archive_rush_SAR_HR1	ADD_005a			0		0
Archive_rush_SAR_HR2	ADD_005b			0		0
Archive_rush_SAR_VHR1	ADD_007a			0		0
Archive_rush_SAR_VHR2	ADD_007b			0		0
Archive_Rush_SAR_MR1	ADD_023a			0		0
New acquisition_rush_Optical_HR1	ADD_002a			0		0
New acquisition_rush_Optical_HR2	ADD_002b			0		0
New acquisition_rush_Optical_VHR1	ADD_004a			0		0
New acquisition_rush_Optical_VHR2	ADD_004b			0		0
New acquisition_Rush_Optical_MR1	ADD_022a			0		0
New acquisition_rush_SAR_HR1	ADD_006a			0		0
New acquisition_rush_SAR_HR2	ADD_006b			0		0
New acquisition_rush_SAR_VHR1	ADD_008a			0		0
New acquisition_rush_SAR_VHR2	ADD_008b			0		0
New acquisition_Rush_SAR_MR1	ADD_024a			0		0
Archive_standard_Optical_HR1	ADD_009a			0		0
Archive_standard_Optical_HR2	ADD_009b			0		0
Archive_standard_Optical_VHR1	ADD_011a			0		0
Archive_standard_Optical_VHR2	ADD_011b			1,351,918,352		-1,351,918,352
Archive_standard_SAR_HR1	ADD_013a			0		0
Archive_standard_SAR_HR2	ADD_013b			0		0
Archive_standard_SAR_VHR1	ADD_015a			0		0
Archive_standard_SAR_VHR2	ADD_015b			0		0
New acquisition_standard_Optical_HR1	ADD_010a			0		0
New acquisition_standard_Optical_HR2	ADD_010b			0		0
New acquisition_standard_Optical_VHR1	ADD_012a			0		0
New acquisition_standard_Optical_VHR2	ADD_012b			1,351,918,352		-1,351,918,352
New acquisition_standard_SAR_HR1	ADD_014a			0		0
New acquisition_standard_SAR_HR2	ADD_014b			0		0
New acquisition_standard_SAR_VHR1	ADD_016a			0		0
New acquisition_standard_SAR_VHR2	ADD_016b			0		0
New acquisition_standard_SAR_MR1	ADD_017a			0		0
New acquisition_standard_SAR_MR2	ADD_017b			0		0
New acquisition_standard_Optical_MR1	ADD_018a			0		0
New acquisition_standard_Optical_MR2	ADD_018b			0		0
Archive_standard_SAR_MR1	ADD_019a			0		0
Archive_standard_SAR_MR2	ADD_019b			0		0
Archive_standard_Optical_MR1	ADD_020a			0		0
Archive_standard_Optical_MR2	ADD_020b			0		0

Figure 2: Consolidated Request September 2018

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Project Name: EO4AGRI	Project Coordinator: Miguel Ángel Esbrí (ATOS Spain)						Email: miguel.esbri@atos.net	
Category: Projects	2019							
Core dataset	code	Single AOI size (sqkm)	Number of repetitions	Timeframe avaialbility of data	Area and coordinates	Total sqkm	Ordering date (linked to project schedule)	automatic formula Comment
Archive_rush_Optical_HR1	ADD_001a					0		
Archive_rush_Optical_HR2	ADD_001b					0		
Archive_rush_Optical_VHR1	ADD_003a					0		
Archive_rush_Optical_VHR2	ADD_003b					0		
Archive_Rush_Optical_MR1	ADD_021a					0		
Archive_rush_SAR_HR1	ADD_005a					0		
Archive_rush_SAR_HR2	ADD_005b					0		
Archive_rush_SAR_VHR1	ADD_007a					0		
Archive_rush_SAR_VHR2	ADD_007b					0		
Archive_Rush_SAR_MR1	ADD_023a					0		
New acquisition_rush_Optical_HR1	ADD_002a					0		
New acquisition_rush_Optical_HR2	ADD_002b					0		
New acquisition_rush_Optical_VHR1	ADD_004a					0		
New acquisition_rush_Optical_VHR2	ADD_004b					0		
New acquisition_Rush_Optical_MR1	ADD_022a					0		
New acquisition_rush_SAR_HR1	ADD_006a					0		
New acquisition_rush_SAR_HR2	ADD_006b					0		
New acquisition_rush_SAR_VHR1	ADD_008a					0		
New acquisition_rush_SAR_VHR2	ADD_008b					0		
New acquisition_Rush_SAR_MR1	ADD_024a					0		
Archive_standard_Optical_HR1	ADD_009a					0		
Archive_standard_Optical_HR2	ADD_009b					0		
Archive_standard_Optical_VHR1	ADD_011a					0		
Archive_standard_Optical_VHR2	ADD_011b	168,989,794	8	March-October (monthly)	Austria (BBox 9.4045029087906880,46.3167315869572036,	1,351,918,352	March-October 2018	Aiming at PlanetScope data from VHR_IMAGE_2018, area for Bbox Austria area cca 83 879 sqkm
Archive_standard_SAR_HR1	ADD_013a					0		
Archive_standard_SAR_HR2	ADD_013b					0		
Archive_standard_SAR_VHR1	ADD_015a					0		
Archive_standard_SAR_VHR2	ADD_015b					0		
New acquisition_standard_Optical_HR1	ADD_010a					0		
New acquisition_standard_Optical_HR2	ADD_010b					0		
New acquisition_standard_Optical_VHR1	ADD_012a					0		
New acquisition_standard_Optical_VHR2	ADD_012b	168,989,794	8	March-October (monthly)	Austria (BBox 9.4045029087906880,46.3167315869572036, 17.2327003315807623,48.9682256953103945)	1,351,918,352	March-October 2019	Aiming at PlanetScope data from VHR_IMAGE_2018, area for Bbox Austria area cca 83 879 sqkm
New acquisition_standard_SAR_HR1	ADD_014a					0		
New acquisition_standard_SAR_HR2	ADD_014b					0		
New acquisition_standard_SAR_VHR1	ADD_016a					0		
New acquisition_standard_SAR_VHR2	ADD_016b					0		
New acquisition_standard_SAR_MR1	ADD_017a					0		
New acquisition_standard_SAR_MR2	ADD_017b					0		
New acquisition_standard_Optical_MR1	ADD_018a					0		
New acquisition_standard_Optical_MR2	ADD_018b					0		
Archive_standard_SAR_MR1	ADD_019a					0		
Archive_standard_SAR_MR2	ADD_019b					0		
Archive_standard_Optical_MR1	ADD_020a					0		
Archive_standard_Optical_MR2	ADD_020b					0		

Figure 3: Single Request September 2018

More in detail, the datasets of interest for the Data Warehouse Request were:

- Optical VHR multispectral and panchromatic coverage over Europe (VHR_IMAGE_2018)
  - PlanetScope Data 4 bands surface reflectance
  - preferably L3 with but if not available, L1 could be utilized as well
  - metadata for data origin
  - utilizing the core dataset of the warehouse for agricultural applications
  - under collaboration with local agencies and companies
- Planetscope data access for processing (if possible)
  - PlanetScope Data 4 bands (surface reflectance)
  - metadata for data origin
  - access to the original data
  - generation of custom defined products by EOX tailored for agricultural applications

2.2 Validation

The request must be validated internally by the European Space Agency (ESA). Regularly it is published The Data Access Portfolio Document (DAP)[1] which contains updated information about the process, including the quota allocated to authorized users, such as the EO4AGRI project. The first version of the DAP document was published in August 2019 (version 2.6 [1]).

As show in Figure 4, EO4AGRI project is mentioned in the index of the document, however it is not listed in the Annex 4 with the rest of projects with an assigned quota.

We assume that the reason why is because the initial request was dismissed by the project itself, due to the budgetary costs that would imply acquiring them, previous to make the "formal" request to the DWH.

Issue Number 2	**Revision Number 5**		
Reason for change	**Date**	**Pages**	**Paragraph(s)**
Skysat mission removed from offer	10/12/2018		Tables 2 and 3 5.2.4
Tianhui removed from the offer for Archive data as well as the previously removed New data.	10/12/2018		Tables 9 and 11
Addition of 8 new Union Research projects and relevant quota assignments for 2019: CANDELA, EO4AGRI, EnviroLENS, EO-ALERT, ForestFlux, PerceptiveSentinel, REDDCopernicus and MULTIPLY.	10/12/2018		Annex 4
Quota updates for existing Union Research and Services – 2019 allocation	10/12/2018		Annex 4
Removal of quota allocations due to the end of project activities for : SPACE-O,EUGENIUS, CoReSyF and EO4Wildlife	10/12/2018		Annex 4

Figure 4: Projects listed in Data Access Portfolio Document (DAP)

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2.3 Ordering

The third step of this process is the data ordering. Once the DAP is published with the assigned quota, involved partners in the process must be registered in the CSCDA portal https://spacedata.copernicus.eu/ to submit their data request. The procedure to be followed by new users could be found in the following link https://spacedata.copernicus.eu/web/cscda/data-access/registration. The ordering process is also detailed in the CSCDA portal under the ordering section https://spacedata.copernicus.eu/web/cscda/data-access/ordering.

As mentioned in the section before, the formal ordering was not performed by EO4AGRI project due to the costs that would imply and therefore, the ordering never took place.

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3 Use of additional datasets for EO4AGRI (2019)

Not applies

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4 Conclusions

Although at the beginning of the project it was planned to request EO datasets via the DWH mechanisms in order to support part of the requirements and gap analysis activities concerning the Paying Agencies and the CAP Monitoring, it was early disregarded due to the high budgetary cost that it would imply acquiring them.

Therefore, the present deliverable provides no description of the use of Additional data sets during the year 2019 has been included as no datasets where officially requested.

Notwithstanding, the document describes, for historical reasons, the datasets that were originally planned for request.

Focus of the project, being a Coordination and Support Action (CSA), was never on the processing and analysis of EO data as it might be the case for Research and Innovation Actions (RIAs) or Innovation Actions (IAs) which depend on them in order to carry out their activities. Therefore, the impact on EO4AGRI for not being able to perform the request has been minimal.

As a final remark, in principle, there are no plans in the project to order ADD datasets from DWH mechanism for 2020.

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References

[1] G. Ottavianelli. Copernicus Space Component Data Access Portfolio (DAP v2.6): Data Warehouse 2014 – 2020. 14/10/2019, Issue/Revision 2.6 [Online]. Available: https://spacedata.copernicus.eu/documents/12833/14545/DAP+Document+-+current/c2449218-3ed9-434a-b32c-edfbb95b9362

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