



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.

www.interregeurope.eu/aerialuptake

ACTION PLAN

Enschede/Overijssel



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1. General information

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

Partner organisation: Gemeente Enschede (LP) and Provincie Overijssel (PP2)

Region: East Netherlands

NUTS2 region: Overijssel

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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:

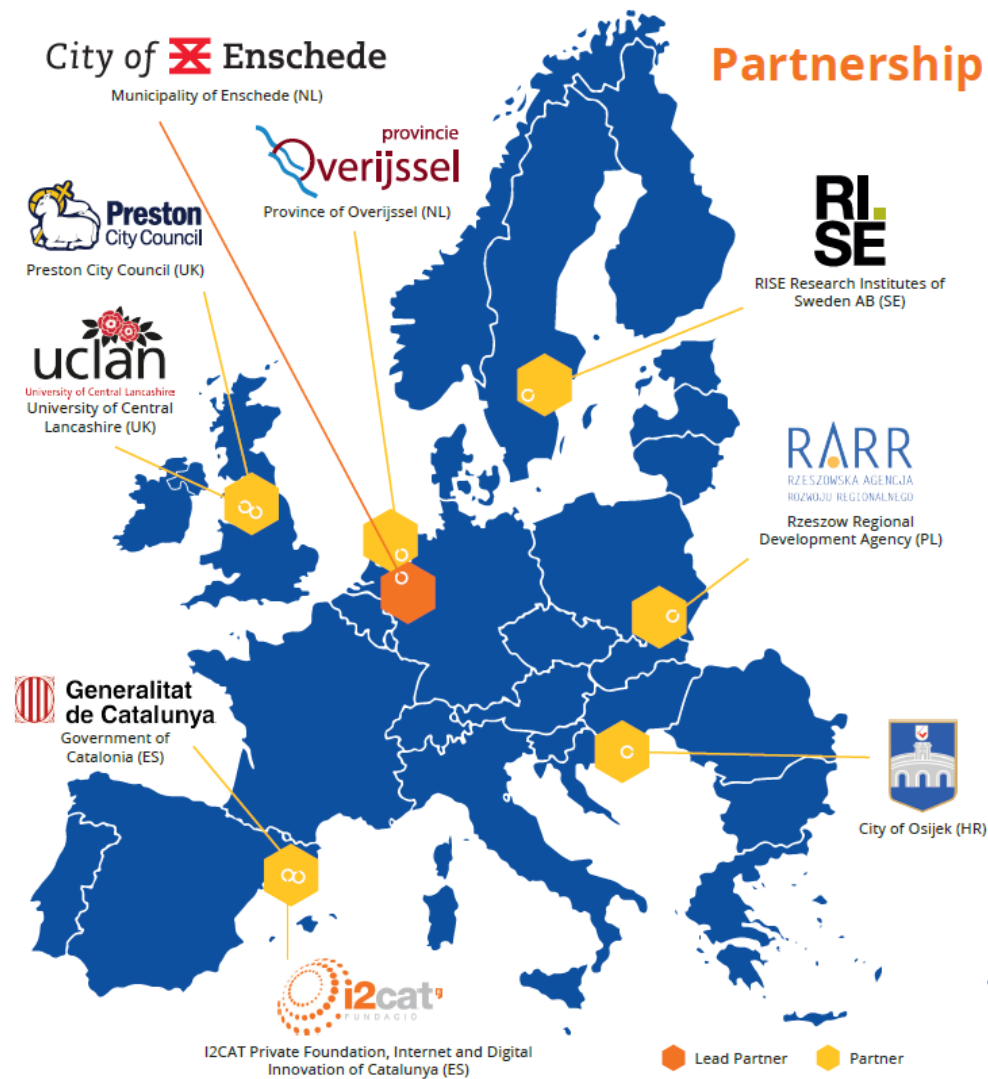
TO IMPROVE THE PERFORMANCE OF REGIONAL DEVELOPMENT POLICIES AND PROGRAMMES BY STRENGTHENING THEIR CONTRIBUTION TO THE DELIVERY OF NEW TECHNOLOGIES AND FIELDS OF APPLICATION OF UNMANNED AERIAL SYSTEMS (DRONES) FOR CIVIL AND COMMERCIAL USAGES.

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

Enschede is the largest city in the province of Overijssel, located on the border with Germany. In 2016, the municipality, together with the University of Twente, sme's and the Province of Overijssel, initiated an initiative to enable drone entrepreneurs and researchers to experiment and develop their drone innovations. This initiative was developed into Space53, a test centre and innovation cluster for unmanned technology. Space53 aims to create a regional ecosystem in which this technology can be developed, tested, and demonstrated safely, creating both economic opportunities in the form of new job opportunities, as well as societal opportunities through profiting drone innovations.

During the initial phase of Space53, it became clear how important the role of government bodies is in accelerating and facilitating the promise of drone technology. Unlike most other technological innovation, drone technology is intended to operate in the public realm. This requires an active, participating government to ensure the technology is developed and implemented in line with societal demands and norms. It became clear that this requirement was not represented in the targeted policy instrument, which rather focused on bringing together sme's and knowledge institutes. This was the starting point for the municipality of Enschede and the Province Overijssel to initiate Aerial Uptake.

During the project, insights and learnings were gained to improve on this; the project's **regional survey** demonstrated the lacking transparency of the drone industry vis-à-vis ordinary citizens, which turned out as a major enabling factor for **increased public support** of drone operations.

The collection of **good practices** included the Space53 based solution of the **readiness scan**, a toolkit for drone developers and researchers to measure not just technological readiness, but also the social, legal and business readiness of a specific drone product or service. Another good practice was the **Drone2go** project, bringing together large organisations like Rijkswaterstaat (Dutch Department of Waterways and Public Works) and drone researchers and companies to speed up innovation and its subsequent application in the Netherlands.

Vision

The goal is to further strengthen the region's economic strength and innovative capacity by enhancing our drone cluster Space53 and the unique public private partnerships therein. Located within a high-tech cross border region (Twente-Münster-Osnabrück), our ambition is to facilitate entrepreneurs, researchers, authorities and first responders in their activities and to demonstrate how cross border cooperation can and should work when it comes to unmanned aerial vehicles.

In our vision, the role of local authorities is that of facilitator, working with companies and researchers to enable drone operations with positive societal impact; user of drone technology for public tasks like public safety, inspection and maintenance; and regulator, working with drone operators to ensure that drone operations respect local demands and norms.

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(s): **ERDF Operation Program East Netherlands**

- Institution responsible for addressed policy: **Province of Overijssel**
- Proposed self-defined performance indicator: **Inclusion of ethical, legal and social considerations of drone innovations within future projects**
- Target value of the performance indicator: **Yes**

Policy instrument addressed:

Name of policy instrument(s): **ERDF Interreg-A Netherlands-Germany**

- Institution responsible for addressed policy: **Euregio**
- Proposed self-defined performance indicator: **Application of new cross border project on exchanging knowledge and best practices of public drone use**
- Target value of the performance indicator: **One**

The policy context and the contribution to improve the policy instrument

ERDF OP EAST NETHERLANDS

The Municipality of Enschede and the Province of Overijssel set out to influence the ERDF OP East Netherlands. This Policy Instrument aims to improve the regional economy by supporting SMEs in innovating and networking. It subsidises projects aiming to improve SME innovation capacity and networking. The Province of Overijssel is also the Managing Authority of the policy instrument. This was of benefit to the project, allowing for easy and frequent exchange of information and discussion of developments.

Action plan targeted at new program

As the targeted policy instrument (ERDF East Netherlands) is starting its new period (2021-2027), **this action plan targets the updated program**. The specific objectives now focus on supporting innovation in sme's and collaboration between sme's and knowledge institutes (priority 2.A.1).

Still, the originally identified shortcoming of the program (i.e. not ensuring and facilitating an active role of local authorities and government) remains relevant and this action plan therefore aims at improving the involvement of local government in UAS related projects.

Policy instrument change and indicators

Two types of change were targeted at the start of the project;

- **improving the GOVERNANCE of the policy instrument**
 - o As was reported in Progress Report 3, we have successfully engaged with the management authority regarding the uptake of ELS factors in (future) projects; the new program 2021-2027 has included these factors as a framework for future projects to consider ethical, legal and social aspects.
- **proposing NEW PROJECTS.**
 - o No new drone related projects have been initiated under ERDF OP EAST NETHERLANDS since the beginning of Aerial Uptake. The project learnings suggest that we have to engage with stakeholders like local authorities to raise awareness and commitment before they will be able to join actual projects. Therefore, we aim to use phase 2 to prepare our target group of local authorities for future participation.
 - o We expect that the learnings of Aerial Uptake can support stakeholders from the Space53 cluster and the region to set up new UAS projects, or infuse the learnings in other innovation projects or policy instruments. To illustrate this; at the time of writing, a project is being prepared for another policy instrument (Interreg-A IV), which is expected to start early 2022.

Indicators

“Number of local authorities with increased awareness and capacity to engage with drone policy”. With 13 municipalities and three regional authorities present in the region of Twente, we aim to influence at least five regional stakeholders by the end of phase 2. After that, we expect at least one project to involve them under renewed program of the policy instrument.

4. Action 1

Adding ethical, legal and social considerations of innovation to the governance of EFRO OP-Oost

Background

Good practice(s) and project learnings

The project partners and their regional stakeholders have demonstrated a wide range of societally valuable drone applications. The good practice from Catalonia **Pollution data acquisition with UAVs** demonstrated how complex issues and decision making on a local level can be informed through using drones for data collection. In a similar fashion, good practices in rural settings such as the **Croatian Drone Mountain Rescue Service** really underlined the broad applicability of drone technology and suggest endless possibilities for doing good things with drones.

Drone use and societal fears

In addition to collecting a range of inspiring and uplifting drone applications across the partnership, Aerial Uptake also engaged with the public in various means. Firstly, all partners conducted a **regional questionnaire**, in which citizens from all partner regions were able to voice their opinion on drone technology. Interestingly, we saw a common reaction, regardless of region, demonstrating concerns regarding privacy, safety and data security. This was later confirmed by discussions in the **drone debate series**, where citizens joined an informed debate on the possibilities and risks of drone technology.

Importance of ethical, legal, social considerations (ELS)

By both showcasing a range of societally valuable drone applications as well as uncovering valid societal concerns about the same technology, Aerial Uptake taught us about the importance of ethical, legal and social considerations of this technology. This resonated with some activities that were underway in our own region, looking at ways to measure the readiness of innovations other than technological readiness. The targeted policy instrument, when looking at fostering innovation, used the well-known technological readiness level methodology to evaluate projects. However, as was showcased in the **Readiness Scan** good practice, there are other ways to look at innovations. Especially when introducing technology that operates in the public realm, like drones do, it turned out to be quite helpful and even necessary to look at how innovations are also acceptable rather than just feasible. Inspired by these learnings, the municipality of Enschede even initiated a discussion on the ethical implications of urban drone usage with an **Ethics Committee**, which was included as a good practice as well.

Including ELS into the policy instrument

Based on these learnings, the municipality of Enschede engaged in a range of discussions with the management authority, represented in the consortium by the Province of Overijssel. Thanks to the project learnings, we were able to demonstrate the importance of ethical, legal and social considerations for the policy instrument when fostering innovation projects. The rationale was that innovators, whether researchers or sme's, should be stimulated to innovate with the final application in mind, that will impact the lives of ordinary citizens. Hence, the policy instrument should not only look at technological readiness, but also ethical, social and legal readiness when approving future projects.

Goals of the action

During the discussions with the management authority, we were able to reach common ground and include these considerations into the new program. The goal of this addition to the policy instrument is to ensure that future projects featuring drone innovations will be invited to look at how the innovations are ethical, legal and socially acceptable, rather than just technically feasible. This in turn, will increase the probability that future projects will deliver innovations that are compatible with the concerns of the general public and authorities.

Policy Change

This action is a type 2 change, as it involves a change in the governance of the targeted policy instrument EFRO OP-Oost. The change has already taken place: next to looking at technological readiness, the program will now look at societal readiness and market readiness as well.

4. Action 2

Setting up a new project funded by Interreg-A for cross border best practice exchange on public drone usage

Background

Good practice(s) and project learnings

The importance of cross border collaboration

As discussed above, the project has showcased a range of interesting drone applications and different regional responses to the opportunities offered by the new technology. This demonstrated not just the value of drone applications, but very clearly the value of looking across borders to learn what other regions are doing. While this seems logical, as it's the founding principle of the Interreg programme, it may be illustrated by an example of how different regions develop the same application simultaneously, with varying results. During the second, and due to COVID-19 final, project gathering in Sweden, a Swedish project was introduced, aimed at bringing AEDs by drones to those suffering a heart attack in rural areas. At the time, the same goal was identified by a group of regional stakeholders in the Netherlands. While the Dutch project was aborted due to technological and legal restraints, the Swedish project went on to save the life of a cardiac arrest [for the first time in history](#).

In the same way, the UK good practice of **using drones for inspection of municipal buildings** demonstrated how drones can eliminate the need to install scaffolding, which is both costly and not without risk for human lives. This was an inspiring story for the city of Enschede, which also aims to be a launching customer of drone services.

Regional public stakeholders in the Enschede region

All in all, the richness of public drone applications demonstrated by the project inspired the lead partner to further stimulate public authorities' engagement with drone technology. These actors, including local governments/municipalities, but also the safety region (Dutch: Veiligheidsregio) regional water authority (Dutch: Waterschap) and the regional environmental agency (Dutch: Omgevingsdienst), have so far only engaged with drone technology limitedly. By establishing common understanding of

the opportunities and impact of drone technology, these organisations can play an important role in further developing and applying drone services for society, while stimulating acceptance of this technology.

Cross border cooperation in the Enschede region

The Aerial Uptake learnings shine new light on previous interactions with German partners across the border, such as the city of Münster and the fire department of the neighboring city of Gronau. These public partners too are struggling to make sense of the wide range of possibilities, coupled with legal and societal concerns of public drone applications.

Action steps and activities

In light of the above, this action intends to bring together both the importance of public drone applications and the value of cross border exchange of knowledge and best practices. It aims to set up a new project to follow up on the project learnings and further stimulate the uptake of drone technology by local authorities. Due to the cross border focus of the action, the targeted policy instrument EFRO OP-Oost is not a feasible source of funding of the project. Rather, the EFRO-Interreg-A policy instrument provides the right conditions for this project. This policy instrument is managed by the Euregio, a cross border body of which the municipality of Enschede is a member.

Stakeholder involvement in the action:

- Space53 as expert stakeholder
- Public stakeholders include the local governments of the Twente region, which are 13 municipalities outside of Enschede, in addition to the safety region Twente (Veiligheidsregio Twente), the waterboard (Vechtstromen), and environmental agency Twente (Omgevingsdienst Twente) and their German counterparts.

Timeframe and costs

The Interreg-A program offers three types of subsidy; <1.000 euros, <25.000 euros and >25.000 euros. A project aimed at cross border exchange of knowledge and best practices on public drone usage is likely to fall in the second category. Expected actions include one or more drone demonstrations at the project partners, smaller meetings as well as a larger final event to disseminate learnings. These actions can take place in the course of a year.

Target groups:

Stakeholders described above.

Risk factors:

Goals of the action

The action aims to expand on Aerial Uptake's insights in regard to local authorities and their role in the uptake of drone technology. Specifically, taking a euregional, cross border perspective, it aims to foster

the exchange of knowledge and best practices among Dutch and German local authorities to advance the use of drone technology by these organisations.

Policy Change

The type 1 policy change (new project) is targeted at Interreg-A, a different policy instrument than anticipated at the start of Aerial Uptake, which targets the EFRO OP-Oost policy instrument. The reason is that this action involves the collaboration of governments, which is included as a priority within the Interreg-A programme, while EFRO OP-Oost is targeted at sme's and knowledge institutes.