e-Airport
Demonstration Centre

European Global Navigation Satellite Systems Agency

HORIZ◉N 2020

European society and industry are facing new challenges, requiring more innovation, productivity and competitiveness, whilst using fewer resources and reducing environmental impact.

GNSS offers various possibilities for the development of new space enabled applications, which will enhance Europe's capacity to address major societal challenges.

In this context, based on Horizon 2020-Galileo-1-2014 Call, the e-Airport project addresses the provision of an integrated application aiming at increasing the efficiency safety and security of the cargo and aircraft service processes by using EGNOS/EDAS and Galileo Initial services.

The development of an integrated airport operations monitor application based on European GNSS to increase the efficiency, safety and security of the cargo and aircraft service processes and its demonstrations in two European airports using EGNOS and Galileo Initial services.

The e-Airport solution uses the real-time reliable, accurate position obtained by satellite navigation as an enabling technology for applications addressing the following social and market needs:

- **Efficiency** of the airport ground handling services and overall turn round process.
- **Safety** of airport vehicles movements also in low visibility conditions.
- **Security** and **Efficiency** of the air freight handling.

Solutions proposed by e-Airport could be used to prevent that unauthorized vehicle access the runway or collisions between aircrafts and airport vehicles or between airport vehicles during airport Turnaround operations.

The operational advantages offered by the use of EGNOS/EDAS and Galileo signals are the enhancement of the position accuracy: the e-Airport proposal aim at developing an innovative Airport Monitor application based on EGNSS

technology responding to requirements of both Air Navigation Service Providers and Airport Operators.

Demonstrations of aircraft service operations, airport cargo operations and measurement of the relevant KPI will be carried out:
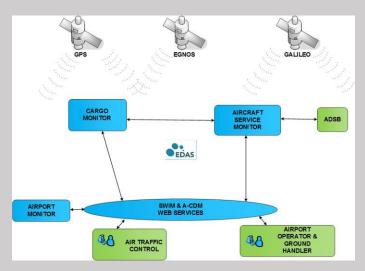- with ENAV and Aeroporti di Puglia in "Karol Wojtyła" International Airport of Bari-Palese;

- with Bucharest Airports in "Henri Coandă" International Airport of Bucharest.

e-Airport: system concept

e-Airport is an integrated ICT application based on EGNSS that allows airport operators, ground handlers and ATC to:

- plan, monitor and manage the aircraft services process which support the aircrafts in the airport during turn around;
- plan, monitor and manage the airfreight cargo process;
- measure and distribute airport Key Performance Indicators.

The e-Airport preliminary Architecture

includes the following subsystems:

- Cargo monitor
- Aircraft service monitor
- Airport monitor.

The **Airport monitor** subsystem gets the status of the cargo and aircraft service monitor processes from the cargo processor and the central platform to measure and distribute airport key performance indicators with a ACDM / SWIM interface.

The e-Airport project will push the research and development of Airport applications by advancing technologies and testing operational procedures: e-Airport will provide an integrated Airport monitor solution which measures Airport KPI from EGNSS based aircraft service process and cargo monitors.