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EXPLORING NEW FRONTIERS IN APPLICATIONS BY LEVERAGING PARTNERSHIPS WITH  
COMMERCIAL AND NON-GOVERNMENTAL ORGANIZATIONS

**Abstract**

Integrating novel non-space stakeholders in the full lifecycle of applied science projects (i.e., conception, development, execution, and handoff) is driving government activities towards new user markets, and creating opportunities to leverage unique skillsets that amplify the eventual benefit of the integrated approaches. In particular, tangible examples of the role and value that commercial and non-governmental organizations can have in partnership with government space agencies provide a roadmap that others can utilize in exploring similar opportunities. NASA's Earth Science Division (ESD) has undertaken a new program focused on partnerships with commercial and non-governmental organizations to integrate expertise unique to these sectors with expertise at NASA to jointly achieve what neither group could alone.

This presentation will focus on three case study partnership activities within this ESD program: (1) a

partnership with Conservation International utilizing satellite and in-situ data to conduct natural capital economic valuation for international stakeholders, (2) a partnership with Microsoft that is integrating satellite and model data into an Internet of Things-approach to urban decision making in Chicago, and (3) a partnership with Mercy Corps creating an approach to measure and monitor human resilience by integrating Earth observations with local knowledge and on-the-ground data collection in conflict-prone areas.

Each case study will define the unique skills and contributions of both NASA and the partner, how the partnership team mapped the user needs and requirements, highlight the integration of NASA and partner-provided datasets and knowledge, and the successes and challenges in building interdisciplinary teams with diverse backgrounds but common goals. A consolidated assessment of lessons learned and best practices will also be presented as a rubric for those seeking to incorporate commercial and non-governmental partnerships into their work.