

The resolution values needed for the purpose of managing natural disasters are presented in the matrix below.

User Requirements	Spatial Resolution	Temporal Resolution	Delivery Timeliness	Sensor/Wavelength
Prevention & Preparedness				
Danger Assessment	10-30 m	2-4 wks	Monthly	- Pan/Optical (basemapping) - SAR (topographic maps, DEMs) - IMSR: vis/IR (NIR-SWIR) - Lidar
Detection & E/W	1-5 m	1-2 days then NR-T daily	Same	- IMSR: vis/IR (NIR+TIR) - SAR
Emergency Response				
Damage Assessment	0.5-1 m	2-3 days then 1-2 wks	Same	- Pan/Optical - SAR interferometry
Emergency Relief	1-5 m	5-14 days	2 wks	- Pan/Optical - SAR
Recovery				
Rehabilitation	1-5 m	1-3 mths	Same	- Pan/Optical - SAR
Reconstruction	1-5 m	4-6 mths	Same	- Pan/Optical - SAR

How does the existing Open Skies Sensor Suite Compare to these URs?

In the context of disaster management, Open Skies data could become relevant if or when: a) the users require primarily VHR optical and/or high resolution (HR) SAR imagery specifically for their basic data input, and b) less stringent requirements obtain (i.e., non-crisis rush) for the frequency (imagery refresh rate) and duration (dwelling time) of the photographic coverage. In practical terms this implies pre-event (i.e., UR #1) and post-event (i.e., UR # 3, 4, 5, 6) overflights, when crisis urgency subsides and the aim of detection shifts from emergency (surge) response to event extent-mapping, detailed damage assessment and reconstruction monitoring.

The most important task during the preparedness phase is the assessment of the exposure and the vulnerability of values (lives, property, natural resources) at risk. Risk assessment and vulnerability studies both depend on the availability of HR topographic and ground elevation data. Cartographic data on human settlements, transport infrastructure and urban-industrial interface in general are also needed. An Open Skies overflight could already satisfy both these requirements. In addition, at 30 cm ground resolution the Open Skies (stereo) optical data can readily be used as an input into the production of high-accuracy topographic maps and digital elevation models. This capability potentially could make a contribution toward satisfying UR #1. In the aftermath of a disaster, the most important activity is the assessment of the affected area. In this case, the Open Skies optical imagery could be used to map out in detail the extent and severity of the damage both to natural and man-made resources and to monitor the pace and progress of the reconstruction efforts, especially if these are funded by foreign aid dollars. This would satisfy UR # 4, 5, and 6.