



Maldives Meteorological Service



6th Asia/Oceania Meteorological Satellite User Conference
Tokyo, Japan, 9 - 14 November 2015
Tokyo International Conference Center



Maldives' expectations of new-generation satellites for hazard monitoring

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Tokyo International Exchange Center/Plaza Heisei Meeting Facilities

Satellite Image Receiving at MMS:

- ❑ CMACAST (China) – operational
- ❑ KALPANA(India) – via internet
- ❑ GEOSAT 500 – not operational
- ❑ Meteosat 7 - via internet



Maldives' top 3 hazards that can be monitored by satellite

- Hazard 1: Torrential Rain
 - flash floods caused by torrential rain in Fuvahmulah and Madaveli (21 Oct 2015) left several property damages.



Maldives' top 3 hazards that can be monitored by satellite

- Hazard 2: Severe Thunderstorms

- heavy thunderstorms caused lighting strikes on a 65' antenna at *Kanditheemu* (23 April 2014). Severe damages to electronic items in 6 houses & island's cable TV station.



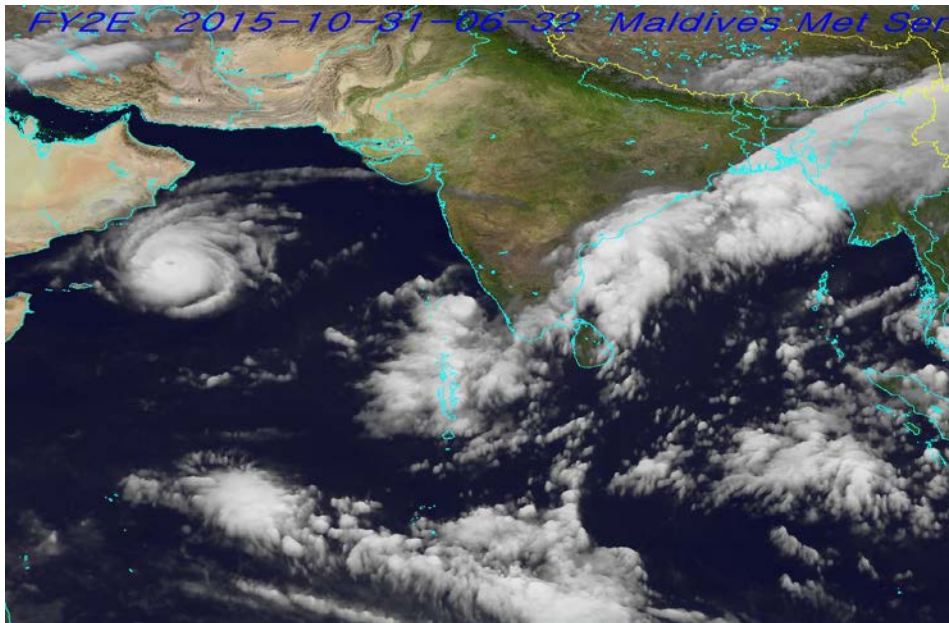
Maldives' top 3 hazards that can be monitored by satellite

- Hazard 3: Tropical Cyclones
- TC 'Murjan' and 'Nilam' (Oct. 2012) TC 'Chapala' (Oct. 2015)
Rainfall at KADHDHOO and HANIMAADHOO 62 – 65 mm 27 Oct followed by 115 mm recorded at HANIMAADHOO 29 Oct. Even a much higher intensity/ amount of rainfall in HOARAFUSHI and KELA reported most destruction due to floods on the same day. In the south, KAADEHDHOO – HUVADHU ATOLL recorded 120 mm on 31 October 2012.



Maldives' top 3 hazards that can be monitored by satellite

- Hazard 3: Tropical Cyclones
- TC 'Murjan' and 'Nilam' (Oct. 2012) TC 'Chapala' (Oct. 2015)
Strong winds were prevalent to central atolls 7 hours steady >20kt wind reported at NMC 28th Oct. Strong wind duration prolonged further until end of October. Part of southern atolls also reported strong wind on 31st Oct. The first tornado hit HULHUMEEDHOO 30 Oct. second one hit FEYDHOO both brought successive damages and huge losses.



Maldives' expectations of new series of satellites for hazard monitoring

Major hazard	Features of new generation GEO met. satellite
Hazard 1: torrential rain	<p>Multi-spectral bands: New signals derived from multi-spectral band observation before extremely heavy rainfall are expected to be useful.</p> <p>High-spatial resolution: High resolutions data of visible and infrared bands, would help to clarify tropospheric changes.</p>
Hazard 2: severe thunderstorms	<p>Rapid scanning: Data from rapid scanning observation will enable early detection of CB clouds and thunderstorms.</p> <p>New Instruments: Better accuracy can be obtained using GLM or hyper spectral infrared sounders in determining paths of Lightning.</p>
Hazard 3: tropical cyclones	<p>Multi spectral bands: New signals derived from multi-spectral-band observations will support issuance of more effective warnings.</p>

Maldives' requirements to get desired benefits from the new generation of satellites

Major hazard	Features of new generation GEO met. satellite
Hazard 1: Torrential rain	Training in imagery analysis: Training to support the retrieval of new signals from multi-spectral band observation with respect to torrential rain, severe thunderstorms and tropical cyclones.
Hazard 2: Severe thunderstorms	Easy-to-understand product: New signals derived from multi-spectral band observation or Rapid scanning observation could be made with more user friendly applications.
Hazard 3: Tropical cyclones	Stable provision of imagery without communication errors: Noting the severity of the hazards, new generation of satellites serve its purpose perfectly well inline with ground receiving station or equipment.

Maldives' plans/expectations for utilization of new-generation geostationary meteorological satellite data

- Development of a weather monitoring system using enhanced features of new-generation satellites such as high spatial resolution and multi-spectral bands.
- Active participation in scientific meetings with focus on the utilization of new-generation satellite imagery.
- Generate accurate forecasts and warnings using enhanced features of new-generation satellites.



Global warming and sea level rise will put Maldives under high risk.



Calling for WMO, satellite operators and members' support in facilitating new-generation satellite data to Maldives.

Requests cooperation with respect to training using new-generation satellite imagery.



Thank you