



**AERIAL UPTAKE**  
aims to create  
supportive regional  
policies for unmanned  
aerial systems by  
exploring needs and  
barriers to innovation  
and commercialisation,  
including society's  
acceptance of UAS.

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## **ACTION PLAN**

# **PODKARPACKIE, POLAND**



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## 1. General information

**Project:** Removing barriers to the uptake of innovative Unmanned Aerial Systems in the EU

**Partner organisation:** Rzeszow Regional Development Agency

**Region:** Region Wschodni

**NUTS2 region:** Podkarpackie

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## 2. Background

### Aerial Uptake project

AERIAL UPTAKE brings together local / regional public authorities and key players of the UAS sector from 6 European regions, being pioneers in the creation of a single European drone market. They exchange and transfer knowledge to unleash the potentials of UAS technology for civil and commercial usages. Besides exploring and addressing the key needs and bottlenecks of innovation and commercialization of UAS, partners investigate tailored solutions for increasing societal acceptance by enhancing and articulating positive social impacts of drone technology.

During the course of the project, partners learn from each other exchanging experiences regarding the methods, models and best practices that can help to implement an effective action plan in each of the five partner region (in the region of the Advisory Partner, no action plan is being prepared). The ultimate goal of an action plan is to set the target and structure for revising the policy instruments in the five participating regions towards a more open market for using drones in commerce and business.

The aim of creating the action plans in all regions corresponding to the overall project objective which is:

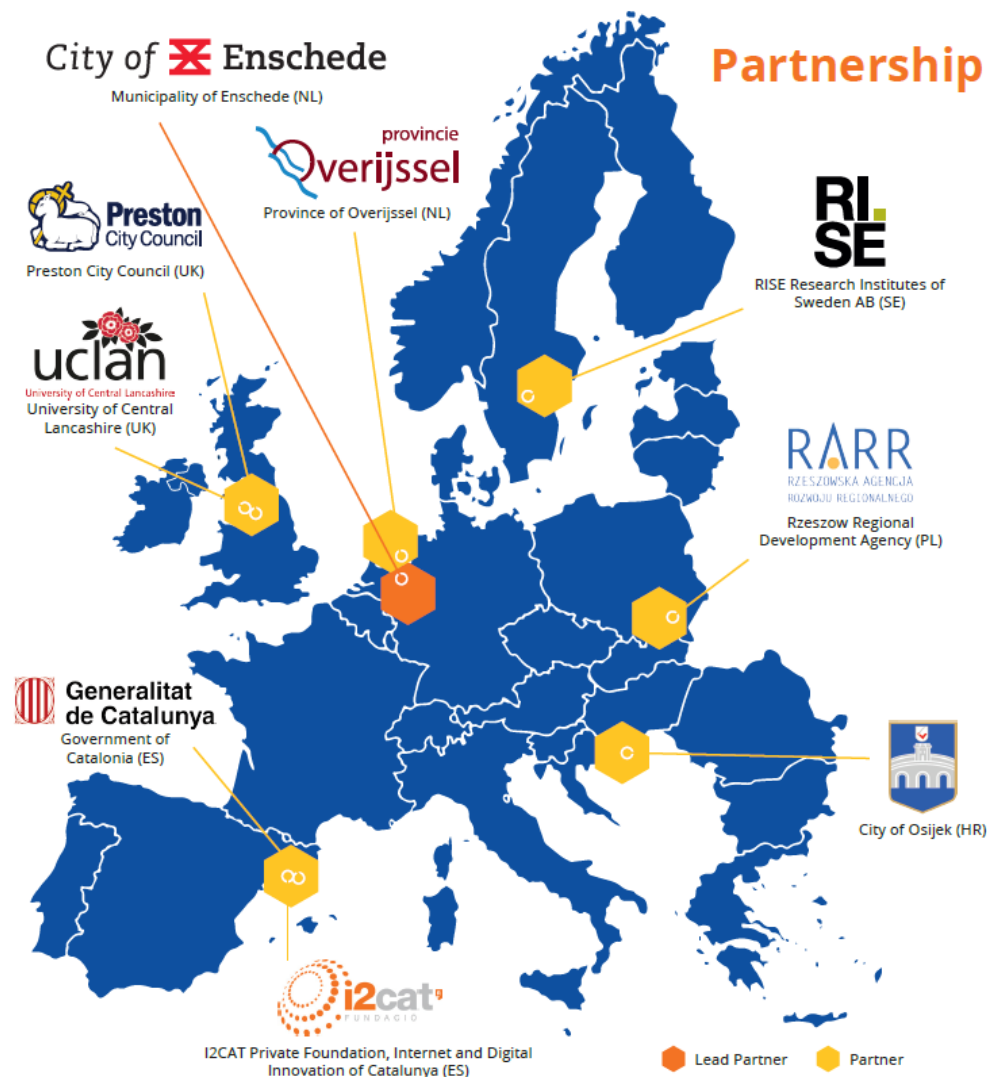
**TO IMPROVE THE PERFORMANCE OF REGIONAL DEVELOPMENT POLICIES AND PROGRAMMES BY STRENGTHENING THEIR CONTRIBUTION TO THE DELIVERY OF NEW TECHNOLOGIES AND FIELDS OF APPLICATION OF UNMANNED AERIAL SYSTEMS (DRONES) FOR CIVIL AND COMMERCIAL USAGES.**

In order to reach the above objective, AERIAL UPTAKE implements interregional learning activities among nine partners and six EU regions along three sub-objectives:

**FOSTERING INNOVATION** by creating a favourable environment and policy interventions, that facilitate experimentation, real-life testing and demonstration of novel UAS technologies (i.e. through specific experimental zones, urban living labs, removing specific regulatory and administrative barriers, etc.);

**PROMOTING MARKET UPTAKE**, through supporting and encouraging enhanced (quadruple helix) collaboration, networking and clustering among businesses, research organization, public authorities and potential end-users, also allowing cross-overs among different sectors;

**IMPROVING SOCIETAL ACCEPTANCE** of new UAS technologies by addressing ethical, legal and social concerns, raising public demand for new solutions and due consideration of potential social impacts and benefits, in. e.g. evaluation / monitoring criteria applied in addressed policies.



## Regional context

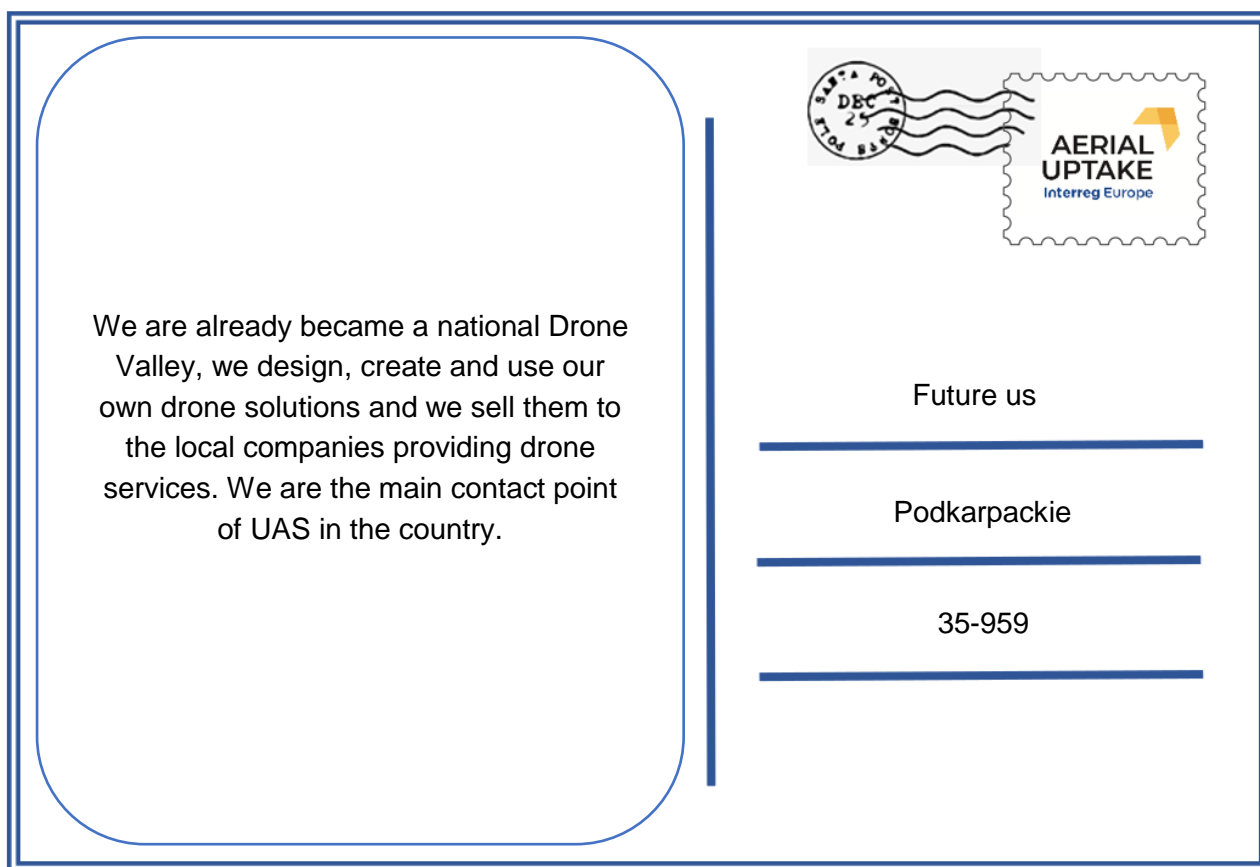
The market for Unmanned Aerial Systems in the Podkarpackie Voivodship has enormous potential. The existing companies operating in the industry are distinguished by professionalism and pioneering solutions, in both the domestic and international markets. Also in terms of personnel, the region is able to cope with technology and produce innovative mechanisms, thanks to the universities educating students at a high level. The UAS sector developed slowly; however, the process is becoming more and more dynamic. This is due to the modern products being introduced to the market, which are being used in more and more areas.

After analysing the Podkarpackie drone market, talking to representatives of business, public administration, the academic community and the public, the following conclusions can be presented:

1. The unmanned systems sector in Poland and in the Podkarpackie Voivodeship is growing exponentially.
2. In Poland, the use of drones in agriculture, forestry, exploration, surveying and transport shows a large growth tendency.
3. At the beginning of 2021, the entry into force of the EU implementing regulation will unify the law on drones in the EU, which will open up opportunities for international cooperation.
4. The Podkarpackie Voivodeship is one of the most developed regions in Poland in terms of the number of companies, drone operators and projects implemented in the drone industry.
5. The Podkarpackie Voivodeship has the potential to become what is often called the Drone Valley, among others due to the planned construction of the Polish Centre for Certification and Development of Unmanned Systems and the Space Industry.
6. At the time of the development of the currently applicable regional instruments supporting the development of the UAS sector, drones were not yet a developed branch of business, which led to them playing a minimal part in the related documents.
7. Both national and regional policies for 2021-2030 are currently being developed. The authors of these documents are conducting discussions with representatives of the drone market, which may result in dedicated development programs for the UAS market, and not, as has been so far, a general approach to drones from the perspective of the entire aviation sector.
8. The largest share of drones in Poland and Podkarpackie are products imported from abroad, mainly from China. In order to halt this tendency and develop the Polish drone production sector, investments in Polish companies dealing with the production of intermediate elements of drones and drones themselves are necessary.
9. For further development to be possible, it is necessary to adapt regional and national policies, and policies limiting the need to import components from the countries of East Asia.
10. The cooperation of entities operating in the industry is carried out through membership of clusters and the organization by public administration of smart specialization panels.

Vision

Postcard from the future:



As it was mentioned The Podkarpackie Voivodeship is one of the most developed regions in Poland in terms of the number of companies, drone operators and projects implemented in the drone industry and has the potential to become what is often called the Drone Valley, among others due to the planned construction of the Polish Centre for Certification and Development of Unmanned Systems and the Space Industry.

Due to the existence of the Cluster of Unmanned Systems and the involvement of the innovative company Fotoacc, the goal to which the company and the region has been pursuing for several years is the construction of the Polish Center for Certification and Development of Unmanned Systems and the Space Industry. The investment would be built on 25 ha in the vicinity of Rzeszów and include: an airport for drones, a research and training center for pilots of drone operators, as well as production areas where Polish unmanned ships would be built. Podkarpackie needs an airport with a runway adapted to landing and handling unmanned aerial vehicles. In the future, there will be drone taxis and large transport drones in the sky. We would also also need a certification center for such activities. The dream is to create the first such Center in Poland and one of the few in Europe in Podkarpackie. This requires new innovative projects, cooperation

within the Cluster and coordination of cooperation between all sectors, government institutions and business environment institutions. This is just a plan with no concrete timeline or sources of finance yet. What is particularly important, the creation of the Drone and Space Valley acting as the Polish Centre for Certification and Development of Unmanned Systems and the Space Industry is part of the economic development strategy of Podkarpackie.



### 3. Policy context

The Action Plan aims to impact:

- Investment for Growth and Jobs programme
- European Territorial Cooperation programme
- Other regional development policy instrument

#### Policy instrument addressed:

Name of policy instrument 1:

Regional Operational Programme of Podkarpackie Voivodeship 2014 – 2020

Regionalny Program Operacyjny Województwa Podkarpackiego na lata 2014-2020

Priority I - COMPETITIVE AND INNOVATIVE ECONOMY of the Regional Operational Programme of Podkarpackie Voivodeship 2014 – 2020 SO aims at strengthening research, technological development and innovation and also strengthening the competitiveness of SMEs, especially in aerospace sector.

**Institution responsible for addressed policy:** Marshall Office of Podkarpackie Region

**Proposed self-defined performance indicator:** Type 1: implementation of new projects

**Target value of the performance indicator:** 2 new projects

#### The policy context and the contribution to improve the policy instrument:

On the basis of a Regional Strategy for Podkarpackie Region 2014-2020 were identified the following needs to improve:

- Awareness of how important are innovative solutions in the frame of RIS sectors, especially among SMEs, how UAS solutions are important for many areas of life,
- The need to enhance regional innovation economy,
- Cooperation of institutions dealing with supporting of the development of SMEs at local-regional level – needs in increasing the level of cooperation between relevant stakeholders such as regional development agencies, regional and local authorities, enterprises, R&D centers, clusters, universities and technology and business incubators, manifested by a small number of joint projects of innovative,
- Creation of tailor-made ecosystem for SMEs in the field of UAS,
- Knowledge, know-how, skills, technical knowledge, procedures, methods in the field of UAS solutions in SMEs,
- Ecosystem of supporting SMEs,
- Policy framework for experimenting with drone-based technologies.

**CHANGE: Improvement of the policy instrument will be achieved by new project.**

Type 1: implementation of new projects- self indicator- 2 new projects:

- Initiatives to get a better understanding of UAS solutions among SMEs , public administration and citizens,
  - Innovative collaboration actions with start-ups, enterprises, R&D centers, higher education and stakeholders - mapping,
- reaching and engaging all the relevant stakeholders in UAS areas,
- New projects connected to identification new products and services in order for them to respond to UAS solutions,
  - Strengthening the connection between the stakeholders by sharing expertise,
  - Stimulating changes in the SMEs behavior to make them more active in fields of UAS solutions.

RRDA dedicated the first action to the policy instrument stated in the application form (Operational Programme of Podkarpackie 2014-2020) and the second action to different Policy Instrument: Smart Growth Operational Programme 2014-2020. Both of the Policy Instruments influence each other and share the same strategic goals and are complementary to themselves in the activities and strategic implementations of important for the innovations including UAS sector development.

The main goal of the OP IE is the development of the Polish economy based on innovative enterprises.

This goal will be achieved through the implementation of the following specific goals:

- Increasing the innovativeness of enterprises,
- Increase of the competitiveness of Polish science,
- Increasing the importance of the role of science in economic development,
- Increasing the share of innovative products of the Polish economy in the international market,
- Creating sustainable and better jobs,
- Increased use of information and communication technologies in the economy.

**Name of policy instrument 2:** Smart Growth Operational Programme 2014-2020

**Institution responsible for addressed policy:** Polish Agency for Enterprise Development

**Proposed self-defined performance indicator:** Type 1- New Project

**Target value of the performance indicator:** 2 new projects

**CHANGE: Improvement of the policy instrument will be achieved by new project**

Introducing key technological solutions aimed at developing the coordinator's potential of the National Key Clusters, thanks to the expansion of its offer with new services provided to members cluster. The implementation of the project will allow the achievement of such results as: gaining experience in introducing innovative solutions in the field of composites applicable in the sector aviation, drone and automotive.

## 4. Actions

### Action 1: Increase the regional innovation bringing new drone technology

New project implementing innovations in UAS in the Podkarpackie Region. Project financed from the Regional Operational Programme of Podkarpackie Voivodeship 2014-2020.

Name of the project: "Increase of the company's competitiveness by implementing a new product used in the construction of drones: a connector for connections with an elliptical cross-section."

Total budget: Around 399 750 EUR, with RDF contribution around 227,500 EUR. Submission date – January 2020

Applicant: Fotoacc

Approval date: September 2020

#### Background

The idea was shaped after we have presented the project its partners and objectives to wide audience in the region. Without the project and its objectives we wouldn't cooperate so effectively with UAS cluster and its companies. As one of the project pillars is innovation we discussed during the stakeholder meeting the cases and opinions presented at the partner meeting and decided to look for the funds to implement some ideas which already existed but had no financial background to implement in reality. The revised Operational Programme offered a call for projects so Drone Cluster company with cooperation with RRDA decided to submit the project influencing innovation in the region in the UAS sector to shape the policy and innovation regarding this matter.

We were particularly inspired by i2CAT and their mission-oriented research center for advanced Internet technologies that produces technologies and solutions with the aim of converting Catalonia into a leading global smart region in a Smart Europe, with a flourishing added-value economy and an innovative society. Catalonia Smart Drones offers added value services in the ICT field, with a particular focus on the Drones sector in order to generate an innovative offer at the Catalan level.

Lesson learned and specific best practice listed in Aerial uptake project: Catalonia Smart Drones is an initiative to foster the drone sector in Catalonia based on a cluster which develops activities to impulse the sector. The main objective is to increase the competitiveness of Catalan drone industry promoting projects that encourage the creation of employment and improve the positioning of the Catalan Smart Drones sector globally.

## **Policy instrument**

Regional Operational Programme of Podkarpackie Voivodeship 2014-2020.

## **Action steps and activities**

It was found that the project involves the implementation of solutions that are new and very innovative in terms of their features and functionalities compared to the solutions available on the market so far.

Connector for connections with elliptical cross-section (including circular), which can be used for all types of flow and non-flow connections. The joining project was fully developed by the Applicant and submitted to the Patent Office. The product is characterized by such a form of a latch that prevents the connection from unfastening during its controlled operation (not taking into account unforeseen, unnatural forces acting on the connection, e.g. bending, squeezing or fatigue of the material). The pull-out / unfastening strength of the latch is not based on the pressure force or the adhesive substance, but results from the shape of its elements (latch and sleeve with a socket). The advantage of using the connector is also the speed and ease of its assembly. The applicant is testing the above-mentioned connections in the arms of the drones produced, but they can be used for any connection with an elliptical cross-section.

1. Second reporting period: Analysis and identification of problems and needs in the region discussion on the stakeholder meetings, reading minutes from 1st international project partner meeting presenting project partners its drone market achievements and innovations
3. Regional stakeholder meeting in December: shaping the idea
4. Project proposal
5. Call for projects
6. Approval date – September 2020

## **Stakeholder involvement in the action**

FOTOACC company and UAS Cluster of Podkarpackie.

Fotoacc company has been operating since 2013, i.e. from the beginning of the UAS industry's development in Poland. The company creates devices comprehensively: from design, through construction, to testing. His proprietary solution – the Heksakopter X-01 has been successfully implemented in the activities of Uniformed Services. Currently, the company deals with broadly understood engineering – it builds unmanned flying, driving and other solutions. Different heads are developed for each drone for exploration, agricultural, environmental and other solutions. The flagship products are: the Heksakopter X-01, Agrodron and Plane X-05. Fotoacc's research and development department works on solutions for the police and the army, as well as agriculture and local authorities. Last year, the company concentrated very strongly on proprietary IT solutions. Since 2015, the Unmanned Systems Cluster, which aims to develop and increase the value and importance of the UAS market, has been functioning in Podkarpackie. Among the members there are companies that directly deal with drones: they produce them, program IT systems and conduct training for UAS operators. The scientific side is represented by the two largest universities in the voivodeship: the Rzeszów University of Technology and the University of Rzeszów. The cluster also includes institutions, including the Rzeszów Regional Development Agency and local government units. The cooperation of business representatives and local governments with scientific units offers opportunities for the implementation of many different projects. As a result, they will lead to the popularization of unmanned aviation, and thus the implementation of innovative solutions for many sectors of the economy. However, the Coordinators of the Unmanned Systems Cluster know that the unmanned aerial system market is no longer autonomous. Its rapid development forced entrepreneurs from the industry to use the services and solutions of companies operating within other branches of the economy. That is why the range of USC members are diversified in terms of sectors - apart from members operating directly in the UAS industry, there are also entrepreneurs from related sectors: IT, aviation, robotics, automation, manufacturing, photo-video.

### **Timeframe and costs**

Total budget of the project: around 399 750 EUR and from ERDF around 227,500 EUR (after currency change from PLN to EUR)

Submission date – January 2020, Innovative project co-funded from dedicated policy instrument.

Approval date – September 2020, Fotoacc is currently implementing the project

### **Target groups**

UAS sector companies, universities, clusters

### **Risk factors**

Frequently changing COVID situation and restrictions

### **Goals of the action**

The project goes in line with the goals of the dedicated policy instrument and self performed indicator as well as with Thematic Field Inno. The main goal of the action is to become more innovative and competitive when it comes to new drone technologies.

### **Policy Change**

The Priority I - COMPETITIVE AND INNOVATIVE ECONOMY of the Regional Operational Programme of Podkarpackie Voivodeship 2014 – 2020 aims at strengthening research, technological development and innovation and also strengthening the competitiveness of SMEs, especially in aerospace sector. The priority in this area will create a business environment conducive to research and innovation. Key elements include strengthening the activities of research and innovation and improving knowledge transfer between public and private sectors and supporting SMEs. The Regional Program of the Podkarpackie Voivodeship assumes financial support for companies operating in the aviation industry (as the smart specialization of the Podkarpackie region), including research and development, cooperation with business and cooperation as clusters. There is still budget in this Priority (close to half of allocation) and there will be next calls in next years. Supporting of SME sector is a one of key issue (appears in activities and indicators: Number of enterprises receiving support, Number of enterprises receiving subsidies, Number of enterprises using advanced services provided by environmental institutions business). The action goes in line with chosen dedicated policy instrument as it supports SME and innovation by project.

## **Action 2: Expanding innovative products and services offered to UAS companies in the cluster.**

New Project: Development of the potential of the Silesian Aviation Cluster by expanding its innovative offer: products and services offered to cluster members. Project financed from Smart Growth Operational Programme 2014-2020.

Total budget: Around 2 600 000 EUR

Applicant: Silesia Air Cluster

### **Background**

In the third reporting period RRDA with stakeholders started to develop the idea of the second action to the Action Plan. At the early stage RRDA and some of the UAS companies from Podkarpackie who are in the Silesia Air Cluster discussed preliminary the new project submission regarding the development of air business including UAS. Silesian Aviation Cluster is a supra-regional cluster actively operating in the several regions also in Podkarpackie. Some of regional companies are members of this cluster. Lesson learned and specific best practice listed in Aerial uptake project are the same as in the action 1 : Catalonia Smart Drones is an initiative to foster the drone sector in Catalonia based on a cluster which develops activities to impulse the sector. This project is specially dedicated to cluster development and same services as I2Cat Catalonia Smart Drones which was an inspiration.

### **Policy instrument**

Smart Growth Operational Programme 2014-2020

### **Action steps and activities**

The project will aim to support the development of services in strategic areas provided for under the cluster-based development policy, including in particular, activities in the field of digitization and digital transformation, transformation towards industry future (Industry 4.0), low-carbon economy. This goal will be achieved through: 1. Commencement of the provision of new market services by the cluster coordinator, including 2. Expanding both the field and the number of entities conducting research and development of technology based on zero-emission means of transport 3. Generating and transferring innovative solutions in transport (air, automotive, drone), thanks implementation of new technologies, both in the form of purchased and proprietary technological



solutions, and engineering. 4. Drone Database for companies and clusters 5. Implementation of training for employees of entities belonging to the cluster as well as potential employees on local labor markets 6. Strengthening the coordination of activities of cluster members by increasing the intensity of information exchange market, staff, technological info between members 7. Achieving synergy between the members of the Silesian Aviation Cluster belonging to the industries, i.e. aviation, drone, space, automotive. 8. Creation of new, permanent jobs. 9. Maximizing the use of the technical and technological potential of the cluster coordinator. 10. Promotion of the aviation and drone industry as an attractive job offer for future graduates, z including the promotion of jobs for women and people with disabilities. 11. Increasing interest in the drone sector in Poland and promoting advanced work drone technology. Services provided as part of project, thanks to the purchase of specialized equipment, they will generate innovative solutions and techniques production, which is invariably important in such rapidly growing sectors as aviation, drones or electric cars.

Action steps:

1. Third reporting period: Analysis and identification of problems and needs in the region discussion on the stakeholder meetings, reading minutes from 1st international project partner meeting presenting project partners its drone market achievements and innovations
2. Consultations
4. Project proposal
5. Call for projects: March 2021
6. Planned project implementation: 01.11.2021-31.12.2023

### **Stakeholder involvement in the action**

Silesia Air Cluster

### **Timeframe and costs**

Planned project implementation: 01.11.2021-31.12.2023

Around 2 600 000 EUR (after the currency change from PLN to EUR)

### **Target groups**

SME, UAS companies from Podkarpackie and Silesia, Clusters

### **Risk factors**

Frequently changing COVID situation and restriction

## **Goals of the action**

Project will promote of the aviation and drone industry as an attractive job offer for future graduates, including the promotion of jobs for women and people with disabilities and would aim to increasing interest in the drone sector in Poland and promoting the work of advanced drone technologies so it covers all the assumptions of TF in the project: TF social, TF inno, TF market. The creation of a special database as a part of the project will help to commercialize data and information on drones, technical issues and law and will be equally available to everyone. The platform created will help to recognize the drone market in Poland, help understand the needs of this market, its flexibility, and the possibility of using the so-called good practices in newly created drone companies will allow for the exchange of knowledge and benchmarking. This technology will help build a competitive advantage and increase the innovation of companies that decide to take advantage of it.

## **Policy Change**

The policy change- new project financed from Smart Growth Operational Programme 2014-2020 (Support for the environment and potential of enterprises to conducting R & D & I activity Measure 2.3. Pro-innovative services for enterprises Sub-measure 2.3.7 Development of the potential of National Cluster coordinators)-is the effective usage of existing policies and funds to develop drone sector as a part of R&D in aviation, Priorities and goals: support for r&d activity of enterprises, support for the environment and capacity of enterprise for R&D activity ,support for innovation in enterprises .The action goes in line with chosen dedicated policy instrument as it supports Smart Growth in the area of air industry including UAS sector and meets the criteria of self performed indicator. So far the policy instrument was mostly dedicated to other sectors, not specially drone promoting actions.