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COMMERCIAL WEATHER SATELLITES: CHALLENGES AND OPPORTUNITIES

Abstract

For fifty years, governments have used satellites to collect weather data, and that data has been shared freely to improve weather prediction capabilities around the world. When the norm of free and open sharing of weather data was threatened in the 1980s, the World Meteorological Agency passed Resolution 40, which requires that countries continue to share "essential data:" data that are necessary for the provision of services, such as accurate weather forecasts and warnings, that support the protection of life and property.

In recent years, multiple companies – GeoOptics, PlanetiQ, Spire, and others – have proposed to sell governments data from weather satellites built and operated by private companies. These companies have the potential to be game changers in the space economy. They offer new and advanced technologies and great potential for cost savings. Not only could these advancements save taxpayer money, they could lead to improvements in forecasting capabilities that save lives and property. Perhaps more surprising than the technical achievements are the political developments. The U.S. Congress has demonstrated bipartisan support for these emerging commercial efforts: in fiscal year 2016, NOAA was appropriated funding to assess the viability of using commercial weather data.

However, amidst excitement about these new developments, there is also cause for concern – or at least caution. Every nation benefits from the existing international data-sharing regime, and (at least on the surface) commercial data sales do not seem compatible with continued free and open data sharing. This paper examines the apparent contradictions – and potential models for complementarity – between emerging commercial weather satellite efforts and international weather satellite data sharing, discussing the pros and cons of various arrangements. The paper ends by discussing how these findings extend to other emerging commercial Earth observation satellite projects and global efforts to increase free and open data sharing.