

IAF SYMPOSIUM ON INTEGRATED APPLICATIONS (B5)
Integrated Applications End-to-End Solutions (2)

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THE JOHN GLENN HUMANITARIAN OBSERVATORY'S END-TO-END PROBLEM-SOLVING FOR
CHALLENGES IN HEALTH SECURITY, WATER QUALITY, AND HUMAN
MIGRATION/DISPLACEMENT

Abstract

As reflected in the United Nations' Sustainable Development Goals, societies' problems are complex and unlikely to be solved within a single disciplinary silo or by unilateral policy solutions. We take a multi-disciplinary, beneficiary-centered systems-approach in our John Glenn Humanitarian Observatory program so that the full value of geospatial data can be realized in public policy-making and humanitarian services.

Currently geospatial applications for public policy or humanitarian needs tend to be fairly ad hoc, limited in scope, and reactive to the occurrence of external shocks or events. Geospatial infrastructure, data, and expertise exist but can be fragmented across the overall landscape. While mechanisms, such as the International Disasters Charter, are in place for data distribution, complementary infrastructure for rapidly discerning meaning in data through analysis, modeling, and visualization does not exist. Most challenging of all, however, sufficiently deep and practiced relationships with policy-makers and beneficiaries can be difficult to cultivate and sustain.

The John Glenn Humanitarian Observatory program is an innovation in multi-disciplinary problem-solving in the Ohio State University's Battelle Center for Science, Engineering, and Public Policy in the John Glenn College of Public Affairs. The program places the policy-maker or front-line beneficiary at the center of a systematic innovation process that rapidly converges on minimum viable solutions by multi-disciplinary teams. Battelle Center directs and sustains this mechanism for engaging government officials and leverages industry and non-profit partners' existing geospatial data and infrastructure, while developing the future geospatial-literate workforce. We present solutions resulting from the innovation process for health security, water quality, and human migration and displacement problems.

In its next implementation phase, the John Glenn Humanitarian Observatory program seeks to deliver its own remote sensing instrument to Airbus' Bartolomeo platform using its All-in-One Mission Service in order to extend the program's geospatial capability and integrate modeling/simulation and machine learning techniques. Bartolomeo offers external payload accommodation on the forward-facing side of Columbus with unobstructed viewing in Nadir, Zenith and Limb directions. Airbus enables payload missions on Bartolomeo as implementation partner of the Center for the Advancement of Science in Space (CASIS).

The public-private partnership embodied in the John Glenn Humanitarian Observatory program creates a pro-active and repeatable approach to addressing complex societal problems, extending the value-

chain from science to public office.