

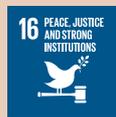
8.9 EO industry contributions

Europe has a vibrant value-adding industry that works in novel and creative ways to improve society through the application of EO satellite data. In 2017, the European Association of Remote Sensing Companies (EARSC) decided

to focus its 2017 Product Award scheme on how industry might support the SDGs with data from a wide variety of EO sources. The results are the focus of the panel on the pages below.

Industry award: EO data for development

Recognising the need for the processing of an unprecedented amount of data from a wide variety of EO sources and the potential role that industry can play, the European Association of Remote Sensing Companies (EARSC) decided to focus its 2017 Product Award on how industry can contribute to the SDGs. Entrants were asked to address the monitoring of SDG outcomes and support to implementation and to specify which indicators their products were focused on. The winner was a product called **Waste from Space**, developed by Air & Space Evidence.



Waste from Space focused on the identification of unlawful waste dumping in unlicensed locations by using satellite EO data to detect areas of non-standard or anomalous land use. The application uses data from Landsat and Sentinel, although finer spatial resolution commercial data can also be incorporated to improve results.

Unlawful dumping of waste in unsuitably prepared locations can cause significant environmental and public health hazards. Revenues from illegal waste dumping often go to organised crime, frequently in areas with lower income and fewer public resources to bear clean-up costs. The product is intended for law enforcement agencies, aiming to enable early identification of illegal activity and support combatting organised crime (**Target**

16.4). It seeks to help ensure that more waste is subject to environmentally sound lifecycle management (**Target 12.4**), push more waste to be treated sustainably within the circular economy (**Target 12.5**), and ultimately mean much less waste is released illegally into the environment (**Targets 6.3, 11.6, and 12.4**).

A total of seven entries were received, and several of the runners-up are summarised below as a further illustration of industrial capabilities.



RAPID, developed by Astrosat, is a situational awareness platform acting as a single point of access for data to address the needs of first responders and others who require situational awareness in critical situations.

The product was developed specifically to address **Target 1.5** and was developed with direct societal benefits in mind, with a framework for evaluating impact over several years. Examples of monitoring applications include the aftermath of storms, landslides and coastal erosion, the efficiency and operational status of ports, airports and national rail networks.



Starling, developed by Airbus, seeks to help companies verify their commitments to reducing deforestation across their agricultural supply chain. The number of companies making these commitments has risen by 22% in 2017, in part due to increased public attention, and this service enables companies using or producing palm oil to verify these commitments. Data from the SPOT constellation provide unbiased monitoring, enabling the distinguishing of forest from plantations, as well as small changes in tree coverage. They are complemented by data from radar imagers (e.g., Sentinel-1), which help overcome dense cloud cover in key palm oil landscapes. The product helps to ensure sustainable consumption and production patterns and encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle (**Target 12.6**).

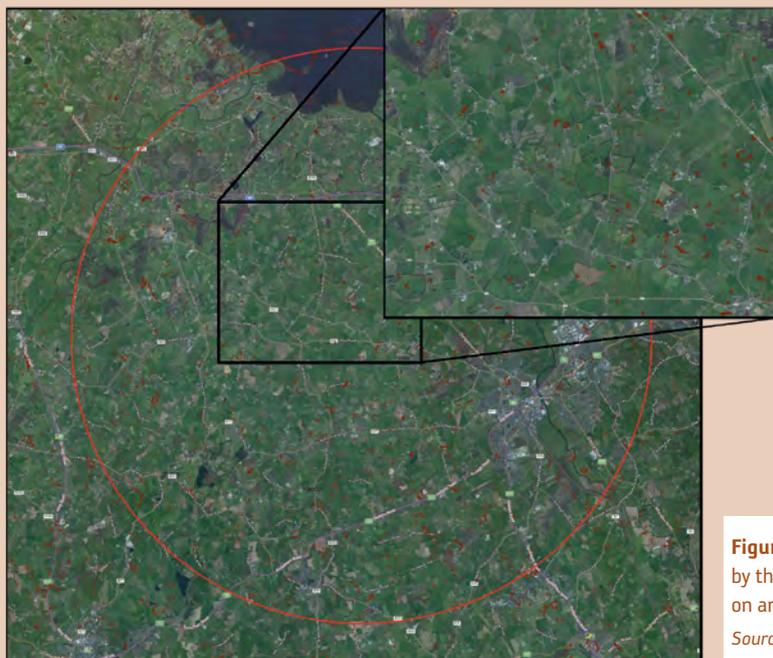


Figure 1: Areas of anomalous land-use identified by the 'Waste from Space' process, highlighted on an image map layer.

Source: Bing Maps



EO-based 3D Virtual Reality Cities, developed by GAF AG, provides photorealistic, high-quality, up-to-date and standardized 2D and 3D GIS-ready spatial information products globally, with resolutions from 30cm to 5m. These products are used as the basis for analysis by many organizations and local

authorities in developing countries. Their monitoring support for disaster risk reduction (e.g., vulnerability mapping) and emergency response addresses the participatory, integrated and sustainable human settlement planning and management featured in **Targets 11.1, 11.2, 11.3, and 11.7.**

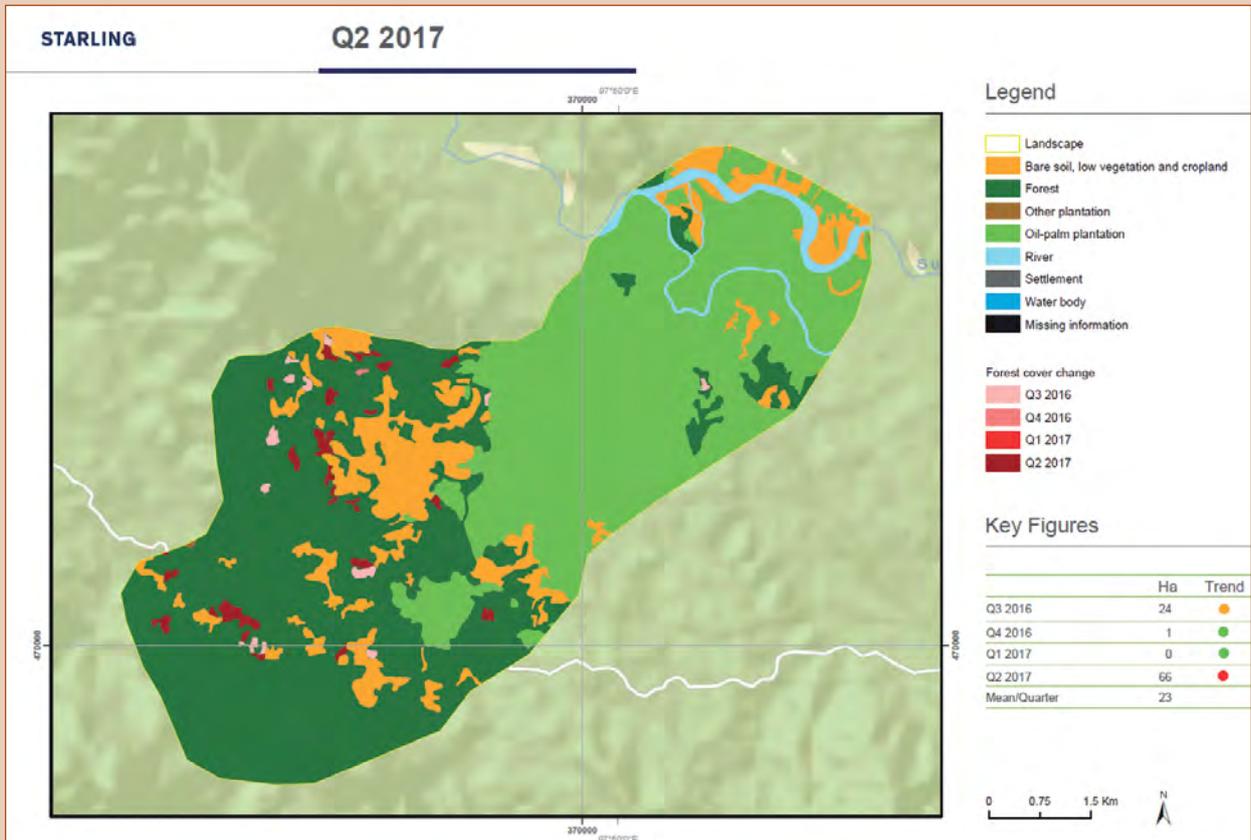


Figure 2: Starling utilises Airbus's SPOT constellation of satellites, which combine large coverage capabilities with 1.5m resolution. Their high-level detail helps companies easily distinguish forest from plantations and identify even small changes in tree coverage.

Credit: Airbus

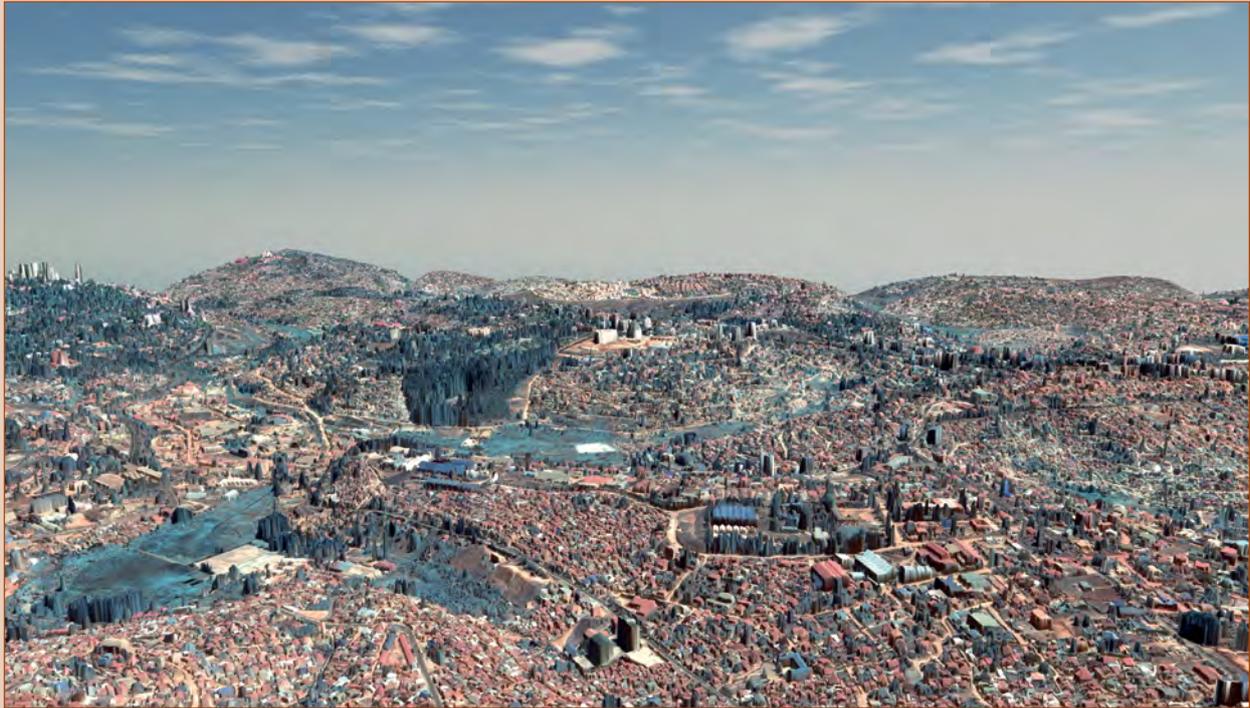


Figure 3: 0.5m resolution DSM of Kigali, Rwanda.

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The [GAF Elevation Suite](#) has been applied along with Pleiades imagery to derive 3D building models with a resolution on the order of 0.5m for Kigali, Rwanda as part of the ESA [EO4SD project](#).

These models can be used with other geospatial products for urban planning and design and for civil administration (e.g., assessment of property taxes and zoning frameworks).

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Further information

ESA SDG activities:

www.esa.int/SDG

EUMETSAT SDG activities:

www.eumetsat.int/website/home/AboutUs/InternationalCooperation/SupporttoUNSDG/index.html

European Association of Remote Sensing Companies (EARSC):

earsc.org

VTropics animal health system:

business.esa.int/projects/vgtropics

Group on Earth Observations Global Agricultural Monitoring Initiative (GEOGLAM):

geoglam.org

The Global Forest Observations Initiative (GFOI):

gfoi.org

B-Life project:

business.esa.int/projects/b-life

GMES and Africa:

au.int/en/GMESAfrica

ESA TIGER initiative:

www.tiger.esa.int

Sentinel-5:

sentinel.esa.int/web/sentinel/missions/sentinel-5

Copernicus Atmospheric Monitoring Service:

atmosphere.copernicus.eu