International Spaceborne Imaging Spectroscopy Technical Committee

Karl Staenz & Andreas Mueller
Co-Chairs

GRSS AdCom Meeting
Reykjavik, November 3 - 4, 2012
ISIS ACTIVITIES (1)

• ISIS TC Meeting held at IGARSS’12
  – ~ 30 participants
  – Alex Held stepped down as co-chair => new co-chair selected: Andreas Mueller from DLR
  – Format with prior session on mission updates to be continued for IGARSS’13
  – Discussed future of ISIS => scope, role and direction should be kept as is
  – Discussed coordination of calibration sites among the different data providers => special session on calibration of hyperspectral sensors desired
  – Discussed potential hyperspectral data products => special session desired at IGARSS’13
  – Discussed data policy => data available free of charge or at cost recovery
ISIS ACTIVITIES (2)

• IGARSS’12 - ISIS special session on ‘Spaceborne Imaging Spectroscopy Missions: Updates and Global Datasets and Products’
  – ~ 100 participants in first half session
  – ~ 80 participants in second half session

• ISIS contribution to the December 2012 GRSS Newsletter

• ISIS submitted proposals for the following sessions to IGARSS’13:
  – Spaceborne Imaging Spectroscopy Missions – Current and Future Activities
  – Calibration of and Cross-Calibration with Orbiting Imaging Spectrometers

• Next TC meeting at IGARSS’13
Mission UPDATES

• Currently 5 sensors in space (Hyperion, CHRIS, HICO, HyIS, and HJ-A10)

• Several new missions (ENMAP, PRISMA, HISUI, and GISAT) nearing launch in 2013-2016 timeframe

• Missions in planning stages (HyspIRI – NASA, HYPXIM-P – CNES, FLORIS/FLEX – ESA)

• New initiatives (SHALOM – ASI (Italy)/ISA (Israel), China?)
# Current and Planned Civilian Hyperspectral Satellite Missions
(Updated Oct. 2012)

<table>
<thead>
<tr>
<th>Mission</th>
<th>Country/Year</th>
<th>Spatial Resolution</th>
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<tbody>
<tr>
<td>Hyperion EO-1</td>
<td>USA 2000-</td>
<td>30 m</td>
</tr>
<tr>
<td>Chris/Proba</td>
<td>EU 2001-</td>
<td>17/34 m</td>
</tr>
<tr>
<td>HICO</td>
<td>USA 2009-</td>
<td>90 m</td>
</tr>
<tr>
<td>HySI</td>
<td>India 2008-</td>
<td>500 m</td>
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<tr>
<td>HJ-1A</td>
<td>China, 2008-</td>
<td>100 m</td>
</tr>
<tr>
<td>GISAT (India ≥2013)</td>
<td></td>
<td>500 m</td>
</tr>
<tr>
<td>PRISMA (Italy 2014/15)</td>
<td></td>
<td>30 m</td>
</tr>
<tr>
<td>HISUI-ALOS-3</td>
<td>Japan 2015</td>
<td>30 m</td>
</tr>
<tr>
<td>EnMAP (Germany 2016)</td>
<td></td>
<td>30 m</td>
</tr>
<tr>
<td>HyspIRI (USA 2018?)</td>
<td></td>
<td>60 m</td>
</tr>
<tr>
<td>HYPXIM P (France 2018?)</td>
<td></td>
<td>8 - 100 m</td>
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• Proceeded by unsuccessful proposals for e.g. ARIES, NEMO, Hydice, SPECTRA, etc.
• Supported by high Signal: Noise Airborne HSI systems
• Wide data access and data policies still are a key challenge
• Technical comparison of systems is difficult
Future Considerations

- Workshop on development of ‘Hyperspectral Products’
- Develop public archive of HSI datasets and simulated satellite data for data product development and training purposes
- Workshop on data management, data policy, processing and distribution of spaceborne imaging spectroscopy missions
- IEEE GRSS Leadership of CEOS Cal/Val sub-program for hyperspectral satellites?
Purpose of ISIS

The ISIS TC provides a forum for technical and programmatic discussion and consultation among national space agencies, research institutions and other spaceborne imaging spectrometer data providers.

http://www.grss-ieee.org/Resources/TechCommittees