Project Management Plan

D5.1

Polar View Team

Version 1.1, 19/09/2024

DESIDE - Project Management Plan

Destination Earth DESP Use Cases: DestinE Sea Ice Decision Enhancement (DESIDE) *Project Management Plan* D5.1

COMMENTS and ISSUES If you would like to raise comments or issues on this document, send an email to david.arthurs@polarview.org.	**PDF** This document is available in PDF format here.
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AMENDMENT HISTORY

This document shall be amended by releasing a new edition of the document in its entirety. The Amendment Record Sheet below records the history and issue status of this document.

Table 1. Amendment Record Sheet

ISSUE	DATE	REASON
0.1	10/12/2023	Initial in-progress draft
1.0	12/12/2023	First version
1.1	19/09/2024	Second version

Chapter 1. Introduction

1.1. Purpose and Scope

This document represents the Project Management Plan (PMP) for the Destination Earth DESP Use Cases: DestinE Sea Ice Decision Enhancement (DESIDE) project 8482 with ESA contract 4000140320/23/I-NS.

1.2. Structure of the Document

Chapter 2, *Overview*

This section provides an overview of the Destination Earth DESP Use Cases: DestinE Sea Ice Decision Enhancement (DESIDE).

Chapter 3, *Work Description*

Chapter 4, *Team Organization*

Chapter 5, *Schedule*

Chapter 6, *Deliverables*

1.3. Reference Documents

The following is a list of Applicable and Reference Documents with a direct bearing on the content of this document.

Reference	Document Details	Version
[SOW]	Statement of Work Destination Earth DESP Use Cases selection - Round 1 Reference: CS301353.Docref.0002	1.0
[Proposal]	Proposal No. 8482: DestinE Sea Ice Decision Enhancement (DESIDE)	1.1 06/06/2023

1.4. Terminology

The following terms have been used in this document.

Term	Meaning
Admin	User with administrative capabilities on a platform.
Code	The codification of an algorithm performed with a given programming language - compiled to Software or directly executed (interpreted) within the platform.

Term	Meaning
Discovery	User finds products/services of interest to them based upon search criteria.
Interactive Web Application	An Interactive Application for analysis provided as a rich user interface through the user's web browser.
Key-Value Pair	A key-value pair (KVP) is an abstract data type that includes a group of key identifiers and a set of associated values. Key-value pairs are frequently used in lookup tables, hash tables and configuration files.
Object Store	A computer data storage architecture that manages data as objects. Each object typically includes the data itself, a variable amount of metadata, and a globally unique identifier.
Products	EO data (commercial and non-commercial) and Value-added products.
Software	The compilation of code into a binary program to be executed within the platform on-line computing environment.
User	An individual using the services.
Visualization	To obtain a visual representation of any data/products held within the platform - presented to the user within their web browser session.
Web Coverage Service (WCS)	OGC standard that provides an open specification for sharing raster datasets on the web.
Web Feature Service (WFS)	OGC standard that makes geographic feature data (vector geospatial datasets) available on the web.
Web Map Service (WMS)	OGC standard that provides a simple HTTP interface for requesting geo-registered map images from one or more distributed geospatial databases.
Web Map Tile Service (WMTS)	OGC standard that provides a simple HTTP interface for requesting map tiles of spatially referenced data using the images with predefined content, extent, and resolution.
Web Processing Services (WPS)	OGC standard that defines how a client can request the execution of a process, and how the output from the process is handled.

1.5. Glossary

The following acronyms and abbreviations have been used in this document.

Term	Definition
ADD	Architecture Design Document
AOI	Area of Interest
API	Application Programming Interface
COG	Cloud optimized GeoTiff
EO	Earth Observation

Term	Definition
EOX	EOX IT Services GmbH
ESA	European Space Agency
FUSE	Filesystem in Userspace
ICD	Interface Control Document
JSON	JavaScript Object Notation
KVP	Key-value Pair
M2M	Machine-to-machine
OGC	Open Geospatial Consortium
PMP	Project Management Plan
REST	Representational State Transfer
SDD	Software Design Document
SFTP	Secure File Transfer Protocol
SRF	Software Reuse File
SRN	Software Release Note
SRP	Software Release Plan
SRS	Software Requirements Specification
SSH	Secure Shell
STAC	Spatio-Temporal Asset Catalog
SUM	Software User Manual
SVVP	Software Verification and Validation Plan
SVVR	Software Verification and Validation Report
TOI	Time of Interest
UMA	User-Managed Access
US	User Story
WCS	Web Coverage Service
WFS	Web Feature Service
WMS	Web Map Service
WMTS	Web Map Tile Service
WPS	Web Processing Service
WPS-T	Transactional Web Processing Service

Chapter 2. Overview

Polar View Earth Observation Limited is working in collaboration with EOX IT Services, Drift+Noise Polar Services, the Danish Meteorological Institute, the Norwegian Meteorological Institute, and the Finnish Meteorological Institute to develop a fully functional Use Case that utilizes the DESP/DestinE system capabilities and data and adds value to meet the needs of policy and decision makers who require information on the past, current, and forecasted sea ice and other relevant conditions for operational purposes in the Baltic Sea, European Arctic Ocean, and the rest of the polar regions.

The Use Case will build on and complement existing operational and climate sea ice products and services including those provided by the Copernicus Marine Service, the national Ice Services, the ESA Polar Thematic Exploitation Platform (Polar TEP), and the commercial Drift+Noise IcySea app. The Use Case will augment and improve on the current offerings by:

- Aggregating information of different types and from different sources to provide common products that span jurisdictional boundaries.
- Producing new products that will improve the ability of users to make good decisions.
- Making the products available in ways and means that are appropriate for the skills and requirements of different user communities.

One driver for the project is the regulation of the International Maritime Organization (IMO) of the United Nations mandating that ships operating in the polar regions meet certain requirements (the Polar Code). Among other things, the Polar Code specifies a range of information that ships traveling in polar waters are required to access for planning and operations. The Use Case will demonstrate the value of short and medium-term forecasts of sea ice, meteorological, and ocean conditions suitable for strategic and tactical decision making by ships and their owners.

A second driver for the project is the effect of climate change on polar conditions that will impact long-term planning and policy development for polar operations such as fishing, tourism, scientific research campaigns, oil and gas development, and supplying northern communities. The Use Case will deliver long-term forecasts of how changing sea ice and other conditions will affect where different types of ships will be able to travel in the polar regions compared to historical averages.

Benefits to polar operations and the rest of society will include increased safety of life and property, decreased pollution, and protection of sensitive environmental areas.

This document presents the Project Management Plan (D5.1) for that work. It contains the following sections:

- Work Description
- Team Organization
- Schedule
- Deliverables

This is a living document and will be updated continuously and presented at each milestone (see Section 5.1, “Milestones”).

Chapter 3. Work Description

The Work Breakdown Structure (WBS) of the project consists of four Work Packages:

- WP1 Project Management
- WP2 Agile Use Case Development and Demonstration
- WP3 Use Case Promotion
- WP4 Use Case Exploitation

The Work Packages and their constituent tasks are described in the tables below.

Table 2. Work Package 1

Project: DestinE Sea Ice Decision Enhancement (DESIDE)		
WP Title: Project Management		WP No: 1
Start Event: KO	Start Date: KO	WP Leader: David Arthurs
End Event: FR	End Date: KO+12 months	Level of Effort: 649 hours
WP Objectives: Manage the activity and ensure all tasks are executed on time, on budget and on schedule according to the Project Management Plan. Contribute as necessary to all plans, processes, and tools for the execution and validation of the ESA-DEUC project.		
Tasks		Responsible
WP 1.1: Project Management and Control • Develop and maintain the Project Management Plan • Coordinate Use Case development. Monitor progress, identify potential delays, and implement adequate mitigation measures. • Ensure required coordination between WPs. Integrate Use Case demonstrations and deliverables with outreach activities. • Coordinate submission of invoices and deliverables. • Ensure application of quality management standards. • Manage the relevant Use Case repository under the DestinE organization on GitHub, as applicable.		David Arthurs
WP 1.2: Client Communications • Interface with RHEA and provide support to periodical reporting.		David Arthurs

WP 1.3: Project Deliverables • Provide monthly and quarterly progress reports. • Provide minutes of meetings. • Confirm quality and completeness of all deliverables. • Ensure timely submission of all reports and deliverables.	David Arthurs
WP 1.4: Project Meetings • Provide support to progress and coordination meetings and provide minutes. • Show implementation progress based on agile development methods. • Hold project reviews: Kick-Off (KO), Release Reviews (RR1, RR2, RR3), and Final Review (FR).	David Arthurs
Inputs	From
SoW	RHEA
ESA-DEUC Project Management Plan Documentation	RHEA
Proposal	Polar View
DESP Documents	RHEA
Deliverables	Delivery Date
D5.1 Project Management Plan	KO, RR1, RR2, RR3
[PR] Progress Reports	Monthly
[QU] Quarterly Updates	RR1, RR2, RR3
[FR] Final Report	FR
[CCD] Contract Closure Document	FR

Table 3. Work Package 2

Project: DestinE Sea Ice Decision Enhancement (DESIDE)		
WP Title: Agile Use Case Development and Demonstration		WP No: 2
Start Event: KO	Start Date: KO	WP Leader: Stephan Meißl
End Event: FR	End Date: KO+12 months	Level of Effort: 3,422 hours
WP Objectives: Using an agile methodology, plan, specify, design, test, review, and launch the DESIDE Use Case.		
Tasks		Responsible

WP 2.1: End-User Engagement • Gather user requirements from previous studies and the End-User Representative Group. • Develop and validate user stories. • Test use of the application. • Identify and address user skill gaps that would hinder uptake of the Use Case.	Lasse Rabenstein
WP 2.2: Software Development • Through an Agile methodology, develop the Use Case software, including the following activities: planning; four epics of requirements definition, design, development, testing and review; and launch. • Engage end-users in the co-design of the solution at the requirements definition and testing/review stages. • Engage RHEA and ESA in the design and review stages. • Produce quarterly releases focused on 1) Polar TEP, 2) Polar Dashboard, 3) IcySea, 4) Overall DESIDE Use Case integration.	Stephan Meißl
WP 2.3: Open-Source Software Management • Monitor bug reports and requests for new features by the DestinE community. • Manage pull requests with community contribution. • Document new and updated requirements to the User Requirement Register.	Stephan Meißl
WP 2.4: DESP Developer Liaison • Access DESP services. • Validate use requirements against DESP capabilities. • Make the DESIDE Use Case suitable for integration in DESP as a third-party external service.	Stephan Meißl
Inputs	From
ESA-DEUC-RS-23-03 Users Early Recommendations [RD-1]	RHEA
Proposal	Polar View
Users' Feedback	Polar View
Deliverables	Delivery Date
[D5.2] Use Case Descriptor	KO+1, RR1, RR2, RR3, FR
[D5.3] Use Case Application	KO+1, RR1, RR2, RR3, FR

[SRS] Software Requirement Specifications	KO+1, RR1, RR2, RR3, FR
[SVVP] Software Verification and Validation Plan	KO+1, RR1, RR2, RR3, FR
[SVVR] Software Verification and Validation Report	RR1, RR2, RR3, FR
[SRF] Software Reuse File	RR1, RR2, RR3, FR
[SRP] Software Release Plan	KO+1, RR1, RR2, RR3, FR
[D5.4] User Validation Report	FR

Table 4. Work Package 3

Project: DestinE Sea Ice Decision Enhancement (DESIDE)		
WP Title: Use Case Promotion		WP No: 3
Start Event: KO	Start Date: KO	WP Leader: Lasse Rabenstein
End Event: FR	End Date: KO+12 months	Level of Effort: 476 hours
WP Objectives: Engage with users and promote awareness of the DestinE platform, applications and services.		
Tasks		Responsible
WP 3.1: Use Case Promotion Package • Prepare the Use Case Promotion Package.		Lasse Rabenstein
WP 3.2: DestinE Participation • Provide quarterly content for the DestinE website. • Participate in workshops and events related to DestinE. • Contribute a module to the DestinE MOOC.		David Arthurs
Inputs		From
ESA-DEUC Promotion Package		RHEA
Deliverables		Delivery Date
[D5.5] Use Case Promotion Package		RR1, RR2, RR3, FR

Table 5. Work Package 4

Project: DestinE Sea Ice Decision Enhancement (DESIDE)		
WP Title: Use Case Exploitation		WP No: 4
Start Event: RR3	Start Date: KO +9	WP Leader: Lasse Rabenstein

End Event: FR	End Date: KO+12 months	Level of Effort: 461 hours
WP Objectives: Provide a roadmap for the optimal implementation and exploitation of the Use Case application throughout the development period and beyond.		
Tasks		Responsible
WP 4.1: Use Case Exploitation Roadmap • Develop a Use Case exploitation roadmap that: • Is a high-quality and user-friendly document, • Provides traceable and quantifiable impact metrics. • Demonstrates the impact, benefits, usefulness, and performance of the developed application for the targeted end-users. • Illustrates the use and potential future exploitation of such applications within the larger DestinE system. • Demonstrates and documents the involvement of DestinE end-users in the co-design, review, and finalization of the application and related documentation. • Make documentation publicly available on the DestinE website.		Lasse Rabenstein
Inputs		From
[D5.3] Use Case Application		WP 2
[D5.4] User Validation Report		WP 2
[SRS] Software Requirements Specifications		WP 2
Deliverables		Delivery Date
[D5.6] Use Case Exploitation Roadmap		FR

Chapter 4. Team Organization

Polar View is the prime contractor and responsible for the overall execution of the proposed activity. The team members and their roles are as follows:

- Danish Meteorological Institute (DMI) – Coordination of decision support information for Greenland waters (Baffin Bay, Labrador Sea, Greenland Sea)
- Finnish Meteorological Institute (FMI) – Coordination of decision support information for the Baltic Sea.
- Norwegian Meteorological Institute (MET Norway) – Coordination of decision support information for the Norwegian Sea and Barents Sea.
- EOX – Lead for Software and responsible for Polar TEP and Polar Dashboard platforms.
- Drift+Noise – Lead for End-users and responsible for the IcySea app that provides decision information to ships.

A critical aspect of the proposed work scope is the active and effective engagement of end-users concerned with polar and Baltic Sea operations. To this end, an end-user representative group has been established to provide advice to the technical team, articulate end-user information requirements, and review agile development output. The members of the end-user representative group are:

- International Ice Charting Working Group (IICWG)
- Finnish Transport Infrastructure Agency
- Ponant
- Alfred Wegener Institute
- Arctic Monitoring and Assessment Programme (AMAP)

Polar View has assigned David Arthurs as the Project Manager to lead the proposed activity. The Project Manager will report to the Technical Officer assigned by RHEA on all aspects related to the planning and execution of the project. Where required, the Project Manager will interface with other contact points at RHEA and ESA. The Project Manager is supported by the Software and End-User Leads, Stephan Meißl and Lasse Rabenstein respectively. Each Lead will be responsible for all related tasks and deliverables and will interface as required with all task contributors.

Table 6, “Key Personnel Roles” shows the project team’s key personnel and their roles.

Table 6. Key Personnel Roles

Name	Role
David Arthurs	Project Manager
Till Rasmussen	Liaison, DMI products and services
Marko Mäkynen	Liaison, FMI products and services
Øystein Godøy	Liaison, MET Norway products and services
Stephan Meißl	Software lead

Name	Role
Lasse Rabenstein	End-Users lead

Chapter 5. Schedule

5.1. Milestones

The project started on 15 February 2024 and will proceed for 12 months. The timing of the project milestones is shown in Table 7, “Project Reviews” and illustrated in the bar chart of Figure 1, “Project Schedule”.

Table 7. Project Reviews

Review	Description	Deliverables	Schedule	Venue
RR 1	Focus on Polar TEP	D5.1, D5.2, D5.3, D5.5, SRS, SVVP, SVVR, SRF, SRP	29 April 2024	Virtual
RR 2	Focus on Polar Dashboard	D5.1, D5.2, D5.3, D5.5, SRS, SVVP, SVVR, SRF, SRP	KO + 7 months	Virtual
RR 3	Focus on IcySea	D5.1, D5.2, D5.3, D5.5, SRS, SVVP, SVVR, SRF, SRP	KO + 9 months	Virtual
Final Review	Focus on integration across Polar TEP, Polar Dashboard, and IcySea. Presentation of final project results.	D5.1, D5.2, D5.3, D5.4, D5.5, D5.6, SRS, SVVP, SVVR, SRF, SRP, FR, CCD	KO + 12 months	Virtual

5.2. Bar Chart

Figure 1, “Project Schedule” shows the project schedule, including all proposed Work Packages, meetings, deliverables, and progress reports.

Work Package		Project Month											
Package	Title	1	2	3	4	5	6	7	8	9	10	11	12
			KO+1	RR1			RR2			RR3			FR
WP 1	**Project Management**												
WP 1.1	Project Management and Control		D5.1	D5.1			D5.1			D5.1			D5.1
WP 1.2	Client Communications												PR, QU
WP 1.3	Project Deliverables		PR	PR, QU	PR	PR	PR, QU	PR	PR	PR, QU	PR	PR	PR, QU, FR, CCD
WP 1.4	Project Meetings			M			M			M			M
WP 2	**Agile Use Case Development and Demonstration**												
WP 2.1	End-User Engagement			D5.2			D5.2			D5.2			D5.2
WP 2.2	Software Development		D5.3, SRS, SVVP, SRP	D5.3, SRS, SVVP, SVVR, SRF, SRP			D5.3, SRS, SVVP, SVVR, SRF, SRP			D5.3, SRS, SVVP, SVVR, SRF, SRP			D5.3, D5.4, SRS, SVVP, SVVR, SRF, SRP
WP 2.3	Open-Source Software Management												
WP 2.4	DESP Developer Liaison												
WP 3	**Use Case Promotion**												
WP 3.1	Use Case Promotion Package			D5.5			D5.5			D5.5			D5.5
WP 3.2	DestinE Participation												
WP 4	**Use Case Exploitation**												
WP 4.1	Use Case Exploitation Roadmap												D5.6

Legend:													
D5.1	Project Management Plan	WP1	KO+1, RR1, RR2, RR3, FR										
D5.2	Use Case Description	WP2	KO+1, RR1, RR2, RR3, FR										
D5.3	Use Case Application (software)	WP2	KO+1, RR1, RR2, RR3, FR										
D5.4	User Validation Report	WP2	FR										
D5.5	Use Case Promotion Package	WP3	RR1, RR2, RR3, FR										
D5.6	Use Case Exploitation Roadmap	WP4	FR										
PR	Progress Reports	WP1	Monthly										
QU	Updates	WP1	Quarterly										
SRS	Software Requirement Specification	WP2	KO+1, RR1, RR2, RR3, FR										
SVVP	Software Verification and Validation Plan	WP2	KO+1, RR1, RR2, RR3, FR										
SVVR	Software Verification and Validation Report	WP2	RR1, RR2, RR3, FR										
SRF	Software Reuse File	WP2	RR1, RR2, RR3, FR										
SRP	Software Release Plan	WP2	KO+1, RR1, RR2, RR3, FR										
FR	Final Report	WP1	FR										
CCD	Contract Closure Documentation	WP1	FR										
M	Project Minutes	WP1	RR1, RR2, RR3, FR										

Figure 1. Project Schedule

Chapter 6. Deliverables

All documentation will be delivered electronically in a format agreed with by Starion. Draft versions will be sent to the Technical Officer not later than two weeks before the documentation is to be presented.

The content of all documentation will, at a minimum, cover that outlined in the ITT and as guided by the Technical Officer.

Table 8. Project Deliverables

Code	Title	Work Package	Delivery
D5.1	Project Management Plan		KO+1, RR1, RR2, RR3, FR
D5.2	Use Case Description		KO+1, RR1, RR2, RR3, FR
D5.3	Use Case Application (software)		KO+1, RR1, RR2, RR3, FR
D5.4	User Validation Report		FR
D5.5	Use Case Promotion Package		RR1, RR2, RR3, FR
D5.6	Use Case Exploitation Roadmap		FR
PR	Progress Reports		Monthly
QU	Updates		Quarterly
SRS	Software Requirement Specification		KO+1, RR1, RR2, RR3, FR
SVVP	Software Verification and Validation Plan		KO+1, RR1, RR2, RR3, FR
SVVR	Software Verification and Validation Report		RR1, RR2, RR3, FR
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SRP	Software Release Plan		KO+1, RR1, RR2, RR3, FR
FR	Final Report		FR
CCD	Contract Closure Documentation		FR

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