Instrument Technologies and Architectures

Christopher Stevens, JPL

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INSTRUMENT TECHNOLOGY AND ARCHITECTURES IPDT

STATUS REPORT

May 14, 1996

Christopher M. Stevens

Roger Avant

Co-Leaders

INSTRUMENT TECHNOLOGIES & ARCHITECTURES IPDT Membership

• SBRC, K. Blasius	Wedge Filter Hyperspectral Imaging
• OSC, U. Hartman	WFOV Spectrometer
• MIT- LL, D. Lencioni	Focal-Planes, Imaging Spectrometry
• Ball Aerospace, A. Mord	Precision Pointing
• TRW, S. Manlief	Lasers
• RIT, Z. Ninkov	Active Pixel CID
• U of Wis., H. Revercomb	FTS
• SwRI, A. Stern	Imaging Spectrometry
• SSG, D. Wang	SiC Optics, Pointing
• U of Mass., S. Weinreb	MMIC Receivers
• U of A, E. Dereniak	Tomographic Imaging Spectrometry
• Lockheed Sanders, N. Byer	MMIC Receivers

INSTRUMENT TECHNOLOGIES & ARCHITECTURES IPDT Membership

LaRC, P. Carraway	Lasers, FTS, Spectroscopy
• MSFC, M. Kavaya	LIDAR
• JPL, G. Blackwood	Interferometry
• GSFC, M. Krainak	Photon Counting Devices
• JPL, E. Fossum	CMOS Active Pixel Sensors
• LaRC, G. Sachse	GCFR
• LaRC, S. Sandford	Lasers
• LaRC, J. Zawodny	Gas and Aerosol Sensor
• LaRC, D. Hinton	FTS
• JPL, D. Thomas	Optics and Imaging Spectrometry
• NOAA, E. Howard	Imaging, Sounding
• NOAA, G. Dittberner	Imaging, Sounding
• LaRC, A. Larar	FPI
• ITT, J. Puschell	FTS

INSTRUMENT TECHNOLOGY AND ARCHITECTURES IPDT

ROAD MAPS

- Draft versions of Technology Road Maps generated for nearly all of the instrument technologies represented on the IT&A IPDT
- Preliminary Technology Assessment Scores assigned to each technology
- Road Maps to be reviewed and refined by the IPDT
- IPDT consensus on Technology Assessment Scores and Probability of Readinessto be developed

INSTRUMENT TECHNOLOGY AND ARCHITECTURES IPDT

ROAD MAPS

- Advanced Silicon Carbide Optics and Structures for Integrated Sensors
- Advanced Optics Technologies for Sensorcrafts and Autonomous Sensors
- Technologies for Coherent and Non-Coherent Spaceborne Lidar
- Direct Detection Wind Lidar
- Fourier Transform Spectrometer Technology for Atmospheric Sounding
- Tropospheric Ozone Fabrey Perot Interferometer Technology
- CMOS Active Pixel Sensor Technology
- Active Pixel CID Sensor Technology
- Earth Surface Spectroradiometer Technologies
- Wide Field Imaging Spectrometer
- Tomographic Imager Technologies
- MMIC Radiometer Technology

INSTRUMENT TECHNOLOGY AND ARCHITECTURES IPDT

ROAD MAPS

- Gas and Aerosol Monitor of the Upper Troposphere
- Geo-Global Tropospheric Experiment (Imaging Gas Correlation Radiometer Technologies)
- GFCR Remote Sensing Technology for Tropospheric and Stratospheric Applications
- Technologies Enabling Space Interferometry from Multiple Spacecraft

INSTRUMENT TECHNOLOGY AND ARCHITECTURES IPDT

TECHNOLOGY CONTRIBUTIONS

Miniature Integrated Camera and Spectrometer (MICAS)

- Selected for validation on NMP Deep Space-1 Mission
- IT@A Participants include:

  SSG, Inc.

  JPL

Earth Surface Spectroradiometer (Advanced Landsat)

- Selected for validation on NMP Earth Orbiting-1 Mission
- IT&A Participants include:

  MIT Lincoln Lab

  SSG, Inc.

  Hughes SBRS/SBRC

INSTRUMENT TECHNOLOGY AND ARCHITECTURES IPDT

TECHNOLOGY CONTRIBUTIONS

Integrated Multispectral Atmospheric Sounder (IMAS)

- IMAS is candidate for an NMP Earth Orbiting Mission
- Key technologies to enable IMAS selected for NMP funding
- IT@A Participants include:

  University of Massachusetts
  Lockheed Martin
  TRW
  SSG, Inc.
  MIT Lincoln Lab
  JPL