

What is the Information Gap: Which UR Data Needs the Regime Could NOT Support?

The Open Skies regime cannot support users' needs for multispectral data. The users' community regards this type of data as essential input in the production of environmental risk and vulnerability studies and for assessing the extent of the damage, both potential and actual, to the vegetation. An Open Skies overflight cannot be staged either for the purpose of early detection of an event. For catastrophic events, detection accuracy must be very high and time lapse for issuing alarm must be very short. An Open Skies mission simply cannot be expected to be on patrol at the right place at the right time waiting for the disaster to strike. Nor can such an overflight be staged as part of initial crisis response when timeliness of data delivery is critical and even 1 to 2 day delay renders data obsolete. Inability to dwell over an area for sustained periods of time and to relay data electronically in near-real time (NRT) further mitigates against such mission application.

How Well, On Balance, Could the Regime do the Job Right Now?

A tentative answer to this question is that the regime already could do a lot, even on the strength of B/W visible-light photography alone, and it could do it well. One activity in particular, spanning all six user requirements and being of critical importance to the success of each, is cartographic map-making. It might not be considered (by some) as a glamorous reconnaissance tasking but consider the following:

“... Basic maps simply showing the location of settlements are still considered secret intelligence in many parts of the world. After the Afghanistan earthquake of February 20, 1998, which killed approximately 10,000 people, relief efforts were hampered by the unavailability of simple maps – the aid workers simply did not know the location of the affected villages”.¹⁷

Growing costs of natural disasters together with the growing vulnerability of urban areas to natural disasters, dictate a need for accurate and current information on: 1) transport infrastructure and urban settlement (including refugee camps) location in remote areas since in many instances conventional maps simply are not available, even to “national” governments, or are badly out of date; 2) the exposure of human settlements and their physical proximity to areas of risk. The Open Skies regime can easily support this type of baseline mapping right now¹⁸. Such map-making could be an invaluable tool under any disaster scenario, i.e., during pre-event phase for planning purposes or during the post-event phase for administering relief and managing supply logistics.

What are the Points where the Open Skies Regime Carries a Clear-Cut Advantage over Satellite Observations, and vice versa?

There are two areas of consequence in the context of disaster management where the Open Skies regime has a clear-cut advantage over satellite observations: cost and spatial resolution.

There is currently no satellite system dedicated to disaster management. All of the systems presently in orbit were not designed with that objective in mind. They are all earth observation instruments with alternative primary missions that over the years have been “creatively” adopted in the service of disaster management.¹⁹ By the same token, the user community is dependent on data feed from several

¹⁷ See Committee on Earth Observation Satellites (CEOS), *Earthquake Hazard Team Report*. CEOS Disaster Management Support Group (2001), p. 4.

¹⁸ Satellite images with resolution of less than 5 meters are often used by the humanitarian aid community as surrogates for city maps or refugee camp maps in areas for which other type of mapping information is not available. GMES Partnership Working Groups, “Crisis Preparedness,” p. 8. See also Bjorgo, “Supporting,” pp. 404-407.

¹⁹ This situation is changing. Most notably, seven organizations from Algeria, China, Nigeria, Thailand, Turkey, Vietnam and the UK have formed a consortium and agreed to contribute microsatellites into the Disaster Monitoring Constellation (DMC), the first ever satellite network specifically designed and dedicated to monitoring natural and man-made disasters. See “Microsatellite Constellation to Watch Over Disasters Forges Ahead.” A *SpaceDaily* News Service Story (may 15, 2002), pp. 1-3, and, “First DMC Microsat Images Released.” A *SpaceDaily* News Service Story (April 3, 2003), pp. 1-3. The Brazilian and Chinese governments have recently signed an accord to jointly build two environment-sensing satellites, the CBERS-3 and CBERS-4 that are also explicitly intended to help cope with natural disasters. See, “Brazil and China Agree on New Satellite Venture.” An *AFP* News Service Story (November 27, 2002), 1 pp. In addition, one of the primary mission objectives for the planned Italian COSMO-SkyMed satellite constellation is the monitoring of environmental disasters, such as floods and landslides. See, “Italy to Fund EO Fleet and Mars Water Search.” A *SpaceDaily* News Service Story (March 12, 2003), pp. 1-4.