



## **Space Economy Leaders Meeting (Space20) White Paper:**

### Space Agencies and the response to COVID-19

This White Paper highlights some key examples of how space agencies are contributing to national and regional responses to the COVID-19 pandemic. The paper ends with three recommendations for how such activities, through international cooperation, could be scaled up.

#### **Context**

1. Political and economic investment in space is at an all-time high. Current estimates of the global space economy are in excess of \$400bn. Substantial and consistent growth is projected. Space underpins sectors far beyond traditional fields of exploration and satellite manufacturing. From transport to tourism, academia to agriculture, the space economy enables our entire socio-economic system.
2. The value of space data and technology has never been more crucial. After ten months, the COVID-19 pandemic continues to disrupt societies and economies around the world. Policymakers are turning to science, data and technology to guide them through these turbulent times. Space agencies are stepping up. From SatCom, Global Navigation Satellite Systems (GNSS) and Earth Observation (EO) to space exploration technology spin-offs, space agencies are leveraging their unique assets to support the response to COVID-19.
3. The United Nations Office for Outer Space Affairs (UNOOSA) has engaged with the international space community on such issues since the start of the pandemic. Since May 2020 UNOOSA has gathered hundreds of case studies from the global space sector, illustrating the tremendous ways space is supporting the global response to COVID-19.

#### **Key Examples**

4. Several space agencies have turned to EO Dashboards and GNSS enabled Hubs to frame their contribution to the response to the pandemic. This has seen a huge range of publicly available information is being presented through such space-enabled platforms. These EO dashboards are tracking Earth System indicators from air pollution levels to water quality. In other examples, they present economic activity indicators, including port congestion, airport throughput and harvesting activity. EO/GNSS Platforms have been developed to help people get back to their everyday lives, with GNSS products developed to display real-time cartography of infectious disease locations, identifying hotspots of disease with trajectory tracking algorithms and allowing commuters to adjust their routes to avoid contagious areas. Applications based on GNSS have been developed to provide automatic surveillance and disinfection of contaminated areas.
5. Throughout the pandemic such open and public information has kept multiple stakeholders, including policymakers, the media and the general public, well informed on the rapidly evolving impact COVID-19 is having on our society and economies. At the heart of all these examples is; a firm commitment to the space agencies' tradition of open-source data; end products accessible to a non-space audience; and international, multi-stakeholder cooperation.



6. As space gets even closer to our everyday lives, space-enabled mobile phone applications have also played a key role in supporting the response to COVID-19. These applications are often designed with specific demographics in mind. During the pandemic space agencies have developed geospatial tools and mobile applications that are supporting the transport industry reduce border time crossing for essential goods, or national health services roll out 'Track and Trace' programmes, or providing information on migrating people for their timely assistance, or simply just helping individual citizens observe social distancing.
7. Space is also pivotal in keeping people connected. Space-enabled eHealth platforms have been opened up to medical practitioners in developing countries, dramatically reducing face-to-face interaction, closing distances and reducing contagion through tele-medicine, tele-ultrasound and tele-epidemiology. In education, space applications are contributing to rollouts of digital learning programmes. From family to colleagues, space is making a fundamental contribution to keeping the bonds that bind our social and economic structures.
8. Another common contribution from space agencies has been to ignite the innovation and development capacity of national space economies. Since the pandemic began a plethora of Call for Proposals or Announcement of Opportunities have come online, offering public financial support for new space-based tools and applications. Several space agencies have also set up observatory and dialogue mechanisms with their national space economy stakeholders to monitor and mitigate the impacts of COVID-19 on the space economy itself. Such policy-driven efforts have unlocked a vast quantity of ground-breaking technology and space application solutions, to not just support the response to the pandemic but also sow the seeds for a longer-term economic recovery.
9. Finally, we have seen numerous space agencies tap into their considerable inhouse development expertise to leverage spin-off space exploration technologies. This has seen space agencies rapidly bring to market a wide range of technology solutions to supporting the COVID-19 response. In many cases, such new technology adaptations have made vital contributions to the global response.
10. This persistent evolution in quality, quantity and cost of space data and technology is driving these innovative contributions the global space sector is already making to the response to COVID-19. As space agencies gather, for the first time at the G20, the stage is set to level up cooperation and demonstrate to the world the truly game-changing contribution space can deliver.

## **Recommendations**

11. Building on the key examples above the following recommendations are offered as a core element for scaling up cooperation between G20 space agencies in the response to COVID-19 and preventative public policy for future pandemics:
  - I. Enhance avenues for exchanging best practice; share practical implementation insights and securing new opportunities for the space sector to scale up success stories across agencies.



- II. Where feasible link provision of open-source space data with capacity-building activities; this will increase both access and use of the data, especially for user in developing countries.
- III. Leverage the unique qualities of the space sector; monitor the global economic crisis, setup indications and propose solutions to further develop space assests for stronger economy recovery.

FINAL VERSION