UPC - HIRO

ESEIAAT

Project DEOS-UD: Disruptive Earth Observation Sensing for Urban Developement

HIRO

Deliverable 1
Project Charter

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1 Project Charter

1.1 Project Purpose and Justification

Since the first Earth observation (EO) satellite was launched in 1957, the need to gather remote sensed information about planet Earth has been increasing along with its technology. Today, after 60 years, EO has become a key piece of society by providing data for maritime, weather and air quality control together with urban development.

Moreover, modern civilizations are now wanted and required to continue to be developed in sustainable ways and its negative impacts to be controlled and minimized. Is in this area where EO plays a significant role being able to collect data to give awareness as well as to provide information for social well-being and sustainable improvements.

On the other hand, besides the large amount of gathered data and the sophisticated technology used, in the recent years there has been and increasing demand for EO improved technology that allows going further in terms of reliability, size, resolution, efficiency and accuracy along with improved data processing systems with better combined data reliance and capable of give information for a a higher number of applications.

Hence, this project aims to research and improve the existing EO technologies for remote sensing, develop a data processing software along with it containing machine learning algorithms focused on urban sustainable developments such as pollution and gas emission control, traffic monitoring, weather prediction, management of urban areas, regional and local planning, tourism development and cityscapes designs, and develop a web based for data sharing.

The accomplishment of the project will demonstrate significant knowledge and enhancements concerning reliability, size, resolution, efficiency and accuracy among others of the current remote sensing technologies that not only will allow to gather better and more specific EO data, improving the results on their application fields but it will suppose a step forward in all those areas involving remote sensing from which the European society will benefit.

Also, the implemented data processor will provide information sets about sustainable development issues such as geospatial indicators, pollution levels or gas emissions that will benefit companies and initiatives from world-wide and local organisations to carry out social and green actions and will support the United Nation projects: UN 2030 Agenda for Sustainable Development and The Paris Agreement on Climate Change. Furthermore the project sharing web will allow the public to interact enriching and contributing in the integration of space in economy and society.

Additionally, the attainment of the improved sensors and data processing software is expected to serve process the data gathered by the Sentinels' satellites in order to benefit the current on-going Copernicus programme missions so as to equip them with better remote sensing technologies in the near future.

1.1.1 Vision

We are committed to achieving substantial improvements in state-of-the-art EO technologies such as radar and optical systems leading to a strengthening of Europe's position and competitiveness in this field.

1.1.2 Objectives

The key OBJECTIVES for this project are:

1. Improve EO sensor's technologies in terms of reliability, size, resolution, efficiency and accuracy
2. Manufacture a technology demonstrator prototype.
3. Simulate, test and validate the demonstrator prototype manufactured in relevant environment.
4. Develop a data processing software with machine learning algorithms focused on urban sustainable development applications.
5. Develop a web based server for data sharing.
6. Provide a technology whose benefits help urban sustainable development improving the European society.

1.1.3 Scope

The SCOPE for this project is:

- State of the art of the current space applications and requirements of the following optical and radar systems:
  - LIDAR
  - Radar
  - Super-spectral
  - Hyperspectral
  - Limb sounders
  - Gravimetry
  - High quantum efficiency photodetectors
  - High precision optical beam scanning and pointing
  - Advanced infra-red technologies
- State of the art of the contributions of current space technologies to urban development.
- Selection of the most promising systems to profit Earth Observation to air composition and terrain analysis.
- Research of the selected systems to determine how can they be improved.
- Development of sensor's preliminary design defining the minimum performance parameters in order to improve the existing technologies.
- Development of a software and interaction platform that treats the collected data and presents the result to its costumers.
- Manufacture of a technology demonstrator by following the preliminary design.
- Testing and validation of the demonstrator in a space simulated environment.
- Design closure of the product.

The following items are considered to be OUT of the SCOPE of this project:

- The launch and deployment of satellites that integrate this new technologies into space.
- The satellites monitoring.
- Communication and transfer of data between the satellite and the ground station.

1.2 Project Description

As stated earlier, the main objective of the project is to enhance the performance of the EO systems so as to use the information derived from data to build a greener future. More specifically, the focus is on the improvement of both optical and radar systems and how can they contribute to the sustainable development of cities.

To begin with, a research on the current technologies is carried out. This study makes it possible to determine which systems are more susceptible to further improvement. In order to demonstrate the advances in the aforementioned systems a prototype has to be manufactured and tested.

Moreover, in the scope of this project it has been included the development of a software that, once the data has been collected and received, treats the data in order to enable a more user-friendly data treatment on the final application and a web-based server for data sharing.

The project is grounded in initiatives such as the Copernicus programme. The Copernicus services aim at delivering nearly real-time data on a global level. This information allows us to better understand the planet we live in and secure a sustainable management of the environment. In fact, in context of the Copernicus, one of the previous H2020 calls has been involved in identifying possible potential evolutions of its space observation capabilities in order to build a climate resilient future. This call was focused in monitoring either the Polar Regions, agriculture or forests.

Among other, Copernicus obtains data thanks to a set of dedicated satellites carrying the name of Sentinel an each of them it has been developed for a specific need to provide accurate observation in each case. Nowadays, there is a total of six families of Sentinel. Hence, the idea is to take them a further step forward by equipping them with better remote sensing technologies.

1.3 High-Level Requirements

1.3.1 Call for proposals requirements

Item	Description
C1	Contribute to the integration of space in society and economy.
C2	Improvement of state-of-the-art technologies in key areas.
C3	Enhancement of capabilities with respect to existing Earth observation missions.

C4	Complementarity with activities already funded by Member States and the European Space Agency
C5	Extend Europe's position in industrial competitiveness in technologies for Earth observation payloads and missions.
C6	Promote industrial cooperation in research actions (including SMEs).
C7	Promote networking between academia and industry, accelerating and broadening technology transfer.

Table 1.3.1: Call of proposal requirements

1.3.2 Technical requirements

Item	Description
T1	Ensure the endurance of the overall system.
T2	Readiness for operational services.
T3	Ability to detect greenhouse gases.
T4	Ability to detect weather patterns for proper weather forecasting applications.
T5	Ability to perform a high precision terrain mapping for urban applications.
T6	The system must have a program for automatic updates and self-revision of possible issues.
T7	Availability of real-time information with a maximum delay of 1 second.
T8	15% increase of the reliability and precision of results compared to current technologies.

Table 1.3.2: Technical requirements

1.4 Acceptance Criteria

The acceptance criteria are important to define the performance requirements and the essential conditions that the deliverables of the project must attain. It is a quality parameter and the fact that they are fulfilled indicates that the client's needs have been reached.

Item	Description
Research and innovation	The project must be ambitious and use all available resources to obtain the best resu way, it must include the most appropriate technology that there is so far and, if it development phase, add a section of research.
Quality	The content of the project documentation must be clear, complete and unders Furthermore, it must be well structured, dividing the information into approach, dev and conclusions. All the documentation included in the project must first pass th inspection of the quality department.

Test and validations	The evaluation and validation tests must be carried out periodically and be registe project documentation, in such a way that there is a record of the different versio application throughout the development. The information of these tests must be clearly and refer to the regulations concerned, in addition to be verifiable. The these tests should be used to analyze the service level of the application and improv versions.
Technical documents	The application must have a user manual both internally and externally and a necessary information for its development. The performance of the final product reflected in a data sheet, it must also include in the documentation the datashe different components that are part of the application.
Viability	The project must be viable economically and technically, so that its realization is poss different parts of the project must be submitted at the individual level to a study th if it is possible to do them and, if not, search for an alternative. The budget of th must comply with the financial requirements of the European Union, for which must a balance to ensure that the allowed limit is not exceeded.
Performance	The systems used in the project must be able to guarantee the right functioni application. An important aspect of the project is its performance, in this way, as it p it aims to increase the efficiency and quantify this increase in the different phases.
Collaboration	It is interesting to obtain a better result to collaborate with legal entities from countries, as universities and research groups. Moreover, different collaborations w should be tried, in addition to they can benefit in turn and grow in the market.
Transparency	In case information about the project is required by the part of official organizatio European Union or by the different stakeholders that participate in it, the informa be shared with transparency.
Legal requirements	The applications and products of this project must have, if required, the certific approval of the different legislative and ethical frameworks.

Table 1.4.1: Acceptance criteria

1.5 High-Level Risks

Risks allow us to measure the probability of not accomplishing a defined goal and its consequences for the project. Their identification is crucial in order to know in advance the factors that could make the project go wrong.

The determination of the risks is an iterative process because, when the different activities

progresses through the specified time, new risks or uncertainties can appear. The main structures and departments of the team has to participate in this task in order to spot as many risks as possible. Even stakeholders has to provide additional information and points of view.

The factors that are used in the identification process are: enterprise environmental factors, organizational process assets, the project scope statement and the project management plan.

After analysing those points, risks have been classified into two groups: the External risks, which are the ones that our team cannot control, so they are inevitable, and the Internal risks, which can be detected in advance and be addressed properly by our own members.

The main identified risks are shown below.

External risks

- **Competitors appearance:** The emergence of other companies that could offer the same product. This could modify the benefits of our company.
- **Delays in external deliverables:** If the products that the company order do not arrive at the predicted time all the processes can experience a delay, incrementing costs.
- **Economical market issues:** During the period of time that the project is executed, there could be large-scale economic crisis.
- **Exit of a member of the corporation:** For different reasons, a member that had committed with the project could leave it before than expected.
- **Components and row materials quality:** The ordered equipment or materials could not be in a good condition, delaying processes and increasing costs.

Internal risks

- **Delays in deliverables:** The deliverables are not completed at the time of their corresponding deadlines, leading to an increase of costs and a delay of all the schedule of the project.
- **Cost forecasts are inaccurate:** The financial predictions could be wrong or different issues may occur increasing the total cost of the project.
- **Lack of communication:** The absence of a proper communication method or channel might affect at the quality of the product, at the fulfilment of the deadlines or a good coordination between members and departments.

- **Lack of technology improvement:** The main goal of the project is to innovate but it could happen that the company did not find the way to improve enough the different technologies.
- **Lack of information:** Discovering new technologies imply working with leading-edge science. It could occur that the team does not have access to the last improvements or patents.
- **Low team motivation:** The team does not have motivation and the project takes more time and costs to be completed.
- **Unsuccessful quality control:** The quality of some component, product or deliverable is not as was expected and established in the acceptance criteria.
- **Lack of responsibilities:** The responsibilities which were taken by the members of the team or the stakeholders could not be accomplished as expected.
- **Conflicts between members:** There is a disagreement over the project issues between executive members.
- **Infeasible design:** The design turns out to be excessively costly or is not possible to build.
- **Technology components have security vulnerabilities:** Security vulnerabilities are unwanted in high-tech projects if some government will use the technology.
- **Organization issues:** The project is not well organized in terms of timing, activities, etc. and the schedule is always changing.
- **Stakeholders desertion:** The abandonment of a Stakeholder could occur for several reasons, leaving the project without its contribution.
- **Stakeholders conflict:** Different executives of the Stakeholders have a disagreement over the project at an executive level.

When managing risks, both the probability and the consequence of them have to be considered. During the project, each event will be classified into different types of risks. In a general level, they can be classified into low, moderate and high risks. The following figure represents the classification depending on the probability and the magnitude of impact.

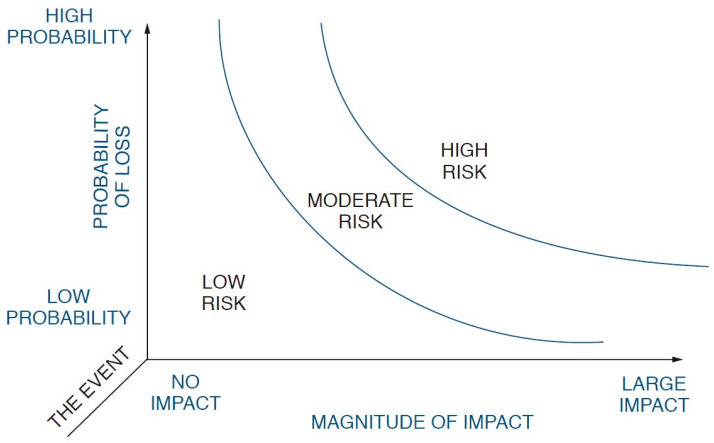


Figure 1.5.1: Overall risk is a function of its components [].

During the following stages of the project, each risk will be assessed with the Probability and Impact Matrix. It is a tool which allows you to rate risks on their probability and impact for the project. This gives you a quick and clear view of which one is more important to control.

Probability and Impact Matrix

Probability	Threats					Opportunities				
0.90	0.05	0.09	0.18	0.36	0.72	0.72	0.36	0.18	0.09	0.05
0.70	0.04	0.07	0.14	0.28	0.56	0.56	0.28	0.14	0.07	0.04
0.50	0.03	0.05	0.10	0.20	0.40	0.40	0.20	0.10	0.05	0.03
0.30	0.02	0.03	0.06	0.12	0.24	0.24	0.12	0.06	0.03	0.02
0.10	0.01	0.01	0.02	0.04	0.08	0.08	0.04	0.02	0.01	0.01
	0.05	0.10	0.20	0.40	0.80	0.80	0.40	0.20	0.10	0.05

Impact (ratio scale) on an objective (e.g., cost, time, scope or quality)

Each risk is rated on its probability of occurring and impact on an objective if it does occur. The organization's thresholds for low, moderate or high risks are shown in the matrix and determine whether the risk is scored as high, moderate or low for that objective.

Figure 1.5.2: Probability and Impact Matrix [].

1.6 Project deliverables

Deliverable Name	Description	Estimated due date

Project management plan	Document with detailed explanation of the project management strategies, including the Project Charter, stakeholder register, risk, quality and financial plans.	$t_0 + 1$ month
Business plan	Document detailing the market approach, including the selected suppliers, the identified costumers and the exploitation strategy.	$t_0 + 1$ month
Communication plan	Document containing all the planned dissemination strategies, such as the online communication (including website development and social media management), the offline communication (participation in meetings and conferences) and the dissemination materials (technology demonstrators).	$t_0 + 1$ month
State of the art report	Report detailing the current state of the art and the study of requirements for each system of the project.	$t_0 + 4$ month
Preliminary design report	Report determining the preliminary performance parameters of each sensor, as well as the technology necessary for the overall system.	$t_0 + 16$ month
Mid-term project report	Document used to check the current state of the project, in order to inform all the participants, including the stakeholders, of the progress.	$t_0 + 17$ month
Final design report	Report detailing the final design and technical specifications of each sensor developed, the software of the system and the interaction platform.	$t_0 + 29$ month
Validation report	Report gathering the results obtained from the fabrication and testing of all the payload sensors, the modular system and the interaction platform, as well as the full system testing.	$t_0 + 41$ month
Final report	Final document delivered, that includes all the development done through the execution of the project.	$t_0 + 44$ month

Table 1.6.1: Project Deliverables

1.7 Project milestones

Milestones Name	Description	Estimated due date
Kick-Off Meeting	First meeting of the project, formation of the development team and first contact with the stakeholders.	t_0 month
Project management plan	Specification of the objectives and scope of the project, the organization of the team and the distribution of tasks, a stakeholders register and a financial, quality and risk plans.	$t_0 + 1$ month
Business plan	Obtaining a potential suppliers list, and negotiating procurement conditions with them, as well as identifying and communicating with potential customers.	$t_0 + 1$ month
Communication plan	Development of a website and a social media strategy, as well as looking into participation in meetings and conferences.	$t_0 + 1$ month
State of the art report	Definition of requirements for the system based on the current state of the art space applications of the payload sensors.	$t_0 + 4$ month
Payload preliminary design	First phase of the design, an optimization of each sensor is done in order to define the preliminary minimum performance parameters.	$t_0 + 10$ month
Modular system preliminary design	Development of the initial parameters of the modular system, as well as the software that will be in charge of the fusion of the sensors' data.	$t_0 + 13$ month
Interaction platform preliminary design	Preliminary implementation of the functionalities of the interaction platform, such as the machine learning algorithms.	$t_0 + 16$ month
Mid-term project report	Mid-term report to evaluate and validate by all the stakeholders the status of the project.	$t_0 + 22$ month

Payload final design	Final design of the entire payload (sensors), including the specifications and estimated performance in operation of each sensor.	$t_0 + 23$ month
Modular system final design	Final design of the modular system and the software that will process and register the information received by the payload.	$t_0 + 26$ month
Interaction platform final design	Final design of the interaction platform according to the guidelines stablished on the preliminary design.	$t_0 + 29$ month
Prototype manufacturing	Manufacturing of the prototype according to the final designs, in order to test its function in the next steps.	$t_0 + 34$ month
Individual systems testing	Performance analysis of each module (payload, modular system and interaction platform) of the overall system under operational conditions.	$t_0 + 37$ month
Full system testing	Performance analysis of the overall system in operational conditions in order to test the interaction between components.	$t_0 + 41$ month
Final report	Final report that includes the complete development of the project.	$t_0 + 44$ month

Table 1.7.1: Project Milestones

1.8 Project Objectives

TABLE MISSING

1.9 Estimated Budget

The expenses originated during the development of the project are going to be covered with the contribution from the EU as a source of income.

The estimated budget of the project is 4,000,250.00€. The budget is calculated taking into account the required amount of money that each stakeholder needs to fulfil its part in the

project. In the next table it can be seen the expenses required for each stakeholder.

Table 1.9.1: Breakdown of the project budget.

Organization	Expenses
HIRO	200,250.00€
Airbus Defence and Space GmbH	400,000.00€
BHO Legal Rechtsanwälte Partnership	100,000.00€
Deimos Space S.L.U.	1,100,000.00€
ICUBE-SERTIT	500,000.00€
ReSAC	100,000.00€
Thales Alenia Space SAS	1,400,000.00€
VITO nv.	200,000.00€
Total	4,000,250.00€

The breakdown of the expenses for each organization is shown in more detail in the following tables. It has been considered six departments for each organization: management, engineering, marketing, partnership and Networks, contingencies and manufacturing. However, not all the organizations have all the departments defined before since each organization has a speciality, and therefore some of the departments will have zero expenses.

Table 1.9.2: Breakdown of the required budget of HIRO.

Concept	Expenses
Management	117,812.50€
Engineering	51,037.50€
Marketing	6,187.50€
Partnership and Networks	19,512.50€
Contingencies	5,700.00€
Manufacturing	0.00€
Total	200,250.00€

Table 1.9.3: Breakdown of the required budget of Airbus Defence and Space GmBH.

Concept	Expenses
Management	97,500.00€
Engineering	127,500.00€
Marketing	9,375.00€
Partnership and Networks	17,500.00€
Contingencies	8,125.00€
Manufacturing	140,000.00€
Total	400,000.00€

Table 1.9.4: Breakdown of the required budget of BHO Legal Rechtsanwlte Partnership.

Concept	Expenses
Management	59,375.00€
Engineering	0.00€
Marketing	0.00€
Partnership and Networks	20,625.00€
Contingencies	20,000.00€
Manufacturing	0.00€
Total	100,000.00€

Table 1.9.5: Breakdown of the required budget of Deimos Space S.L.U.

Concept	Expenses
Management	159,843.75€
Engineering	343,750.00€
Marketing	27,500.00€
Partnership and Networks	79,062.50€
Contingencies	146,093.75€
Manufacturing	343,750.00€
Total	1,100,000.00€

Table 1.9.6: Breakdown of the required budget of ICUBE-SERTIT.

Concept	Expenses
Management	95,625.00€
Engineering	225,000.00€
Marketing	64,375.00€
Partnership and Networks	87,812.50€
Contingencies	27,187.50€
Manufacturing	0.00€
Total	500,000.00€

Table 1.9.7: Breakdown of the required budget of ReSAC.

Concept	Expenses
Management	19,375.00€
Engineering	40,312.50€
Marketing	15,156.25€
Partnership and Networks	23,750.00€
Contingencies	1,406.25€
Manufacturing	0.00€
Total	100,000.00€

Table 1.9.8: Breakdown of the required budget of Thales Alenia Space SAS.

Concept	Expenses
Management	245,000.00€
Engineering	507,500.00€
Marketing	192,500.00€
Partnership and Networks	192,500.00€
Contingencies	63,000.00€
Manufacturing	199,500.00€
Total	1,400,000.00€

Table 1.9.9: Breakdown of the required budget of VITO nv.

Concept	Expenses
Management	87,187.50€
Engineering	49,687.50€
Marketing	24,375.00€
Partnership and Networks	28,750.00€
Contingencies	10,000.00€
Manufacturing	0.00€
Total	200,000.00€

1.10 Project organization

1.10.1 Customers

The following customers are defined for this project.

Table 1.10.1: Customers

Customer group	Customer representative
CGG: NPA Satellite Mapping Ltd	Jean-Georges Malcor – Chief Executive officer
CloudEO AG	Dr. Manfred Krischke – Co-Founder and CEO
Esri BeLux	Frederik Waûnters - Manager
European Space Agency (ESA)	Lionel Hernandez - Station manager in Spain
Eurosense	André Jadot – CEO
GEOMATRIX UAB	Gedas Vaitkus – Company Manager
Harris	Ed Zoiss – Electronic Systems
Insar	Martin Leško – Cartography expert
Noveltis	Jeff Vinuesa -Business Unit Manager
SpaceBel	Bernard Plano – International business development
Walphot	Yves Reginster – Account manager

1.10.2 Stakeholders

The stakeholders of the project will be classified depending on its role/responsibility. The possible roles and responsibilities are shown in Table 1.10.2.

Roles/Responsibilities	**Definition**
Interested	Entity with interest in the project or its result without the authority to contribute in it.
Competitor	Entity with similar interest as the ones of the present project without authority to contribute in it but with the probability of working in the same field in other projects.
Consortium member	Entity interested in the project that will actively collaborate in its elaboration as a partner.
Customer	Entity with interest in the results of the project and with authority to request updates and propose modifications.
Investor	Entity that will support the project financially. It has interest in the project and the authority to request updates and propose modifications.

Table 1.10.2: Definition of roles and responsibilities of stakeholders

The key stakeholders in this project are the ones shown in Table 1.10.3.

Stakeholder Name	Roles/Responsibilities
ACRI-ST SAS	Interested
Agroapps PCC	Interested
Air and Space Evidence	Interested
Airborne technologies	Competitor
Airbus Defence and Space GmbH	Consortium member
AnsuR Technologoes	Competitor
Assimila	Interested
Balam Ingeniería de Sistemas	Competitor
BHO Legal Rechtsanwälte Partnership	Consortium member
CGG: NPA Satellite Mapping Ldt	Customer
CloudEO AG	Customer
Deimos Space S.L.U.	Consortium member
DHI-GRAS	Potential customer
Esri BeLux	Customer
European Association of Remote Sensing Companies (EARSC)	Interested
European Comission	Main investor and customer
European Council	Regulation
European Space Agency (ESA)	Customer
Eurosense	Customer
Exelis	Customer
Flyby	Competitor
GAF AG	Competitor
GEOMATRIX UAB	Customer
GEOSYSTEMS	Interested
GISAT	Competitor
Harris	Customer
High Innovative Remote Observation (HIRO)	Consortium member
ICUBE-SERTIT	Consortium member
Insar	Customer
Non-european space agencies	Competitors
Noveltis	Customer
Remote Sensing Application Center (ReSAC)	Consortium member
Space applications services NV/SA	Interested
SpaceBel	Customer
Telspazio	Interested
Thales Alenia Space SAS	Consortium member
VITO nv	Consortium member

Walphot	Customer

Table 1.10.3: List of stakeholders, roles and responsibilities

1.10.3 Roles and responsibilities

The following key roles have been defined for this project:

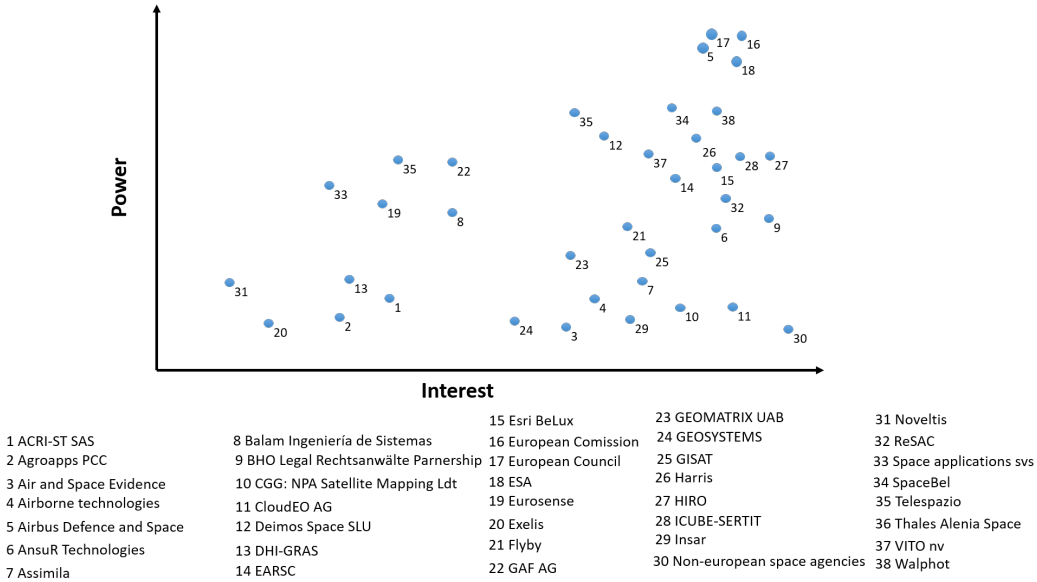
Role	Resource Name	Organization	Responsabilities
Project Sponsor	Luís Manuel Pérez Llera	European Commission	Supervise the project.
Project Manager	Pol Fontanes Molina	HIRO	Manage the project.
Project Secretary	Sílvia González García	HIRO	Administrate the internal documents and information of the group to ensure communication between the members.
Financial Manager	Santiago Lopezbarrena Arenas	HIRO	Estimate and control the costs of the project.
Stakeholders & Procurement Manager	Eva María Urbano González	HIRO	Identify the stakeholders of the project and control their engagement. Plan, conduct and control the procurements of the project.
Scope & Time Manager	Marina Pons Daza	HIRO	Define and control the scope of the project.
Risk Manager	Borja Calderón Rosario	HIRO	Identify and manage the possible risks of the project.
Quality Manager	Guillermo Escartín Vivancos	HIRO	Control the quality requirements of the project.
Technical Managers	David Pérez Sánchez, Hamza Nachett, Laura Pla Olea	HIRO	Identify, analyse and control the technical aspects of the project.

Role	Resource Name	Organization	Responsabilities
Marketing & Communications Managers	Albert Herrando Moraira, María De Benedicto Barba	HIRO	Promote the project and its final product. Search for possible customers. Identify, analyse and control the technical aspects of the project.
Research & Development assessor	-	Airbus Defence and Space GmbH	Collaboration in the research and production of satellite sensors.
Legal & Business Assessor	-	BHO Legal Rechtsanwälte Partnership	Business and legal advice.
Research & Development Assessor	-	Deimos Space S.L.U.	Design and development of satellite sensors and systems.
Application collaborator	-	ICUBE-SERTIT	Assessment in the application of data provided by EO satellites such as Sentinel.
Application collaborator	-	Remote Sensing Application Center (ReSAC)	Assessment in the application of remote sensing and geographic information systems products for land cover/land use, urban planning, infrastructure, etc.
Development & Testing collaborator	-	Thales Alenia Space SAS	Design, development, integration and testing of space systems.
Development & Application collaborator	-	VITO nv	Assesment in the possible use of remote sensing for land use. Development of new remote sensing systems, sensors and platforms.

Table 1.10.4: Roles and responsibilities

2 Stakeholder identification

2.1 Stakeholder analysis graphic



1 ACRI-ST SAS
2 Agroapps PCC
3 Air and Space Evidence
4 Airborne technologies
5 Airbus Defence and Space
6 AnsuR Technologies
7 Assimila
8 Balam Ingeniería de Sistemas
9 BHO Legal Rechtsanwälte Parnership
10 CGG: NPA Satellite Mapping Ldt
11 CloudEO AG
12 Deimos Space SLU
13 DHI-GRAS
14 EARSC
15 Esri BeLux
16 European Comission
17 European Council
18 ESA
19 Eurosense
20 Exelis
21 Flyby
22 GAF AG
23 GEOMATRIX UAB
24 GEOSYSTEMS
25 GISAT
26 Harris
27 HIRO
28 ICUBE-SERTIT
29 Insar
30 Non-european space agencies
31 Noveltis
32 ReSAC
33 Space applications svs
34 SpaceBel
35 Telespazio
36 Thales Alenia Space
37 VITO nv
38 Walphot

Figure 2.1.1: Stakeholder analysis graphic

2.2 Stakeholder register

Name	Role	Contact Information	Requirements	Expectations	Influence	Classification
Airbus Defence and Space GmbH	Consortium member	*+33 562194040*	Innovation in optical sensors and the development of their technology	Obtain new knowledge in optical sensors and in the technology to develop them	Manage closely	Internal/ Supporter
High Innovative Remote Observation (HIRO)	Consortium member	*+34 677261221*	Integration of new EO technologies into the Copernicus Programme	Develop the project	Manage closely	Internal/ Main participant
BHO Legal Rechtsanwälte Partnership	Consortium member	*+49 2212709560* *cologne@bho-legal.com*	Wide legal knowledge	Legal issues management	Manage closely	Internal/ Supporter
Deimos Space S.L.U.	Consortium member	*+34 918063450* *info@elecnor-deimos.com*	Innovation in EO technology	Develop new technology for EO	Manage closely	Internal/ Supporter
ICUBE-SERTIT	Consortium member	*+33 368854645* *sertit@icube.unistra.fr*	Innovation in urban planning	Develop new solutions for urban planning using EO	Manage closely	Internal/ Supporter
Remote Sensing Application Center (ReSAC)	Consortium member	*+359 29800731* *resac@techno-link.com*	Innovation in urban planning	Develop new solutions for urban planning using EO	Manage closely	Internal/ Supporter

Name	Role	Contact Information	Requirements	Expectations	Influence	Classification
Thales Alenia Space SAS	Consortium member	*+33 157778000*	Innovation in EO technology	Develop new technology for EO	Manage closely	Internal/ Supporter
VITO nv	Consortium member	*+32 14335511*	Innovation in optical sensors and their possible uses	Obtain new knowledge in optical sensors and develop new uses for urban planning	Manage closely	Internal/ Supporter
European Council	Regulation	*+32 22816111*	Provide the legal environment for the development of the project	Fulfil the regulations and laws	Keep informed	External/ Supporter
European Comission	Main investor and customer	*+32 22999696*	Provide funding for the project	Evaluate the viability of the project	Manage closely	Internal/ Supporter
CGG: NPA Satellite Mapping Ldt	Customer	*www.cgg.com /en/What-We-Do/GeoConsulting/NPA*	-	Invest in a profitable project	Keep informed	External/ Influencer
CloudEO AG	Customer	*+49 89206021166* *info@cloudeo-ag.com*	-	Invest in a profitable project	Keep informed	External/ Influencer
DHI-GRAS	Customer	*+45 45169100* *gras@dhigroup.com*	-	Invest in a profitable project	Keep informed	External/ Influencer

Name	Role	Contact Information	Requirements	Expectations	Influence	Classification
Esri BeLux	Customer	*+32 24607480* *info@esribelux.com*	-	Invest in a profitable project	Keep satisfied	External/ Influencer
European Space Agency (ESA)	Customer	*+33 153697654*	-	Invest in a profitable project	Keep satisfied	External/ Influencer
Eurosense	Customer	*+32 24607000* *info@eurosense.com*	-	Invest in a profitable project	Keep informed	External/ Influencer
Exelis	Customer	*1-855-477-4272*	-	Invest in a profitable project	Keep satisfied	External/ Influencer
GEOMATRIX UAB	Customer	*www.geomatrix.lt/cms/index.php*	-	Invest in a profitable project	Keep informed	External/ Influencer
Harris	Customer	*1-855-477-4272*	-	Invest in a profitable project	Keep satisfied	External/ Influencer
Insar	Customer	*+421 233006847* *matusbakon@insar.sk*	-	Invest in a profitable project	Keep informed	External/ Influencer
Noveltis	Customer	*+33 0562881111* *contact@noveltis.fr*	-	Invest in a profitable project	Keep informed	External/ Influencer
SpaceBel	Customer	*+32 43618111*	-	Invest in a profitable project	Keep satisfied	External/ Influencer

Name	Role	Contact Information	Requirements	Expectations	Influence	Classification
Walphot	Customer	*+32 81302401* *info@walphot.com*	-	Invest in a profitable project	Keep satisfied	External/ Influencer
Airborne technologies	Competitor	*+43 2622347182 00* *office@airbornetechnologies.at*	-	Be a profitable project	Monitor	External/ Reluctant
AnsuR Technologoes	Competitor	*+47 64009456* *contact@ansur.no*	-	Failure of the project	Monitor	External/ Reluctant
Balam Ingeniería de Sistemas	Competitor	*info@balamis.com*	-	Failure of the project	Monitor	External/ Reluctant
Flyby	Competitor	*+39 0586505016* *info@flyby.it*	-	Failure of the project	Monitor	External/ Reluctant
GAF AG	Competitor	*+49 891215280* *info@gaf.de*	-	Failure of the project	Monitor	External/ Reluctant
GISAT	Competitor	*+42 271741935* *gisat@gisat.cz*	-	Failure of the project	Monitor	External/ Reluctant
Non-European space agencies	Competitors		-	Failure of the project	Monitor	External/ Reluctant

Name	Role	Contact Information	Requirements	Expectations	Influence	Classification
ACRI-ST SAS	Interested	*+33 492967500* *information@acri-st.fr*	-	Get interesting information about project updates	Keep informed	External/ Neutral
Agroapps PCC	Interested	*+30 2310253810* *info@agroapps.gr*	-	Get information about the project	Keep informed	External/ Neutral
Air and Space Evidence	Interested	*+44 7860473172*	-	Get information about the project	Keep informed	External/ Neutral
Assimila	Interested	*info@assimila.eu*	-	Get information about the project	Keep informed	External/ Neutral
European Association of Remote Sensing Companies (EARSC)	Interested	*info@earsc.org*	-	Get information about the project	Keep informed	External/ Neutral
GEOSYSTEMS	Interested	*+48 228511166* *office@geosystems.pl*	-	Get information about the project	Keep informed	External/ Neutral
Space applications services NV/SA	Interested	*+32 27215484* *info@spaceapplications.com*	-	Get information about the project	Keep informed	External/ Neutral

Name	Role	Contact Information	Requirements	Expectations	Influence	Classification
Telspazio	Interested	*+39 08353751* *info@e-geos.it*	-	Get information about the project	Keep informed	External/ Neutral

Table 2.2.1: Stakeholder register

3 | Bibliography