ESA Activities in Support of Global Heath - Space applications in Response to COVID-19

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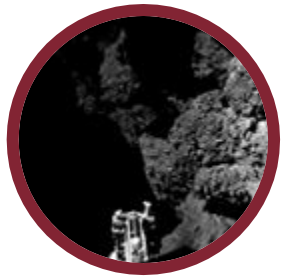
ESA Activities & Health

ESA is one of the space agencies that combine responsibility in nearly all areas of space activity.

A number of programmes across ESA's directorates have activities which are relevant to Health

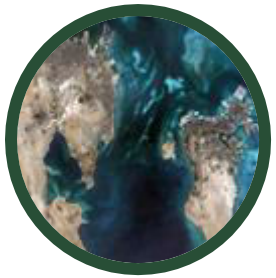
* Space science is a Mandatory programme, all Member States contribute to it according to GNP. All other programmes are Optional, funded 'a la carte' by Participating States.



space science

human spaceflight

exploration



earth observation

launchers

navigation

operations

technology

telecommunications

Earth Observation Data and Products

ESA Space Capability

- Earth observation data from a wide range of ESA Developed Earth Observation Satellite Missions
- Scientific (Earth Explorers), Sentinels (EU Copernicus), MetOp (Eumetsat)

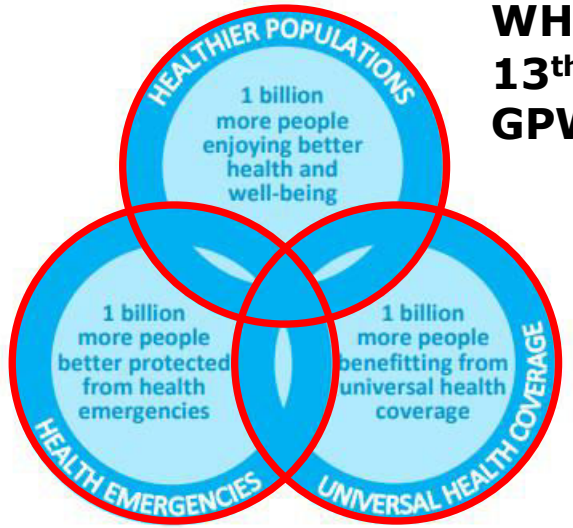
EO for SDG

Use of EO data in implementation of Official Development Assistance (ODA) projects, source of environmental information for environmental safeguard, monitoring and evaluation

Integration of EO data in measuring and monitoring of SDG targets with UN Statistical Offices and National Statistical Offices

Health SDG Relevant Focus areas;

- **Water mapping** => Accessibility, quality, disease vectors
- **Climate change and determinants of health**
- **Disaster / epidemic response** (link with IDC)



WHO 13th GPW

Human Spaceflight Research, Applications and Technology

ESA Space Capability

- Health relevant research in space and analogue platforms
- Living & working in hostile environments and development of countermeasures
- Diagnostic technology and emergency / autonomous medical care for space crew

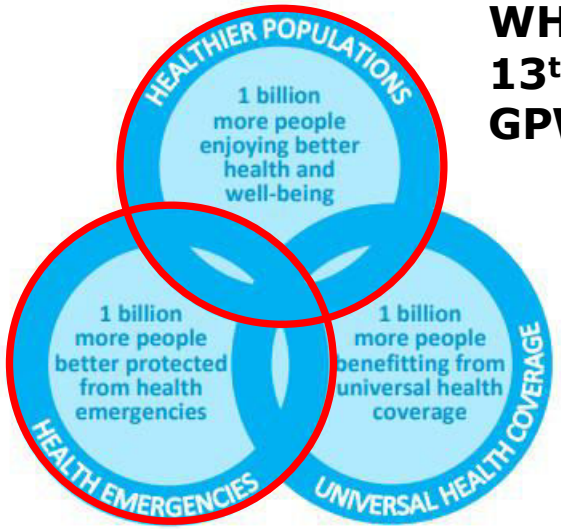
Terrestrial Health Application of Human Spaceflight research & technology

- Medical and biology research – applicants to terrestrial health
- Water treatment, food production in compact environment / limited resources

Technology & Knowledge Spin in / Spin out for Human Space Exploration

- Emergency medical care, Monitoring of personalised in isolated environments, with remote or autonomous decision making for medical care
- Medical diagnostics technologies and processes

Healthy Living / Optimising use of Physical Exercise



WHO 13th GPW

Space Technology and Services





ESA Space Capability

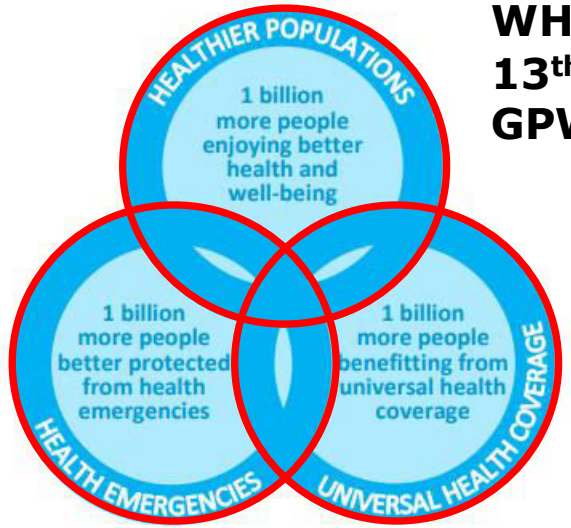
- Supporting development of projects which utilise space technologies and capabilities for terrestrial applications
- Transfer of technology developed for space applications for terrestrial use

Technology Development for both space and terrestrial applications

Enable industrial development of Products, Services and Applications using Satcom and Space Technologies

Example Health Applications Areas

- eHealth & Telemedicine (50% of ESA's Health Projects)
- Deployable lab / midi lab on table technology
- Environment – water & air monitoring
- Water treatment technologies



WHO 13th GPW

What ESA does to help the society: space in response to COVID19 outbreak

Three Tender Actions started by ESA Business Applications – Space Solutions

Economic operators are invited to submit ideas for deploying and demonstrating services to respond to the emergency that Europe is facing

→ Demonstration Projects Healthcare or Education

The first action is based on the cooperation with IT Minister for Technological Innovation and Digitization

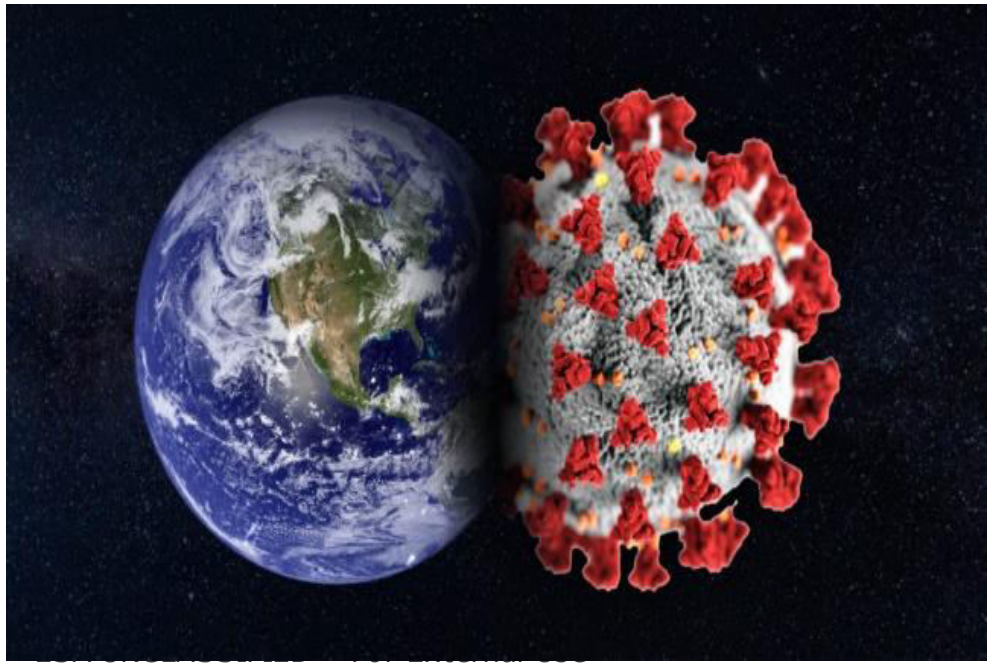
The second is based on the requirements of the UK National Health System

136 proposals have been received in total. So far **40 proposals have been retained**, thanks to the strong support of ESA Member States.

The third action will open shortly and will invite companies from ESA MS to propose demonstration projects taking place in any European country

Proposed projects and addressed topics

Projects are proposed in the areas of education and distance learning, social care, support for medical operations, monitoring and security, telemedicine, and epidemiology and resource planning



Magali Vaissiere, Director of Telecommunications and Integrated Applications at ESA, said: “We are delighted to support European industry to demonstrate the benefits that space can bring to respond to the current emergency.
“The selected projects, to be started in June, will show the value that space-based applications can bring to operators in healthcare and education, as well as to European citizens.”

http://www.esa.int/Applications/Telecommunications_Integrated_Applications/Funds_increase_for_space_in_response_to_COVID-19

https://business.esa.int/news/funding-calls-space-response-to-covid-19-outbreak

Renowned Italian hospitals and healthcare institutions, as well as the UK NHS, are involved in the pilot activities

B-Life: example of successful project

The Biological Light Fieldable Laboratory for Emergencies (B-Life) is a multi-mission, multi-user Field Communication and Control System, which is integrating satellite telecommunication with terrestrial communications (TETRA, LTE and later 5G) for emergency response operators

B-LiFE team has been preparing rapid diagnostic kits for the COVID-19 pandemics

Requests letters from President of Piedmont sent to BE government and DG for deployment of B-LiFE in IT

2 shifts of 2 months in Piedmont area + remote support for 4 months

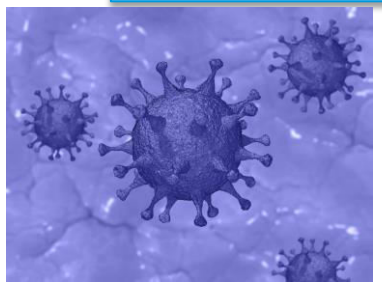
- Support to screening + training of teams + knowledge transfer
- Shipment of a screening van equipped with Satcom

https://business.esa.int/projects/b-life

https://business.esa.int/news/b-life-–-life-saving-labs-lightning-speed

What ESA does to help the society: Path to post-COVID recovery

Feasibility Study ITT to be issued in June



A new "normal" may emerge in the post outbreak - many opportunities to use advanced technology tools in new or better ways emerge

Several vertical sectors addressed, including Healthcare and Public Safety

The study is based on the collaboration with stakeholders, and among them the Toilet Board Coalition (TBC) and European municipalities

The proposed applications may address digitised sanitation systems, solutions for early warning of COVID-19 outbreaks, and applications for increasing the level of public safety and manage emergency response teams

Thankyou for your attention

For Further information:

www.esa.int

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