



## The MyGalileoDrone Competition:

### *boosting GNSS-based applications*

## PRESS BACKGROUNDER

### The MyGalileoDrone Competition

Building on the success of the MyGalileoApp competition, the European GNSS Agency (GSA) is launching a new competition to boost the adoption of GNSS solutions for drone applications across a wide range of sectors, that address the EU priorities such as the Green deal and support the EU Recovery Plan for Europe.

*The sky is not the limit*, the competition is looking at drone-based application and services using Galileo either integrated in the flying platform, the ground control station, or other devices supporting the operation, such as smartphone or enabling U-Space services.

Through this competition, the GSA wants to encourage the development of applications and services based on drones using Galileo EGNSS positioning, offering high accuracy and increased robustness, in order to stimulate business creation in this new market.

The competition is targeting EU start-ups, entrepreneurs, SMES and students, supporting the applicants in the creation of business opportunities in the fast-growing market of drone services.

Innovative drone applications will serve the current EU priorities including sustainability, digitisation, and resilience, and support Europe's long-term competitiveness.

### How does it work?

The aim of the contest is to design, develop, test and prepare for commercial launch a drone-based application and/or service able to provide a position fix by using Galileo-enabled receiver. The use of Galileo is understood in a broad sense, and not limited to the navigation components in the flying platform. The competition is open to integration of Galileo in any of the drone components, that is, the flying platform (autopilot or other payload), the ground control station, or any other devices supporting the implementation of the application, such as smartphone.

The competition rolls out in 3 Phases, from idea to business.

- **Phase 1:** submission of an idea for application and a preliminary business case,
- **Phase 2:** selection of 30 teams who will have to submit a demo version, a video of the app and the logs of the flights, and

- **Phase 3:** 10 teams are selected for the final demo and to pitch in front of investors.

Across the entire competition applicants will receive mentoring and coaching to develop the idea into a real application and business.

For more information: <https://www.gsa.europa.eu/mygalileodrone>

Terms of references of the competition

[https://www.gsa.europa.eu/sites/default/files/uploads/terms\\_of\\_reference\\_mygalileodrone\\_competition.pdf](https://www.gsa.europa.eu/sites/default/files/uploads/terms_of_reference_mygalileodrone_competition.pdf)

## Drone applications and services

Each participating team shall propose an application / service targeting one of the following innovation areas:

- **Drones for European Green Deal:**
  - Robust drone automated navigation solutions
  - Smart mobility solutions supporting reduction of congestions and more efficient and sustainable transport, such as urban air mobility, VTOL, air taxis or package delivery
  - Support to sustainable maritime and railway transportation, such as emissions monitoring, surveillance at sea, inland waterways operations
  - Field to Fork strategies on sustainable food, such as applications supporting precision agriculture
  - Applications in support of preserving Europe's natural environment, such as monitoring of natural assets
- **Drones for European Digital Strategy**
  - U-Space <sup>1</sup>services leveraging artificial intelligence
  - Internet of Things, e.g. intelligent interconnected drones exchanging information with other resources in low power context
  - Drones services to enable digital connectivity, also in remote and rural areas
  - Operations that leverage synergies between 5G and Space data
  - Efficient and digital surveying: Cadastral surveying, mining, marine surveying, GIS, photogrammetry
  - Infrastructure inspection and maintenance: Power grid, transport network energy distribution, solar panels inspection, offshore platforms, wind farms, etc.
- **Drones to Protect our European way of life:**
  - Applications supporting efficient search and rescue operations, such as search in remote areas
  - First-aid drones and medicine delivery
  - Support to firefighting, other natural disaster monitoring (e.g. floods, forest fires, earthquakes, etc), patrol, security, etc
  - Efficient support to migration processes and border operations

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<sup>1</sup> U-space is a set of new services relying on a high level of digitalisation and automation of functions and specific procedures designed to support safe, efficient and secure access to airspace for large numbers of drones.

- **Drones for Resilience & the European Recovery**
  - eHealth: e.g. delivery of samples, medicines, tests, disinfection services
  - Support to safe tourism
  - Food production: e.g. crop monitoring, intelligent crop management
  - Support to production and inspection

In the area of the applications/services described above, the competition targets the use of Galileo in any components of the service, and not limited to the flying platform itself, such as, but not limited to:

- **Integration of EGNOS/GALILEO to improve flight performance and/or control**, such as E-GNSS integration or activation of the capability in the flight management system or autopilot in order to deliver more robust service, integration of E-GNSS with other sensors to enable a better navigation solution.
- **Support the drone mission execution**: such as, but not limited to mobile apps for drones targeting the use of EGNSS to plan, record and track the flight, provide fly/no-fly area maps and support geo awareness, weather reporting in the flight area, and facilitate communication with other drone pilots and drone integration in the airspace.
- **U-Space services** supporting future Drone operations.
- **Drone Payload**, such as geolocated images processing, geoawareness/geo-identification support equipment.
- **Additional equipment** in the control station, pilot equipment or post processing software leveraging EGNSS data.

## The Prizes

The winner teams of the contest will receive the following Prizes:

- 1<sup>st</sup> Prize of the GSA Evaluation Board: € 100.000 (one hundred thousand Euro)
- 2<sup>nd</sup> Prize of the GSA Evaluation Board: € 60.000 (sixty thousand Euro)
- 3<sup>rd</sup> Prize of the GSA Evaluation Board: € 40.000 (forty thousand Euro)
- 4<sup>th</sup> Prize of the GSA Evaluation Board: € 30.000 (thirty thousand Euro)

## GNSS benefits for Drone applications and services

GNSS is essential for the safe and reliable navigation of drones, and GNSS receivers are implemented on almost all new commercial drones as a standard feature.

- GPS+Galileo solutions provide superior performance in terms of availability and accuracy than single-constellation solution. Thanks to more satellites in view, the performance improves in challenging environments, such as urban areas or canopy. Multiconstellation receivers are mainstream in the market.
- GPS+Galileo multifrequency solutions: the combination OS E1/E5 signals increase accuracy and resistance to multipath E5 and is already available in many receiver models.
- GPS+EGNOS corrections provide improved robustness of the navigation solution supporting safety, as well as improved accuracy, especially relevant in the vertical axis for drones operations



## Timeline

17/07/2020: Announcement of Contest & online kick off

31/08/2020: Phase 1 submission of Ideas

15/09/2020: Phase 1 evaluation, Announcement of teams to proceed to development phase

30/11/2020: Phase 2, App/Service Development, Submission of prototypes/demonstrators

15/12/2020: Phase 3, Online Demo day at EU Space Week, evaluation of phase 2, and announcement of selected teams to proceed to the Finals.

28/01/2021: Competition Finals at GSA, Flying demo, and Elevator pitch to investors

## GNSS for Drone applications and services: key figures

The drone is a new global market growing rapidly. The European demand is estimated to reach EUR 10 billion annually, in nominal terms, to 2035 and over EUR 15 billion annually to 2050, creating more than 100,000 jobs (Source: [SESAR JU Drone Outlook Study](#)).

GNSS is essential for the safe and reliable navigation of drones, and GNSS receivers are implemented on almost all new commercial drones as a standard feature. The installed base of GNSS devices will reach 50 million units by 2025, generating more than 1.2 billion revenues in GNSS device sales. The linked service component of the drone market is growing rapidly: today dedicated drone services are being offered by a number of specialised companies and the European drone service revenues are expected to reach €250 mln by 2025.

European component and receiver manufactures for drones have 30% share in the global market (Source: [GSA Market report 2019](#)). While most system integrators or drone manufacturers are based in Asia (68%), European companies remain important players (14%). European companies lead the provision of drone related services and drone traffic management. Flock, Sensefly, Altitude Angel, Airmap and Unify are examples of innovation reaching business success. European initiatives also move fast towards provision of new air mobility concepts, such as Airbus UTM, Lillium and Volocopter. This competition provides a development and business ecosystem to facilitate new ideas generation and development of promising services.

## The European GNSS Agency (GSA) [www.gsa.europa.eu](http://www.gsa.europa.eu)

The European GNSS Agency (GSA), is the European Union Agency in charge of managing operations, security and service provision for Europe's Global Navigation Satellite System (GNSS), Galileo and EGNOS. By working with stakeholders, industry, service providers and user communities, the GSA ensures the highest return on European GNSS investment, multiplying the benefits of space applications for European citizens and business, boosting innovation and competitiveness, and securing sustainable economic growth.



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## Galileo

Galileo is Europe's Global Navigation Satellite System (GNSS), providing improved positioning and timing information with significant positive implications for many European services and users. Galileo aims to ensure Europe's independence from other satellite navigation systems and its strategic autonomy in satellite navigation. Europe's investment in this sector will boost the European job market, help the EU step up its role as a security and defence provider, and support emerging technologies such as Artificial Intelligence, drones, automated mobility and the Internet of Things.

*Questions about Galileo?* Check out our [Galileo FAQ page](#) and [Galileo FAQ YouTube Playlist](#)

## More Resources:

GNSS Drone image gallery available [here](#) please cite © European GNSS Agency

[EGNSS for Drones Operations, White Paper:](#)

[UseGalileo - Find a galileo-enabled device to use today](#)

Galileo & EGNOS in Drones (the EGNSS4RPAS project):  
[https://www.gsa.europa.eu/sites/default/files/uploads/galileo\\_egnos\\_for\\_drone\\_egnsrpas\\_leaflet.pdf](https://www.gsa.europa.eu/sites/default/files/uploads/galileo_egnos_for_drone_egnsrpas_leaflet.pdf)