
The Global Satellite Industry and COVID19

While the COVID-19 pandemic paralysed society and life as we knew it, the satellite industry ensured broad connectivity and service continuity for public and private users alike, connecting and empowering them to strengthen critical networks while also providing valuable insight into environmental, social and economic changes in society. Numerous examples in this article show how the satellite industry is contributing to improving lives and preserving the health and wellbeing of world citizens.

Providing Direct Connectivity keeping millions online while isolated or at home

Since the start of the pandemic, satellite operators providing broadband connectivity directly to consumers have seen a 15-70% (depending on the country) increase in data traffic across Europe and the Americas and an increase in subscriptions in United States, Mexico and Brazil. Dedicated actions include prioritization of educational and business collaboration applications and making WiFi hotspots available to anyone who needs them.

- **EchoStar/Hughes** is participating in the FCC's "Keep Americans Connected" initiative by deferring service terminations and waiving late fees for financially challenged customers. EchoStar/Hughes is also providing satellite Internet access at a quarantine camp for military members in Fort Bragg, NC who must quarantine for 2 weeks upon return from deployment. The service is used for "morale, welfare and recreation" (MWR) – helping these returning service members connect with family and friends virtually while they are isolated.
- **Viasat** is participating in the US Federal Communications Commission's "Keep Americans Connected" initiative to defer service terminations and waive late fees for financially challenged customers and also opened its Wi-Fi hotspots, in conjunction with partners, to any American who needs them. [More info](#)

Supporting MNOs with additional backhaul capacity to connect citizens wherever they are

While people often work in urban areas, many of them live outside cities and even on islands. They all need good connectivity to continue working, follow online classes or connect with their loved ones. Many satellite operators support MNOs as they bring connectivity to suburban and rural areas and this connectivity has surged during lockdown. Satellite operators have seen increases in capacity from 10% in islands to 50% in rural areas.

- **Intelsat** provided an increased traffic volume up by 50% from Feb to Mar 2020 to support MNO customer across 4000 3G/4G sites in rural Japan.
- **NBN Co** in Australia extended its offer to increase monthly download data limits for its standard Sky Muster satellite service to 90GB of data on average, for an additional two months. The offer, which came into effect at the end of March, provides an additional 45GB for each standard Sky Muster service at no additional cost to internet providers. [More info](#)
- **SES Networks** provided additional capacity to OptimERA to enable people in Alaska to take advantage of online resources to stay connected with work, students and teachers to work on distance learning programs, and patients to do video calls with the healthcare staff at the local clinic to discuss symptoms or issues they are experiencing, which is especially critical now with COVID-19. [More info](#)
- **Telstra** provided unlimited data for personal and small business customers with home broadband plans, including those operating over NBN satellite links.

Broadcasting information and live education channels and enabling connectivity for remote learning

In these exceptional days where millions are quarantined but rely on up-to-date information and updates from the WHO, national authorities and other parts of the world, satellite broadcasting has delivered live coverage of interviews and government briefings. Broadcasting solutions have also been used, alongside satellite broadband solutions, to ensure continuity of elementary, middle and high school education for children.

- **Arabsat** is delivering educational content to more than 6 million students across via 15 educational channels in collaboration with IEN TV - the Saudi Arabian Ministry of Education Channels Network.
- **EchoStar/Hughes** is providing HughesNet for homeless students living with community members during the pandemic, in Las Vegas, NM. This allows them to stay connected with their classmates and teachers and continue learning during this disruptive time. The company is also providing connectivity for a community hub for students in the rural town of Tatums, Oklahoma to get online for schooling during COVID-19 outbreak. Only two homes in Tatums have access to the internet. 30 students travel to the town of Fox, Oklahoma for schooling.
- **SES** broadcast the #SpaceConnectsUs, a virtual town hall meeting with astronauts, scientists and celebrities to talk about life in confinement and isolation, sending a message of hope, trust in science and mutual encouragement for everyone. [More info](#)
- **Türksat** is broadcasting 6 dedicated channels through Türksat 4A with educational videos to ensure continuity of elementary, middle and high school education for children in line with their school curriculum while they are staying home. [More info](#)

Connecting first responders & supporting humanitarian missions

First responders are now using mobile vehicles very heavily and have been forced to prioritize the traffic from these emergency vehicles on mobile networks amidst the global traffic surge and add new bandwidth to accommodate the needs. It is expected that more of these mobile units with satellite backhaul will be needed, especially around hospitals and care centres. Incident response teams are relying on satellite communications in urban areas that are already connected with 4G to have a guaranteed and secure network and avoid the risk of congestion on 4G networks. Connectivity requirements have increased across multiple countries for many humanitarian missions including NGOs and UN agencies. One UN Agency operating across 2 countries & 7 mission sites increased its capacity by 150Mbps due to the pandemic.

- **C-COM Satellite Systems** has produced a White Paper, 'The Case for a Global Telemedicine Vehicle Network' which sets-out a detailed proposal and business plan for the establishment of a "Global Telemedicine Vehicle Network" establishing mobile clinics to serve medical deserts combined with broadband connectivity to connect rural patients with urban hospitals via satellites to enable consultation, diagnosis, and treatment. [More info](#)
- **Echostar/Hughes** is providing connectivity and TV programming to Kayenta Health Center that is serving as housing for [Team Rubicon Incident Management](#) staff that is overseeing a medical quarantine site for the local community.
- **EchoStar/Hughes** has introduced a new service, Hughes SatCell Connect, to deploy cellular connectivity on-demand to sites like remote hospitals.
- **Eutelsat** capacity supports police incident command vehicles stationed outside the new NHS Nightingale Hospital in London & Royal Gwent Hospital in Cardiff who have been relying on satellite connectivity 24/7 using an [Enhanced Resilience Satellite Network](#) dedicated to the emergency services. [More Info](#)

- **Inmarsat** Isatphone2 satellite phones have been deployed by Emergency Telecommunications Agency, [Télécoms Sans Frontières \(TSF\)](#) to the National Institute for Disaster Management in Mozambique, to support the coordination of the country's response to COVID19. [More info](#)
- **Intelsat** solution FlexMove is one of the solutions being used to connect ambulances, paramedics, mobile command and test centres and provided portable connectivity for temporary clinic and test facilities. [More info](#)
- **Kacific Broadband Satellites Group** is offering over 1,000 Very Small Aperture Terminals (VSATs) at no cost. The VSATs can be used for rapid deployment and fast-tracked connection to the internet for healthcare departments throughout the Asia-Pacific region. Kacific is collaborating with local services partners and governments to provide special bandwidth pricing packages of US\$1.7/Gbyte or less. [More info](#)
- **Thuraya's** network is carrying vital information flows for relief missions in regions where terrestrial telecommunications infrastructure is weak or unavailable and is increasing capacity and ensuring service continuity. [More info](#)
- **Verizon Response** has 160 engagements in the US including the enablement of coronavirus testing through connected technologies, such as mobile hotspots, smartphones and tablets *enabled by satellite* and have required extra satellite capacity to support the additional deployments [More info](#)

Enabling telehealth solutions & ensuring connectivity to essential services

Tele-Health solutions are always key for those living in isolated regions that would otherwise not be treated. During the pandemic, they have proved crucial in helping identify potentially affected patients, referring them where appropriate and exchange information with central hospitals. There are also critical services that are ensuring the continued global trade of vitally important goods including food, oil & other infrastructure essentials that are typically transported by sea. Crew on board cargo vessels are not allowed to disembark and therefore, as well as ensuring continuity of business operations, use of satellite connectivity has increased as telemedicine and crew welfare is enabled including entertainment (streaming OTT videos), social media and general connectivity thanks to satellite operators providing additional free of charge services.

- **Hellas Sat** has partnered with Africom to assist the efforts of the Government of the Republic of Zimbabwe in the fight against the spread of COVID-19. Hellas Sat is providing free unlimited broadband connectivity to 127 public clinics and hospitals across the country. The deployment was undertaken by Africom which resuscitated connectivity to infrastructure that was initially set up in 2016 at various clinics and hospitals but due to challenges in accessing adequate foreign currency to pay monthly rentals the sites have been idle.
- **Inmarsat** has introduced a 50% discount for crew voice calling services available for up to 40,000 ships on a 24/7 basis and is enabling nil-cost medical advice and assistance, prioritising telemedicine service development with its application partners, and working with shipowners to find other ways of subsidising increasing bandwidth demands from vessels. [More info](#)
- **SES**, and its **SES Techcom Services** subsidiary, is further developing its SATMED platform. In the light of the COVID-19 outbreak, the government of Luxembourg has made the use of the SATMED eHealth platform available free of charge for the healthcare professionals' community. SATMED is installed in hospitals, remote medical centers and hospital ships in multiple locations across Africa and Asia Pacific, including in Niger, where the Hôpital des Enfants au Niger is using it to establish communications with national and international doctors to receive updated information and improve their knowledge and situational awareness. [More info](#)

- **Thuraya** is enabling augmented remote location solutions with its ambulance-to-hospital telemedicine system using its IP broadband terminals and satellite network which connects onboard wired and wireless medical devices to hospitals and medical professionals and thereby transmits coronavirus patients' vital signs data in real time. This enables remote diagnosis and primary care. [More info](#)

Monitoring changes on the ground thanks to earth observation data & remote sensing

Remote sensing and imaging satellites are providing governments with key information about changes in concentrations of atmospheric pollutants such as nitrogen dioxide as well as providing health care officials and other users with comparison imagery to help monitor the effectiveness of “stay at home” and other social distancing initiatives. Earth observation satellites also provide a safe and remote method to collect global onsite information without the need to leave home or an office to go onsite. Also, by tracking the movements of goods, satellite imagery can be used to measure the economic impact of an outbreak and the rate of recovery.

- **Hawkeye 360** satellites deliver a new data layer with precise mapping of radio frequency emissions. HawkEye 360 utilized its SEAKER® product to analyse changes in patterns of vessel behaviour for a four-month period in Yangluo Port and the surrounding Wuhan New Port complex located along the Yangtze River and primary cargo centre for the Wuhan region. [More info](#)
- **Maxar's** Open Data Program has released an initial set of high-resolution satellite imagery in support of the COVID-19 response efforts. Per requests from its humanitarian partners, this release includes [Metro Imagery Basemaps](#) for the following African cities: Addis Ababa, Abidjan, Dakar, Lagos, Kano, Ibadan, Ouagadougou, Accra, Luanda, Kinshasa, Nairobi and part of northern Ghana. [More info](#)
- **Planet** is working with the United Nations, governments, other international health actors and technical partners. High-quality geospatial data enables dynamic and statistical models to provide setting-specific characterization of disease transmission, risk factors and forecasts of pathogen prevalence. [More info](#)
- **Spire Global** provides air traffic, maritime and weather data to a wide range of industries, including airfreight, logistics and financial analysis that have become critical during the current COVID-19 outbreak. [More info](#)

Beyond connectivity, helping essential personnel & health centers

In addition to all the efforts put to keep the world connected, informed and protected, the satellite industry has joined forces to help multiple other initiatives during this outbreak.

- **Airbus** is using more than 20 3-D printers in Spain to manufacture protective visor frames providing healthcare personnel with individual protection equipment. [More info](#)
- **Azercosmos** has Joined an Initiative to donate to the Coronavirus Response Fund that was established in accordance with the Decree of President Ilham Aliyev. [More info](#)
- **Boeing** is using its 3-D printing capabilities at several of its facilities to manufacture face shields as well as donating tens of thousands of masks, gloves, and other PPE, and is analysing additional applications of its engineering, manufacturing, and logistics expertise. [More info](#)
- **Blue Origin** has dedicated 25 of their additive manufacturing machines to 3D print visors used for face shields for frontline healthcare workers combating the COVID-19 crisis across the US [More info](#)
- **Cubi-GATR-AID** has teamed with medical professionals to design and develop a portable respiratory ventilator prototype, “VentiGATR”.

- **Lockheed Martin** has donated US\$2 million in personal protective equipment (PPE) and has begun producing face shields and providing engineering support for initiatives that accelerate the production of PPE.
- **Made in Space** has re-tasked its equipment to make PPE masks, and its engineers are developing a rapid response ventilator adapter to enable a single ventilator to safely support multiple patients in extreme situations. [More info](#)
- **Maxar** is leveraging its cutting-edge spacecraft manufacturing capabilities to make thousands of face shields for healthcare workers in the San Francisco Bay Area and Front Range of Colorado to protect their health and safety while they treat patients in medical, dental and senior care facilities. [More info](#)
- **Skyrora** is re-structuring its manufacturing division to produce face visors using their 3-D printing facilities and is also producing hand sanitiser. [More info](#)

Supporting industry suppliers & assisting customers

To ensure the continuity of a key industry, the communications satellite network has also assisted suppliers upon which the industry's health is dependent.

- **Lockheed Martin**, one of the world's leading aerospace, defence, and security solutions companies, is scaling up the money it is advancing to businesses in its supply chain for the period of the pandemic to a total of US\$156 million. Linked to changes in the United States Department of Defence progress payment policy, Lockheed Martin has estimated that it will be able to flow down over US\$450 million in accelerated payments to supply chain partners who are critical to supporting the United States economy and national security. [More info](#)
- **Norsat International** is another industry member that has responded by assisting its downstream suppliers. In this case, Norsat International is focusing on its inventory stock levels to ensure supply chain business continuity by working with its suppliers.

The satellite industry has responded to the outbreak by implementing the necessary health measures to protect its employees and ensure continuity of service for customers. From implementing social distancing requirements in critical operational facilities, to providing personal protective equipment to essential staff, instituting health checks for essential staff and establishing contingency plans.

- **EchoStar/Hughes** is working with its global network of local field service partners to establish contingency plans for installing and servicing customers' networks.
- **Eutelsat** has implemented its Business Continuity Plan for key workers in mission-critical posts which enables its teleports and control centres to operate nominally and support Eutelsat's customers who are reliant on Eutelsat services.
- **GVF** and **SatProf** are offering a 90-day payment deferral for those who are seeking online training opportunities in a transformed employment market which has seen many people lose their jobs. GVF Training remains fully operational and available 24/7 so those working from home or those recently unemployed can take the online courses at a convenient time and increase their abilities.
- **Istotropic Networks'** fully automated business continuity solutions are helping its customers configure systems for load balancing as internet usage has dramatically increased during the pandemic.
- **Marlink** and **ST Engineering iDirect** are providing 24/7 technical support for customers facing increased demand or other challenges resulting from the pandemic.

- **Planet** spacecraft management systems are designed to be operated remotely. Imagery products and services to customers will continue without interruption. Mitigation plans are implemented for manufacturing and to face any delays in satellite launches.
- **Intelsat** established a COVID-19 Task Force, activated its internal staff communications Emergency Broadcast System, and implemented digital-collaboration tools and remote-operations applications.
- **ST Engineering iDirect** has utilised its COVID-19 internal response team to communicate in real time with employees over a cyber secure IT infrastructure built for a mobile workforce.
- **Marlink** has implemented a COVID-19 response plan that established a crisis team that meets daily to closely monitor, coordinate and direct specific actions to protect its employees, and ramp up its' IT infrastructure to support both employees and operations.

Satellite technology is being used to enable doctors to diagnose and treat patients, communications between essential personnel to one another and their families, remote learning, and teachers to educate their students via distance learning tools.

The decisions of governments and regulators to ensure certain and continued access to key satellite bands remain instrumental to the satellite industry's ability to continue to provide these essential services in support of future crises and as we transition to a new normal.

While the satellite sector has always worked relentlessly to connect the unconnected and bring health and learning to isolated communities, the Pandemic has highlighted the need for a cohesive digital ecosystem and the urgency of ensuring connectivity everywhere, to protect, inform, and support people, governments and economies, beyond COVID19.

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