



PROGRAMME OF
THE EUROPEAN UNION

SUSTAINABLE CITIES & COMMUNITIES

SUSTAINABLE DEVELOPMENT GOAL

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The European Union is committed to implement the 2030 Agenda for sustainable development, both in its internal and external policies. Discover how the European satellite navigation and Earth Observation systems can contribute and support each SDG.

Space applications will be core tools for promoting sound and sustainable development, especially in cities where more than half of the world's population lives and bound to increase even more in the future.

With Galileo & EGNOS, as one of the key technologies used within infrastructure design and mobility of smart cities, city services can be considerably improved and at a lower cost. Positioning and timing information is essential for instance for operating and managing public transportation, power supply, connectivity, waste management, and much more.

Copernicus provides valuable insights about urban areas. These include information about land use and land cover classification, urban growth and urban green areas that policy-makers use to improve life in cities.



URBAN PLANNING MADE EASIER

The EU space programme offer numerous opportunities to citizens, local governments and city planners, for understanding of cities, how they grow, how their resources are utilized, the distribution of basic services, their impact on the environment and the mapping of inadequate housing. Innovative space applications can decrease negative environmental effects and help to tackle key societal issues, like concentration of population, congestion and the management of public spaces.

Copernicus images are used to provide up-to-date urban maps, which allow for careful management and view of status of green areas and city infrastructure. This information is essential for making urban planning more efficient. Copernicus data can provide a quick comprehensive view of urban areas, helping especially growing cities in developing countries where municipal record are not able to keep up with the high rate of urbanization and informal urban development. Information about the properties of buildings and of infrastructures helps policy-makers better plan the development of cities.



Copernicus data are especially powerful when combined with socio-economic data that can for example help estimate land consumption rates. Galileo and EGNOS are extensively used to support parts of city life and provide value added for the circular economy. To mention some examples:

- **smart waste management systems** with sensor-embedded garbage bins are telling the waste management company when the container is full capacity, when it needs to be emptied, cutting unnecessary costs etc.
- **Precise construction surveying** is widely used to pinpoint structures and reference points for cadastral and urban planning purposes.
- **Smart streetlights** with low-cost satellite navigation receivers make it much easier to replace damaged lights.

SPACE SOLUTIONS FOR AIR QUALITY

Copernicus is used to determine the components of air over cities which, when combined with precise location data from Galileo and EGNOS, could identify the main polluting units and ensure better implementation of environmental policies. Personal use applications or crowdsourced local air quality sensor data are also becoming more and more popular, using high quality data from Copernicus. While Galileo and EGNOS provide complementary information on the positioning of installed sensors, which is key for contextualizing the collected data.

SUSTAINABLE URBAN MOBILITY

In the strive for clean and livable cities, alternative ways of moving must be encourage to help moving citizens sustainably. Using new innovative solutions like vehicle sharing services for scooters, bicycles, carpooling, journey planners etc. will be key to succeed with cuts in greenhouse gas emissions in cities. Such applications benefit from Galileo and EGNOS information in order to track the vehicles, which are widely distributed across the city, and to help locate the vehicles.

Journey planners and optimised routes are becoming important tools. With Galileo, you can find the fastest and greenest way to your destination. All you need is a smart phone or a mobile device. Galileo is providing high precision and secure positioning information that is resilient and able to counter interference. These features are high on demand to support modern smart city applications.

FASTER DISASTER MANAGEMENT

In case of natural or manmade disasters, EU space applications can greatly aid the efforts of disaster management. Galileo and EGNOS support local emergency services, such as police and emergency rescue teams and can help reducing localisation and rescue times drastically.

Copernicus provides important information that can be used to tackle coastal and inland flooding in cities. By analyzing the status of critical infrastructure, hydrological information and coastal erosion, Copernicus services enable the development of flood maps that can help authorities to identify the most effective actions to manage crisis.

ABOUT EU SPACE PROGRAMME

Space applications play key roles in our daily life activities. The EU space programme enables solutions to tackle global challenges such as sustainability and climate change, safety and security, emergencies and mobility. The EU's flagship space programmes foster innovative services that meet the needs of users worldwide.

COPERNICUS is the EU's Earth Observation system: free, full and open access satellite data used to provide services in six areas: land monitoring, marine environment monitoring, atmosphere monitoring, climate change, emergency management and security.

GALILEO is the EU's global navigation satellite system, providing accurate positioning and reliable timing information. Galileo services are widely used by people and businesses, for example in transport, agriculture, health, finance and energy networks, search and rescue and emergency response.

EGNOS is the EU's regional navigation system. EGNOS services are used in safety-critical applications in aviation, maritime and land-based uses in most of Europe.

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#EUSpace #CopernicusEU #UseGalileo #EGNOS