

European
Global Navigation
Satellite Systems
Agency

Galileo and Copernicus: building blocks towards the 2030 Agenda



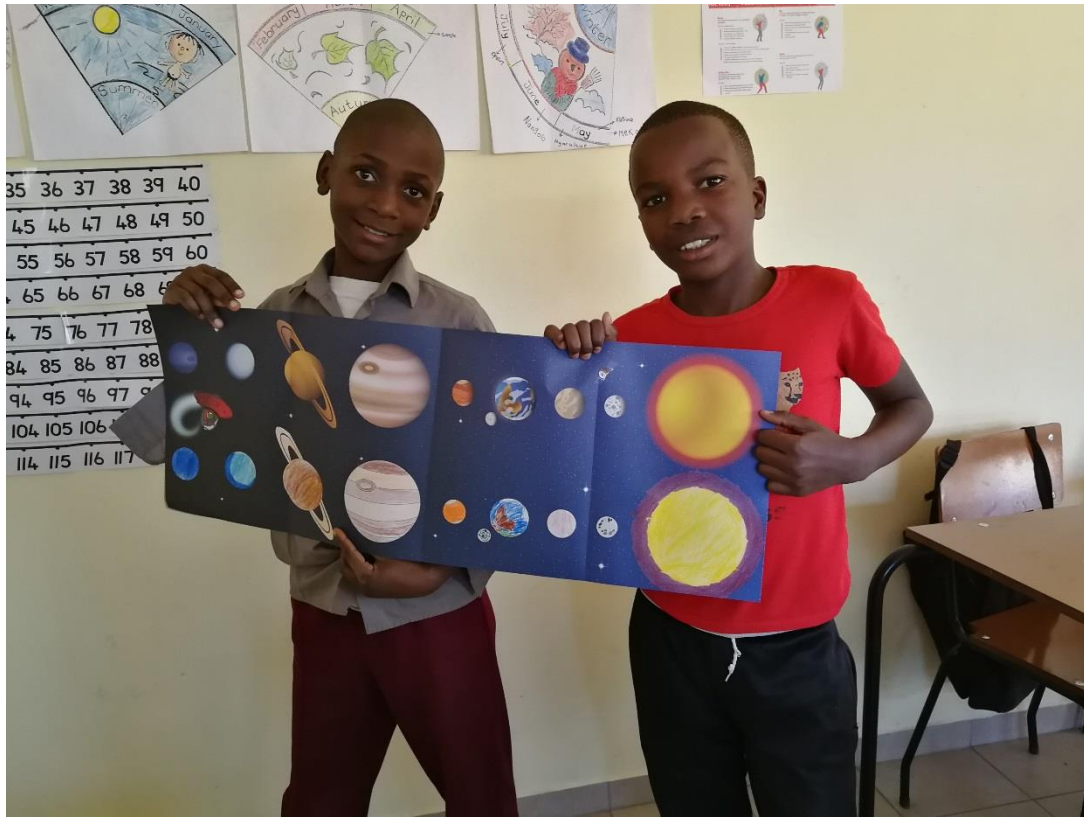
EGNOS

NAVIGATION SOLUTIONS
POWERED BY EUROPE

Fiammetta Diani, Deputy Head of Market Development

European GNSS Agency

15 November 2018, Bonn



*Katatura, township of Windhoek, Namibia
July 2018*

www.happydu.org

European Space Programmes: Galileo, EGNOS and Copernicus



European GNSS (EGNSS)
location and timing



- **Worldwide GNSS system “made in EU”**
- Delivering free of charge Open service and High accuracy service
- Delivering Search and Rescue Service with return link to inform the people in distress
- 26 satellites already launched
- Initial Service Capability declared in 2016 and Full Operational Capability planned in 2020



- **Regional Satellite Based Augmentation System**
- Improves GNSS performance by providing improved accuracy and integrity
- European coverage
- Fully operational, free of charge and widely used in Europe since 2011

Copernicus
Earth Observation



- **Worldwide Earth Observation system “made in EU”**
- Merging the data from space with in-situ components
- Delivering the following services:
 - Atmosphere Monitoring Service
 - Marine Environment Monitoring Service
 - Land Monitoring Service
 - Climate Change Service
 - Emergency Management Service
 - Security Service

EGNSS and Copernicus support all the SDGs with various levels of contribution



- 13 out of 17 SDGs are flagged as goals for which EGNSS and Copernicus contribute significantly to their fulfilment and monitoring
- 65 out of 169 indicators defined as KPIs for SDGs directly benefit from the use of EGNSS and Copernicus
- 38 use cases are presented in the report *“European GNSS and Copernicus: Supporting the Sustainable Development Goals”*



Download for free at:

http://www.unoosa.org/res/oosadoc/data/documents/2018/stspace/stspace71_0_html/st_space_71E.pdf



Sustainable cities: Galileo-based solutions help to reduce emissions and promote green behaviour



G-MOTIT



- **Electric scooter sharing** service aiming at lowering CO2 emissions and easing traffic congestion
- The service, based on a “floating sharing” scheme, uses Galileo to inform the users on the precise scooters location.



GOEASY



AsthmaWatch



ApesMobility



- **AsthmaWatch** provides navigation to mobile users avoiding polluted areas based on an air quality database updated in real-time
- **ApesMobility** promotes “green behaviour” navigating the user to low-carbon transportation modes, incentivising with award and discounts

Emergency management: professional and mobile application for prevention and response



GEO-VISION



- A professional **situational awareness** application that, via a **special visual communication software** contributes to save lives during emergencies and disasters
- **Galileo geo-localizes and time-stamp** information collected from UAVs and Earth Observation



I-REACT



- A **mobile app integrating** data from multiple sources to empower stakeholders in the prevention and management of natural disasters
- GNSS is used to **geo-reference crowdsourced information** from mobile devices and from UAV/EO imagery

Life on land and affordable clean energy: more efficient solar panels and biomass monitoring



GSA

EASY-PV



- A UAV-based solution to monitor **photovoltaic plants** ensuring greater productivity and lower operating costs
- Defective modules are identified and located by UAVs equipped with thermal cameras and Galileo receiver



GSA

COREGAL



- A platform enabling low-cost, high-accuracy for **biomass mapping**, based on the use of airborne **GNSS-Reflectometry**
- The GNSS signal transmitted by the GNSS satellites are reflected on the forest ground and are then received by the biomass sensor

Since 2012 GSA organises the farming by satellite prize for students and young surveyors



<http://www.farmingbysatellite.eu/>

Trough the prize GSA awards innovative ideas using satellite technology to increase yield of crops, improve efficiency and profit, or to reduce the agriculture’s environmental impact



In the 2017 edition a Special Africa Prize was awarded to Shamballite – Kenya



The solution: A Mobile and Satellite based Farm Information System

Based on satellite information, the proposed solution leverages on mobile technology to provide farmers with real-time information on:

- rainfall
- soil fertility
- crop health
- best crops to plant and markets



Linking space to user needs



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