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Overall Strategy and Action Plan



2S02-032 ICAReS

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“Developing a network of regulatory bodies, government, and RS sector associations regarding regulation and legislation”

ICAReS

Common challenges

The 2 Seas area has challenges regarding innovation and environment such as strengthening innovation through increased research and design, exploiting opportunities, adaptation to climate change, conservation of biodiversity and natural resources, and discovering and conserving cultural heritage. Agriculture, nature and water are three major sectors in the 2 Seas area. These are the key sectors that face these challenges and require innovations in order to provide effective solutions. Increased use and development of Remote Sensing (RS) and data processing will create solutions to face these challenges and will also improve efficiency within these sectors.

Obstacles to the use of RS are a lack of knowledge/awareness of the potential of these techniques; a lack of awareness within small or medium-sized enterprises (SMEs) of the role that RS can play; a lack of suitable test or demonstration locations; and unclear policy on legislation on the use of drones for RS. Challenges include aggregation of sector demands, information provision to RS SMEs and knowledge institutes, sites for demonstrating (new) RS applications, harmonisation of legislation/regulations and a structure (durable cluster) to work together on these issues.

Overall Objective

To develop a cross border innovation cluster and create the necessary conditions for innovation in the field of remote sensing and advanced data communication & processing, based on needs of priority sectors nature, agriculture, and water & infrastructure. A durable innovation cluster will lead to the following benefits:

- Cross border cooperation in these sectors to ensure aggregation of demand.
- Acceleration of the creation of innovative remote sensing products & services.
- Substantial use of remote sensing and improved business operation in these sectors.
- Clarification of different national legislations.
- Joint lobby for better regulations to create business opportunities.

Summary of Work Package 3

Based on the information gathered in work packages 1 and 2, the RS innovation cluster will develop two strategies and two action plans within this work package 3. One of the strategies and

action plans is about the further innovation and usage of RS technologies in selected sectors, first per sector and then of the three selected sectors together. The focus of these actions is not only to explore new opportunities for innovative applications based on the aggregated demands, but also to strengthen the cluster itself. Another main issue is to develop a strategy and action plan for harmonisation of legislation and regulation in the four member states and if possible, in the whole EU. The partnership realises that this is not an easy job and that they will not achieve such a harmonisation in the time of this project, but the action plan of this strategy will also be executed beyond the end of the project. A third issue to be investigated in this work package is if there are other interesting sectors with demands for solutions that can be provided by the RS and data processing sector. An inventory will be made within different branches/sectors and if there is such a demand in specific sectors also for these sectors a concept strategy and agenda will be developed.



Activity A 3.3

Within the RS innovation cluster partners will investigate potential other interested sectors to become part of the innovation cluster and/or to set up a new innovation cluster. With these new sectors more critical mass will be created leading to new RS-innovations. With those potential sectors, meetings will be arranged to investigate their interests and discuss concept strategies.

Research setup

Based on the information gathered in Work package 1, 2 and 3, meetings, conferences, demonstrations, actions of the Impulse Group Demand, on-line and further discussions, the RS innovation cluster, partners investigated setup an Overall Strategy plan to strengthen the ICARes Innovation cluster consisting of a strategy, mission SWOT analysis and actions.



Strategy

INTERREG-ICAReS (funded by the Interreg 2 Seas programme 2014-2020 co-funded by the European Regional Development Fund under subsidy contract No 2S02-032) ICAReS) is an EU is funded a project with the main objective to develop a cross border innovation cluster and create the necessary conditions for innovation in the field of remote sensing and advanced data communication & processing, based on needs of the following 3 priority sectors: nature, agriculture, and water & infrastructure. The ICAReS cluster has led to the following benefits: cross border cooperation in these sectors to come to aggregation of demand, acceleration of creation of innovative remote sensing products & services, substantial use of remote sensing and improved business operations in these sectors, clarification of different national legislations, and a joint lobby for better regulations to create business opportunities.

Application of RS-technology tackles not only societal challenges, but also improves the efficiency of these sectors and promotes innovation in the RS sector itself. Obstacles and barriers to stimulate the use and promote the development of RS were a lack of knowledge and awareness in the 3 sectors regarding the possibilities of RS and vice versa, SMEs in the RS and data processing are not fully aware of the role they can play in these sectors. In addition, there was a lack of suitable test sites in order to demonstrate the potential of RS and to test new applications. And last but not least, governmental policies on certification and authorization for the use of RS/drones is not clear therefore potential users did not dare to start.

Mission Statement

The ICAReS Cluster is a cross border innovation cluster and created the necessary conditions for innovation in the field of remote sensing and advanced data communication & processing, based on needs of the following 3 priority sectors: nature, agriculture, and water & infrastructure.

Participants of the ICAReS cluster stimulate the use of Remote Sensing techniques are involved in the Impulse Group Demand, Task Group Legislation and Regulation or are actively involved in the Drone Regim initiative. All participants participate in the ICAReS community in which knowledge and experiences are shared across borders and built on the current network.

Participants endeavor to keep their supporters informed of all knowledge that is exchanged in the field of Remote Sensing and the new legislation and regulations. All activities will result in a joint lobby for better regulations to create business opportunities.



SWOT analysis

For the ICAReS Cluster a SWOT analysis has been made with the strengths, weaknesses, opportunities, and threats. For every part, the five most important items have been selected. This results in the following table.

Main strenghts of the organization		Main Weaknesses of the organization	
1	Large number of participants in the EU	1	Law and regulation
2	New EASA regulations in 2021	2	Qualified personel
3	Broad spectrum of the sectors	3	Cross border business opportunities
4	Cooperation with UVSi	4	UK and FR endusers
5	interest of public organisations	5	Lack of funding

Main opportunities of the organization		Main threats of the organization	
1	New technological solutions available like 5G or sensors	1	Providing continuity of the organization (without funding) – keeping information up to date
2	Wide spread test ranges available	2	Competing organisations
3	Research and Knowledge institutes and thinktanks available	3	Growth of market faster than organisation outputs
4	Fast growing market, wide range of applications also for other (new) sectors	4	Become self-preserving without adding value for participants or the market.
5	Ability to shape the law based on end-users needs	5	Losing value due to a lack of communication, a common platform and/or incentive

Based upon the different items of the SWOT analysis a cross-reference has been made. All items have been rated:

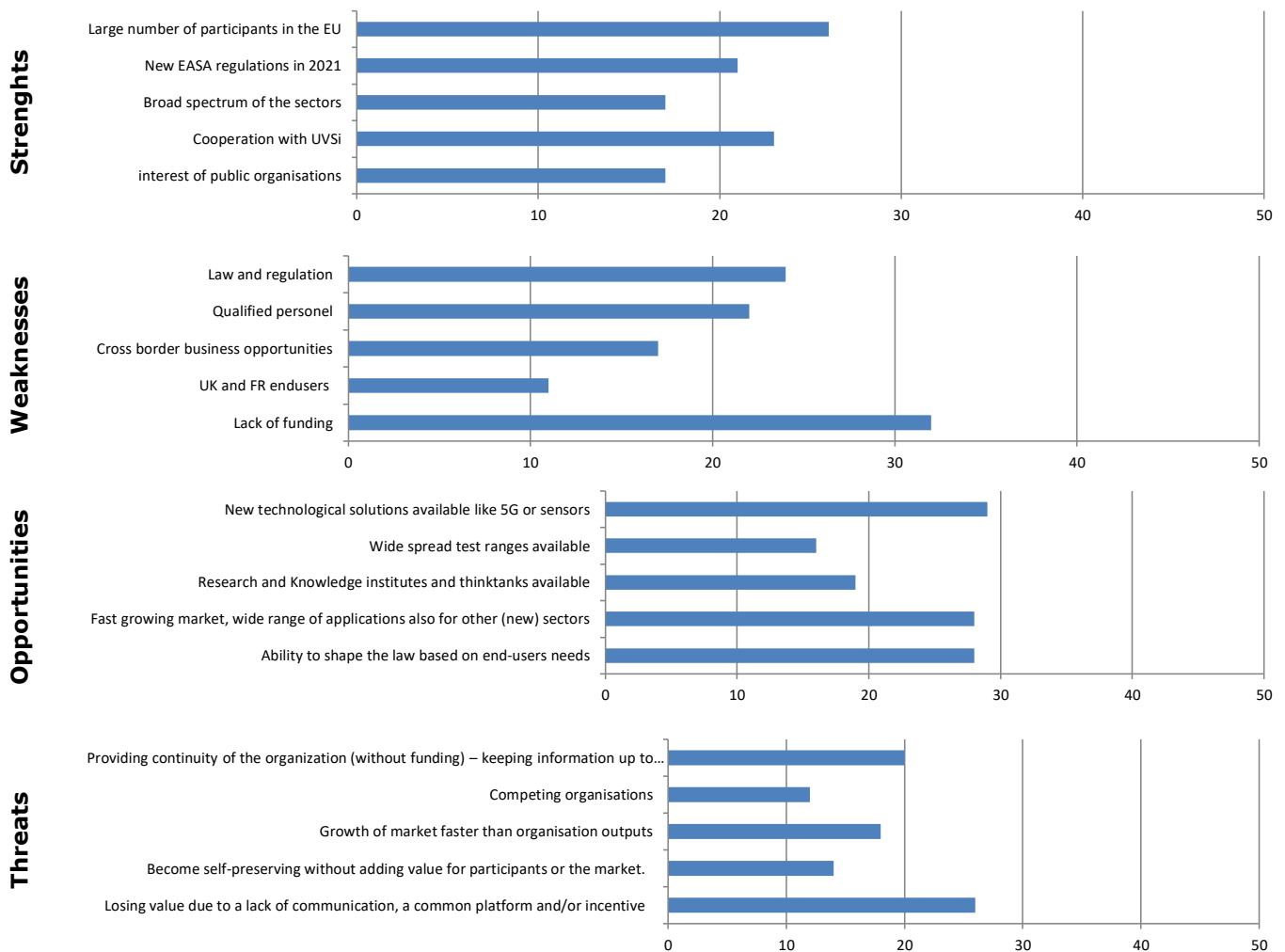
- 0 if the combination is no issue.
- 1 if the combination is an issue of slight value.
- 3 if the combination is an issue.
- 5 if the combination is an issue of important value.

This results in the following score per item.

Appreciate every combination with a
 0 (no issue)
 1 (issue of slight value)
 3 (issue)
 5 (issue of important value)

		Strenghts					Weaknesses				
		1	2	3	4	5	1	2	3	4	5
		Large number of participants in the EU	New EASA regulations in 2021	Broad spectrum of the sectors	Cooperation with UVSi	Interest of public organisations	Law and regulation	Qualified personnel	Cross border business opportunities	UK and FR endusers	Lack of funding
Opportunities	1	3	3	3	0	3	5	5	3	1	3
	2	1	3	1	3	0	3	1	1	0	3
	3	3	3	3	3	0	3	1	1	1	1
	4	3	3	3	1	3	3	3	3	1	5
	5	3	3	1	3	1	5	1	3	3	5
Threats	1	3	1	1	3	3	1	3	1	1	3
	2	1	0	0	3	0	0	3	1	1	3
	3	5	3	3	1	1	1	1	1	1	1
	4	1	1	1	3	3	0	1	0	1	3
	5	3	1	1	3	3	3	3	3	1	5

Based upon the cross reference a graph can be made of the importance of each strength, weakness, opportunity, and threat of the ICAReS Cluster. Using these ratings, the top three items of each category have been used to setup the Action Plan for the ICAReS Cluster.



Action Plan

Strengths

The ICAReS Cluster has three great strengths:

- Large number of participants in the EU.
- The cooperation with the UVSİ.
- The new EASA regulation in 2021.

Current and future actions

The ICAReS cluster will continue the cooperation with the UVSİ in Drone Regim to implement the new EASA regulation for each member state. This will benefit the large number of participants throughout the EU.

The participants will be kept informed with the new developments within the RS sector through the ICAReS website and newsletter emails will be send out to members. The partners of ICAReS will also keep their own network up to date with the information available.

Remote Sensing is still an embryonic area for the heritage and nature conservation sectors, and the opportunity to collaborate with other partners who are innovating in this area is vital. The Kent Downs AONB (KDAONB) will continue to use the demonstration projects undertaken as part of ICAReS to illustrate to these partners the applications of RS in these sectors. This will serve to continue to evolve and innovate the use of RS by utilizing the ICAReS network.

Weaknesses

In the cluster three weaknesses can be identified, these are:

- The lack of funding
- The current law and regulation.
- The availability of qualified personnel.

Current and future Actions

The ICAReS Cluster is no legal entity and is depends on the willingness of its participants and partners to stay involved. Through the MOU of ICAReS this willingness has been guaranteed. The virtual office, website, mobile test center and central test-site are at the end of 2020

transferred to the Dutch Drone Center (DDC). The DDC guarantees the continuation of the facilities after the ending of the project.

For new innovations, demonstrations and demands of priority sectors the DDC and the Gemeente Woensdrecht are participating with SME's and knowledge and research institutes to work out business cases. If needed, alternative funding through subsidies can be applied for.

The DDC and SME's related to Aviolanda are participating in Drone Regim to implement the new EASA regulation. Besides the participating DDC is applying for a test-status under the current regulations to assure that all tests and demonstration can be carried out in close cooperation with the airfield of Woensdrecht.

In July 2020, the professional education schools have been granted funding to promote and integrate technical education on RS techniques in their curriculums. RS applications, analyzing sensor data and drone technique will be a part of the education in the sectors Biobased, Agrofood, Logistics and Maintenance. The funding (€ 3,7 million) has been granted to 7 different regional schools. At DDC, the teachers at these schools will be contacting other schools in the Netherlands to see if they want to receive training on RS.

Funding remains a barrier to larger scale adoption of RS technologies in the heritage and environment sectors. However, KDAONB will continue to maintain the outputs from ICAReS beyond the life of the project. This is possible as the Interreg 2 Seas funding made available through ICAReS supported the RS elements of a wider-ranging project delivered by KDAONB called the Darent Valley Landscape Partnership Scheme (DVLPS). By piloting and demonstrating the innovative use of RS technologies in the early stages of the scheme

For the agricultural sector, ILVO started up the Living Lab Agrifood Technology (<https://agrifoodtechnology.be/en/about>). The Living Lab Agrifood Technology advances hands-on innovation and makes sustainable solutions available to all actors in the agrifood sector. In practice, this means that the lab promotes the exchange of know-how between end-users (farmers, agricultural contractors and food processing companies) and suppliers such as technology companies. This unique and diverse network of stakeholders allows for co-creation through pilot experiments, for example. This multi-stakeholder approach allows participants to develop and improve their own ideas. Agricultural drone applications are an important topic of the lab.

On regular intervals, ILVO organizes a 3day course (in collaboration with noordzeedrones.be) ‘Agricultural drone applications’ in order to further increase the number of qualified personnel for agricultural applications.

Opportunities

Three major opportunities are identified:

- New technological solutions available like 5G or sensors
- Fast growing market, wide range of applications also for other (new) sectors
- Ability to shape the law based on end-users needs

Current and future Actions

Together with different Flemish research organizations, ILVO is investigating new agricultural drone applications within the VLAIO funded project ‘Proeftuin Smart Farming 4.0’ (<https://www.industrie40vlaanderen.be/proeftuinen/smart-farming-40>) using different types of innovative sensors and platforms. ILVO will inform other ICARES cluster members about interesting opportunities and/or research results.

CITC is building a 5G test lab in partnership with a French telecom company to help companies test the use of 5G for their specific use cases. 5G is not yet deployed in France, but the Lille area was chosen back in 2019 for conducting early experiments on 5G. The city of Lille and the CITC organized in 2019 a contest and a call for projects for companies wishing to benefit from 5G early access in 2020. Among selected companies, one wanted to test the use of 5G in combination with drones for mission critical surveillance applications. That kind of drone usages will emerge in a near future and CITC, as a member of ICAREs cluster, will continue to inform cluster members of 5G-enabled drone application breakthroughs.

Innovations in the field of sensors may also have a significant impact on enabling new drone usages. Not all sensors are yet “drone-ready”, that is sufficiently small, lightweight, and power efficient to be embedded in a drone. Research in the field of sensors is very active and produce regular and continuous innovations which sometimes change the drone-readiness of some families of sensors. CITC is continuously monitoring progress in the field of sensors and as a member of ICARES cluster will continue to inform other cluster member of significant breakthrough that may impact drone use cases.

Threats

The three major threats of the ICAReS Cluster are

- Providing continuity of the organization (without funding) – keeping information up to date.
- Growth of market faster than organization outputs.
- Losing value due to a lack of communication, a common platform and/or incentive.

Current and future Actions



The following actions are and will be taken to mitigate the threats.

Through the use of own partners means the participants of the cluster are kept informed information and opportunities in the RS development.

The market and innovation is expected to grown exponential when the new EASA has been implemented. When this happens and the RS technologies are standard equipment in the demanding sectors the common goals of the sectors and the cluster have being reached. This can be seen as a threat but also as a strength.

The common platforms for interested participants are active like Dronethinkdo, DroneRegime, UVSi and ICAReS. Sometimes there is to much information for the demanding sectors. ICAReS will tranfer its platform and virtual office to the Dutch Drone Center. The DDC will use the platform to inform all participants off essential information to stimulate innovations and new partnerships.

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