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LOOKING AT A GLOBAL PLAN TO MONITOR EMISSIONS USING SATELLITE TECHNOLOGY:  
INSTITUTIONS AND COOPERATION MECHANISMS

**Abstract**

Experts have recognized the potential of satellite technology to provide a “top down” system to verify greenhouse gas (GHG) emissions as reported by countries. Several GHG monitoring satellite missions already exist, or are in planning. While these initiatives show great potential, it’s important to note they are not necessarily designed to quantify emissions, but rather natural movements of carbon. In light of the increasing attention on emission reduction and mitigation, it is timely to take a closer look at the potential of earth observation systems to act as an independent verification tool for national greenhouse gas (GHG) inventory reports, which seek to document emissions and climate action.

In May 2016, the New Delhi Declaration came into effect, realizing the intent of more than 60 space agencies to come together to work on a global framework to establish an international, independent system for estimating and curbing anthropogenic GHG emissions. Agencies would need to develop new joint missions or cooperate to cross-calibrate their instruments, cross-validate their measurements against internationally recognized standards and centralize the data from their satellites. The ultimate goal would be to achieve global consensus as to the reality of commitments towards climate change mitigation.

A global system, comprised of contributions from all around the world, would augment existing systems of verification of GHG emissions. But, it would have to be a long-term project and would require aligning of individual agency missions, budgets and other resources, a process that would involve stakeholders beyond just the space agencies.

This paper seeks to highlight the range of institutions and cooperation mechanisms that could be tasked to support monitoring and verification of global GHGs, including: Existing global institutions could centralize data from Member states satellites: The cases of the World Meteorological Organization’s (WMO) Global Climate Observing System (GCOS) and Integrated Global Greenhouse Gas Information System (IG3IS) are insightful; A web of bilateral or multilateral agreements established by an Agency; A single governmental entity developing a global system or the private sector.

The legal and policy challenges that arise are similar to those that arise when trying to use geospatial information collected from satellites (and other platforms) to address transnational issues, including data quality, intellectual property rights, licensing, and national security. However, analysis on these issues and how they apply specifically to monitoring/quantifying GHG emissions has not been widely discussed in the literature. This paper is situated within this attempt.