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EMEA SATELLITE OPERATORS ASSOCIATION

The Role of Satellite Communications in Zero Pollution Networks

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EU GREEN WEEK 2021 PARTNER EVENT

ZERO POLLUTION #EUGreenWeek
for healthier people and planet

3 June 2021

ESOA Members

22 GEO-MEO-LEO operators • Global & Regional • CEO driven

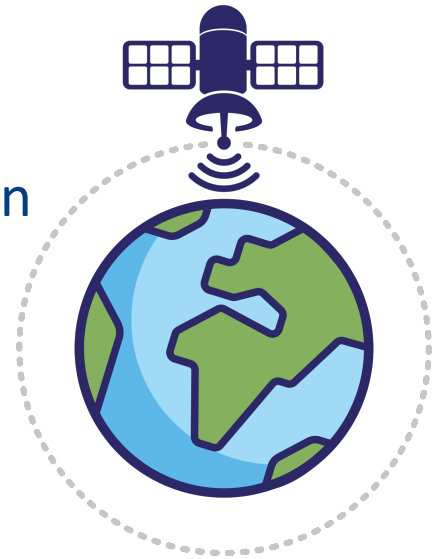
Global Challenges | Satellite Answers

A major tool to address environmental issues

Satellite imagery to monitor large scale changes to the planet is well understood

Essential in improving transport management

Satellite navigation to contribute to transport efficiency is also well-known



The role of Satellite Communications is less well-known but of equal & increasing importance

A Closer Look at Satellite Technology

- ⇒ Satellites transmit to earth for 15-20 years using solar power for 100% of its power needs
- ⇒ Service footprint of 1 satellite is massive: 1 satellite can provide 150 HDTV channels across the EU & release ZERO CO2

- ⇒ All broadcast satellites in orbit today use less energy than 1 terrestrial TV mast
- ⇒ 1 Ariane launch corresponds to ~ 1 Paris/New-York roundtrip flight with 230 persons
- ⇒ OR 0,000025% of annual EU transport emissions
- ⇒ 1 year's launches is greener than 1 evening's transatlantic flights

Satellite in the Service of the Planet

Key Enabling Features of Satcoms for IoT

Automated & resilient, instant information solution
For areas where it can be difficult to frequently deploy manpower

Complete, low power, cost-effective, easy to install
A solution in response to small, medium and large threats & risks

Guaranteed data delivery for any number of users
Handshake protocols between satellite messaging terminals & monitoring terminals

Path diversity for redundancy & resilience
Ensuring continuity & back-up through use of diverse solutions that avoid total reliance on vulnerable terrestrial networks

The Energy Sector

- ⇒ Reliance on huge networks of pipelines that often suffer accidents
- ⇒ Leaks can result in increased carbon emissions & other harm
- ⇒ Deploying manpower is resource-intensive & takes time leading to greater losses/harm
- ⇒ Network of sensors allows real-time monitoring 24/7 & rapid response if needed
- ⇒ Data from sensors is efficiently collected & shared using satcoms

Global Transportation

⇒ **International Transport Forum:** CO_2 emissions from transport may increase by 60 percent by 2050

⇒ Transport happens everywhere: Air/Sea/Road

⇒ CO2 can be increased by faulty equipment, engine damage, poor route planning

⇒ Diagnostic sensors, smart telematics, etc. can collect & share engine status data via satellite to notify fleet managers of anomalies to help limit CO2 emissions & even extend lifespan of vehicles, reducing emissions

Aviation

The ecological improvements of using satellite communications can be dramatic

Inmarsat estimates a reduction of more than 20 million tons of CO2 per year for the aviation

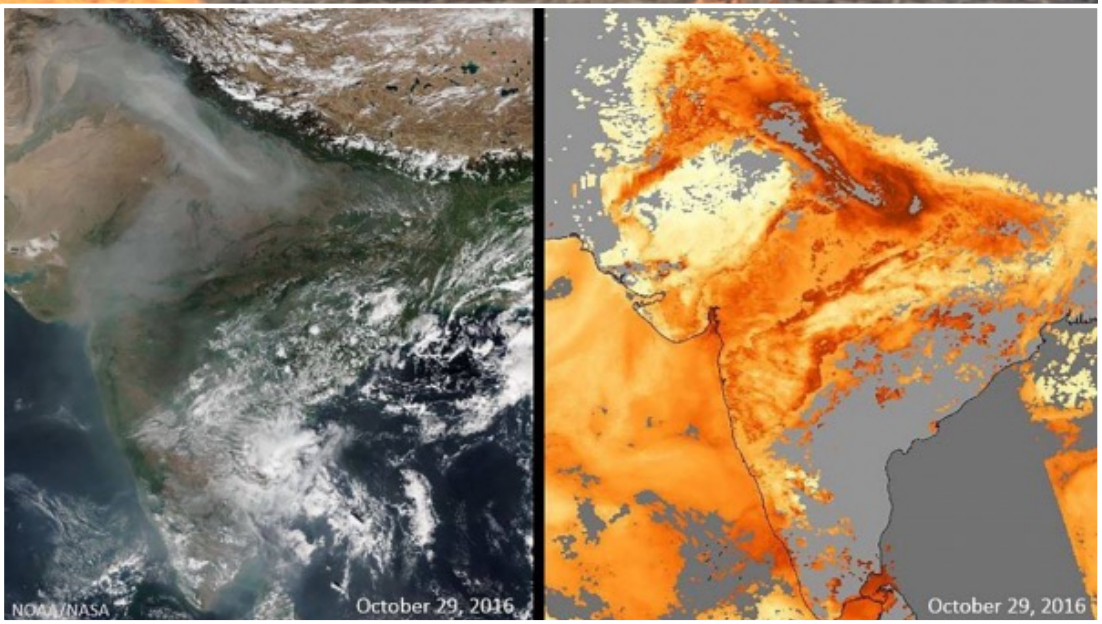
Credit:

CLIMATE & CLEAN AIR COALITION
TO REDUCE SHORT-LIVED CLIMATE POLLUTANTS

Farming

'Burning' is a common practice used by farmers in many parts of the world as a fast & economical way to clear stubble, weeds & waste before sowing a new crop

➡ **Highly unsustainable as produces black carbon**



IoT sensors that measure CO2
(collecting & sharing data via satellite)
help authorities in enforcing compliance

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Communications Networks

5G development should *Reduce Power Consumption*

- ⇒ **Lead mass market application is eMBB** - driven by OTT & gaming
- ⇒ **Huge amounts of data processing & energy**
- ⇒ **Satellite overlay can be used to pre-position content for local storage**, reducing the overall burden on the network

Data centres account for 2% of global greenhouse gas emissions & consumer huge amounts of energy

In addition satellite backhaul can help extend the reach of 5G networks while minimising energy consumption

Ubiquitous Connectivity

Pandemic positively impacted the environment as the majority of the population stayed/worked from home & so reduced congestion

⇒ Requires Internet connectivity to reach more rural communities

Satellite broadband can extend the reach of Internet connectivity enabling up to 50 mbps in the EU with minimal environmental impact/energy consumption

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Thank you