



Space Economy Leaders Meeting (Space20)
Space Agencies and the response to COVID-19
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G20 Remarks by Simonetta Di Pippo
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Your excellencies, Ladies and Gentlemen, colleagues,

Allow me to say a few words to express my sincere appreciation to our hosts at the Saudi Space Commission, the Government of Saudi Arabia and the G20 Presidency.

It is my honour to be with you today on behalf of the United Nations. I commend the visionary decision to bring space to the G20 and hope this is only the first of many G20 meetings on space affairs and the importance of continued growth of the global space economy.

G20 countries have invested heavily in the long-term sustainable future for space activities. This investment is paying off, in a big way. The space sector is a hidden pillar of our modern society. Without space infrastructure and the services that these technologies provide, our 21st-century society and economy would stop functioning.

In 2020 we have had a taste of what such large-scale disruption looks like with the COVID-19 pandemic. As we come together for the first time at the G20 level, we should look at how the space sector has been contributing to the response to the ongoing pandemic.

Today space has never been so important, for so many.

It is only right, therefore, as we come together at the G20 to realising opportunities of the 21st Century for all, and to recognise that space is part of the picture. That is why we are meeting - for the first time - at the G20 level. The value of space technology and data for socio-economic development is beyond doubt. Research from UNOOSA and the European Union shows that nearly 40% of the targets underpinning the 17 Sustainable Development Goals are reliant on Earth Observation and Global Navigation Satellite Systems. With SatComs included, this percentage is even higher. Looking at the global space economy, current estimates put the total value of the sector at over \$400 billion.

It is not surprising therefore that political and economic investment in space is at an all-time high. Substantial and consistent growth is projected for decades to come.

As the only UN entity dedicated to space, UNOOSA works across the legal, policy, scientific and technical aspects of international cooperation in space affairs.

We understand that the latest development in the global space economy has not come out of the blue. Just ten years ago, we started witnessing outstanding success for the commercial space sector. The International Space Station was re-supplied in a fully commercial mission,



reusable rocket boosters are now a reality, companies were making progress in the launching industry and downstream applications of space information and data were already accelerating growth across almost every sector of the economy.

With new downstream applications and services, the space sector is contributing more and more to the global GDP. Estimates from a variety of sources have shown that over 10% of GDP depends on the use of satellites, with indirect benefits contributing additional percentage points.

Historically EO has been dominated by institutional programmes, with large expensive satellites that required years of development and was owned by governments or space agencies. Development of new technologies for smaller satellites, coupled with a strong demand for satellite imagery and lower cost of launchers, motivated vigorous growth in the sector in the last 15 years.

The economic growth is overwhelmingly in the downstream markets, to offer tailored services developed from satellite imagery. The satellites provide tremendous amounts of data that need to be further processed: for instance, the European Unions' Copernicus satellites provide 12 terabytes of data per day, every day. In this context, the use of Artificial Intelligence in satellite imagery is the latest trend in the market bring the power of space into more decision making processes around the world.

Satellite navigation has remained an economic model where governments fund the development and operation of space and ground segment, while the technical characteristics of the signals are made openly available, and this enables the development of a "downstream market" with user receivers developed by private companies.

Technically speaking, it's the user's receiver that combines the information from satellite signals and calculates the user's location. The receivers technical performance has improved year after year, and they are nowadays integrated into many objects we use daily.

Historically, the first space application and the main sector in terms of economic value is satellite telecommunications. Satellite TV antenna pointing at a GEO satellite appeared on residential buildings in an increasing number of countries worldwide.

With smartphones and new applications such as social media, the demand for internet bandwidth continued to rise, including demand for bandwidth anywhere, anytime.

In parallel, several new private actors entered the space sector in the last 10 years. With the availability of funding, they developed technology for smaller satellites and for small launch vehicles that dramatically reduced the cost of launching into orbit. This explains the huge increase in spending in the last few years. Further, with shifting economic models from low launch costs, capital is freed up for other fields, such as research and development, compounding the positive impacts for the global space economy.



As we can see the global space economy showed a robust period of growth for several decades. The COVID-19 pandemic has provided the space sector with a chance to put these investments to the test and step up to help in the fight against COVID-19.

Global space agencies have been harnessing the power of space to help society and the economy respond to the current pandemic. Since the start of the pandemic, we, UNOOSA, launched our Space and COVID-19 Knowledge Portal to capture and share the examples of space in action. We have gathered nearly 100 specific contributions the space community has been making in the fight against COVID-19.

A common response from space agencies has been to draw on a long-standing tradition of providing open data. We have seen a range of Dashboards, Data Hubs and Portals come online and a massive volume of EO and GNSS derived data has been released into the public domain. Such products have helped spread precise and timely information to those who need it. This constant stream of up-to-date data on societal and economic indicators gives us an understanding of a rapidly developing picture. Such reliable, accurate and accessible information is crucial for stakeholders from policymakers, the media, academia, international organisations and the public alike.

Imagery, location, communications – it is little wonder that space is being put to such good use during this pandemic. With so much space already in the palm of our hand, another area of significant contribution has been new mobile phone applications. Freely available, well-tailored and open source, these applications have been helping combat COVID-19

By integrating the three key space technologies of EO, GNSS and SatComs, space-enabled mobile applications have been helping essential goods cross borders. For the public, we have been using space to observe social distancing rules. At the governmental level, space has made the rapid roll-out of national ‘track and trace’ programmes possible on time and at scale.

Simply put, space has limited disruption and helped keep our societies and the economies on track.

Space has been pivotal in keeping people connected. With social distancing and lockdowns being imposed around the world, such capabilities have become indispensable.

For example, eHealth platforms have been opened to telehealth practitioners in developing countries. In education, space applications have made a plethora of new digital learning programmes, keeping our children safe and in education.

Space agencies have also asked the commercial space sector to step up and join the fight against COVID-19. There have been many calls for Proposal and Announcements of Opportunities, all seeking to unlock the innovation and R+D power of the space economy.



These policy-driven efforts have released a vast quantity of ground-breaking technology and space application solutions mainly targeted towards supporting the healthcare and education sectors in response to the pandemic.

At UNOOSA we launch our 'Space Economy Initiative' in June as a platform to engage directly with the private sector. An opening webinar series gathered success stories of economic growth from across the global space sector during the pandemic

Through such proactive approaches, we are not just combating this pandemic but also sowing the seeds for the longer-term economic recovery as we build back better.

Finally, many space agencies have looked to their considerable in-house development expertise to leverage spin-off space exploration technologies. This has seen a wide range of new open source technologies being brought to market, including handheld ventilators, 3-D printed respirator masks and cheap but effective sterilisation kits.

Many of these new technologies have made vital contributions during this rapidly evolving situation. But this won't be the last pandemic the space sector will help combat. As we gather here, with space agencies from around the world, we must ask ourselves; what has worked well, and how can we do even better next time?

In this context, I propose three recommendations to help step up inter-agency collaboration and maximise the contribution space can make to counter pandemics:

1. Enhance avenues for exchanging best practice; share practical implementation insights and secure new opportunities for the space sector to scale up success stories across agencies.
2. Where feasible directly link open-source space data with capacity-building activities; increase access and utility for all users, especially those in developing countries.
3. Leverage the unique qualities of the space sector to monitor the global economic crisis; set up indicators and solutions to further develop space assets for stronger economic recovery.

Colleagues,

The current pandemic is a crisis unlike any we have ever seen. It has taught us that decisive action matters. It has also shown that when called upon, the space sector can deliver.

We can be proud of what we have done so far. But we must not rest.

At the United Nations, we look forward to working with each and every G20 space agency on these issues.

Solidarity, trust, expertise and cooperation. These qualities run deep in the space industry and they are exactly what we need if we are to take our collaboration to the next level.



Only together, we can bring the benefits of space to everyone, everywhere. And we have the duty to do so!

Thank you.