TRL Data for JPL Programs

NRA Proposal	Proposal Title	PI	PI ORGANIZATION	TRL Level 1	2	3	4	5	6
AIST	Region-of-Interest Data Compression with Prioritized Buffer Management	Dolinar, Sam	JPL	X					
AIST	Advanced Infrastructure for Dynamic Instrument Reconfiguration & Autonomy Integration	Hines, Braden E.	JPL			X			
AIST	Multi-Gigabit/second Optical Communications Transceiver for Earth Science	Hemmati, Hamid	JPL		X				
AIST	Next Generation Space Internet Communications Services	Hooke, Adrian	JPL		X				
AIST	FPGA-Based On-Board Processor/Controller for Satellite-Borne Precipitation Radars	Berkuns, Andrew	JPL		X				
AIST	Advanced Holographic Memory	Chao, Tien-Hsin	JPL		X				
AIST	Precise Global Real-Time On-board Navigation Capability for Earth Science Remote Sensing	Bar-Sever, Yoaz	JPL		X				
AIST	Intelligent Sensor and Satellite Networks for Earth Science and Exploration	Arabshahi, Payman	JPL		X				
ATI	Small and Smart Sensor for Atmospheric Terahertz Limb Sounding	Karasik, Boris S.	JPL			X			
ATI	A Ka-Band Active Array for Remote Sensing of Precipitation	Sadowy, Gregory A.	JPL			X			
ATI	Synthetic Aperature Radar (SAR) On-Board Azimuth Pre-Filter Processor	Gudim, Mimi A.	JPL				X		
ATI	Quantum Interference Gravity Gradiometer for 3-D Sub-Surface Mapping	Maleki, Lute	JPL			X			
ATI	Advanced Optical Hetrodyne Receiver Development for Coherent Doppler Wind Lidar	Tratt, David M.	JPL			X			
ATI	Multi-Spectral Staring CMOS Focal-Plane Array for Oceanographic Imaging Applications	Pain, Bedabrata	JPL			X			
ATI	Diode Laser Stabilizatin for Optical Metrology; an Optical Atomic Clock in Support of Time-Varying Gravity-Mapping Missions	Klipstein, William M.	JPL			X			
IIP	High Altitude MMIC Atmospheric Temperature and Humidity Sensors	Lambrigtsen, Bjorn H.	JPL				X		
IIP	Miniaturized Advanced MISR Camera for EOS Follow-on Mission	Diner, David J.	JPL				X		
IIP	Study of a Spaceborne Microwave Instrument for High Resolution Remote Sensing of the Earth Surface Using a Large-Aperture Mesh Antenna	Njoku, Eni J.	JPL			X			
IIP	Submillimeter-Wave Cloud Ice Radiometer	Walter, Steven J.	JPL			X			
IIP	GOALS: GPS-based Oceanographic and Atmospheric Low-Earth Orbiting Sensor	Lichten, Stephen M.	JPL		X				

TRL Data for JPL Programs (continued)

NRA Proposal	Proposal Title	PI	PI ORGANIZATION	TRL Level					
				1	2	3	4	5	6
IIP	A Second Generatyion Precipitation Radar (PR-2) Adaptable for Multi-Mission and Multi-Orbit Applications	Im, Eastwood	JPL		X				
IIP	Advanced Altimeter for Oceans Studies	Fu, Lee-Lueng	JPL			X			
IIP	The Spaceborne Infrared Atmospheric Sounder (SIRAS) for EOS Follow-on Missic	Aumann, Hartmut H.	JPL					X	
IIP	Millimeter-Wave MMIC Atmospheric Temperature and Humidity Sensors	Gaier, Todd	JPL			X			
Prototype	WebWinds: A Java-based Environment for the Interactive Display and Analysis of Scientific Data	Elson, Lee	JPL					X	

TRL Data for GSFC Programs

NRA Proposal	Proposal Title	PI	PI ORGANIZATION	TRL Level 1	2	3	4	5	6
AIST	On-Board Reconfigurable Data Path Processor for Science Data Processing	Yeh, Dr. Pen-Shu	GSFC/Code 564			X			
AIST	On-Board Cloud Contamination Detection with Atmospheric Correction	Miller, Jerome	GSFC/Code 587		X				
ATI	Reprogrammable Data Path Processor	Yeh, Pen-Shu	GSFC			X			
ATI	Development of a Monolithic GaAs Hyperspectral Infrared QWIP Imaging System (HQI)	Jhabvala, Dr. Murzy D.	GSFC/Code 550			X			
ATI	Ultra Low-Power Digital Correlator Detector for Microwave Polarimetry and Radiometry	Piepmeier, Dr. Jeff R.	GSFC/Code 555			X			
ATI	Development of a Low Power, Miniaturized Module for the Next Generation Microwave Radiometers	Doiron, Mr. Terence A.	GSFC/Code 555			X			
ATI	Laser Sounder Technology for Atmospheric CO2 Measurements from Space	Abshire, Dr. James B.	GSFC/Code 924		X				
ATI	Controlled-Correlation Subsysem for On-Board eceiver Calibrationof Synthetic Thinned Array Radiometers (STAR) and Fully-Polarimetric (FP) Microwave Radiometers	Kim, Dr. Edward J.	GSFC/Code 975			X			
IIP	A Small, Lightweight Radiometer to Improve the Temporal Sampling of Rainfall	Kummerow, Christian D.	GSFC/Code 912				X		
IIP	A Compact Multispectral Infrared and Visible Spectral Imaging Radiometer for Cloud Surface Observations from Small Spacecrafts, Engineering Model Development	Spinhirne, James D.	GSFC/Code 912				X		
IIP	Multi kiloHertz Micro laser Altimeters ("Microaltimeters") for Earth Science Applications	Degnan, John J.	GSFC/Code 920.3				X		
IIP	Airborne Scanning Raman Lidar System Based on a Holographic Optical Element Scanner/Receiver	Whiteman, David N.	GSFC/Code 924				X		
IIP	Two Dimensional Synthetic Aperture Radiometer for Microwave Remote Sensing From Space	Le Vine, David M.	GSFC/Code 975				X		
Prototype	Technology Upgrade for Earth Science Services "Advertiser"	Olsen, Lola	GSFC/Code 902 GCMD			X			
Prototype	XML Assessment (XMLST)	Harberts, Bob	RITSS				X		
Prototype	Data Pyramid for Data Mining and Knowledge Discovery	Yang, Ruixin	GMU				X		

TRL Data for GSFC Programs (continued)

NRA Proposal	Proposal Title	PI	PI ORGANIZATION	TRL Level 1	2	3	4	5	6
Prototype	Petabyte Archives Prototyping/Standards for Petabyte Archives Extension	Kobler, Ben	GSFC/Code 423 NIST			X			
Prototype	Conformance Tests for Portability between FSMSs of Sequential Storage Media	Kobler, Ben	GSFC/Code 423			X			
Prototype	Mass Storage Testing Laboratory	Behnke, Jeanne	GSFC/Code 423					X	
Prototype	Enterprise Management	Harberts, Bob	RITSS					X	
Prototype	Distributed Image Spreadsheet (DISS)	Hasler, Fritz	GSFC/Code 910						X
Prototype	Development of a Prototype Web GIS Server based on OGC Web Map Specification	Di, Liping	RITSS			X			
Prototype	The Implementation of Catalog Interoperability Protocol (CIP) in the Data & Information Access Link (DIAL)	Suresh, Ramachandran	RITSS			X			
Prototype	CEOS Catalog Interoperability Protocol (CIP) Prototype	Enloe, Yonsook	SGT					X	
Prototype	OpenGIS Consortium (OGC)	Enloe, Yonsook	SGT				X		
Prototype	OGC Catalog Spec (WMT)	Enloe, Yonsook	SGT			X			
Prototype	Mass Storage Scalability Analysis	Menasce, Dan	CESDIS GMU					X	
Prototype	WebTheme: Visualization and Analysis of Texual Information from the World Wide Web	Nowell, Lucy	DOE PNNL						X
Prototype	Lossless Data Compression Prototype/Study for EOSDIS Data	Yeh, Pen-Shu	GSFC/Code 564					X	
Prototype	ECS Archive Study	Lake, Alla	LM				X		
Prototype	ECS Archive Study	Lake, Alla	LM				X		

TRL Data for GSFC Programs (continued)

NRA Proposal	Proposal Title	PI	PI ORGANIZATION	TRL Level 1	2	3	4	5	6
Prototype	Data Warehousing Implications for EOSDIS	Adams, Nabil	CESDIS Rutgers			X			
Prototype	Robust, Operational PC Cluster for Science Processing	Lynnes, Chris	GSFC/Code 902				X		
Prototype	Distributed Object-Based Frameworks	Abbott, Mark	OSU			X			
Prototype	Advanced Methods for Storage and Retrieval in Image Databases	Koutsougeras, Cris	Tulane				X		
Prototype	Scalable Remote Sensing Applications	Ligon, Walter	Clemson				X		
Prototype	Polar Pathfinder HDF-EOS Pilot Project	Khalsa, Siri Jodha Singh	NSIDC				X		
Prototype	Gazetteer Implementation for Indirect Spatial Referencing	Hill, Linda	UCSB						X
Prototype	Integrating a Manual Thesaurus with Automated Term-suggestion Techniques for Cross-Disciplinary Searching of EOS Data	French, James	UVA			X			
Prototype	TrueSphere Gridding of Global Spherically Distributed Data	Fekete, Gyorgy	GST & RITSS			X			
Prototype	Mercury Metadata Search and Data Delivery System	Kanciruk, Paul	DOE ORNL				X		
Prototype	Migration of V0 IMS Server to Java	Graves, Sara	UAH				X		
Prototype	Accurate, Efficient Geolocation of Swath Data	Stanford, Edward	GST			X			
Prototype	Earth Science Markup Language	Graves, Sara	UAH	X					
Prototype	XML as a Multimedia Window into Science Data	Duma, Calin	EcoLogic	X					
Prototype	Interoperability between Digital Earth and Distributed Oceanographic Data System (DODS)	Lynnes, Chris	GSFC/Code 902			X			

TRL Data for LaRC Programs

NRA Proposal	Proposal Title	PI	PI ORGANIZATION	TRL Level					
				1	2	3	4	5	6
AIST	Adaptive Data Analysis and Processing Technology	Mills, Carl S.	LaRC			X			
ATI	WATER VAPOR DIAL TRANSMITTER AT 0.94 Micrometers	Barnes, Norman P.	LaRC			X			
ATI	Efficient, Conductively-Cooled 2-Micron Laser Transmitter for Multiple Lidar Applications	Singh, Upendra N.	LaRC			X			
IIP	Gas and Aerosol Monitoring Sensorcraft : Instrument Refinement	Zawodny, Joseph M.	LaRC			X			
S&D	2-micron DIAL for CO_2 and Winds	Singh, Upendra	LaRC			X			
S&D	Adaptive Image Classification	Huck, Fred	LaRC					X	
S&D	Broadband Detector Technologies	Kist, Ed	LaRC			X			
S&D	FTS	Kist, Ed	LaRC			X			
S&D	GEO TropSat	Liceaga, Carlos	LaRC				X		
S&D	GPS Receiver Technology	Lawrence, Wes	LaRC				X		
S&D	GPS Surface Reflection	Katzberg, Steve	LaRC					X	
S&D	NIR DIAL for WV	Barnes, Norm	LaRC			X			
S&D	Synthetic Thinned-Arrary Radiometer (STAR)	Johnson, Jim	LaRC				X		
S&D	Thermal Dissipater for Laser Diodes	Choi, Sang	LaRC			X			
S&D	UV DIAL for A/C	Edwards, Chris	LaRC			X			
S&D	UV DIAL for Space	Edwards, Chris	LaRC			X			

TRL Data for ARC, GRC, & MSFC Programs

NRA Proposal	Proposal Title	PI	PI ORGANIZATION	TRL Level					
				1	2	3	4	5	6
AIST	Autonomous Planning & Scheduling of Remote Sensing Instruments for Earth Science Satellites	Smith, David E.	ARC		X				
Prototype	ECS Distributed Object Middleware and Alternative Technology Assessment	Ciotti, Bob	ARC						X
AIST	Transport Protocols for Space-Based Internets	Ivancic, William	GRC		X				
Battery Earmark	Battery Earmark		GRC				X		
Prototype	HDF-EOS DataBlade DBMS Prototype	Behnke, Jeanne	MSFC				X		

TRL Data for Academic Programs

NRA Proposal	Proposal Title	PI	PI ORGANIZATION	TRL Level 1	2	3	4	5	6
AIST	Hierarchical Algorithms and their Embedded in Realization in Reconfigurable Hardware	Gloster, Clay S	North Carolina State University		X				
AIST	Adaptive Management of Computing and Network Resources for Real-Time Sensor Webs	Welch, Lonnie	Ohio University		X				
AIST	EVE: An EnVironmEnt for On-board Processing	Graves, Sara J.	University of Alabama, Huntsville		X				
AIST	Refinement and Testing on an XML-based Sensor Model Language (SensorML)	Botts, Michael E	University of Alabama, Huntsville			X			
AIST	Development & Testing of Ultra High Density Fast Readout Optical Storage for ESE Missions	Milster, Tom D.	University of Arizona		X				
AIST	Architecture for Space Based Internets	Minden, Gary J.	University of Kansas		X				
AIST	MATLAB-Based Adaptive Computing for NASA Image Processing Applications	Hauck, Scott A	University of Washington		X				
AIST	Reconfigurable Computing Based Compression for Spaceborne Hyperspectral Image Processing	Hauck, Scott A	University of Washington		X				
ATI	A Compact, Highly-Efficient and Rugged All Solid-State UV Source Based on Fiber Lasers for UV-DIAL	Khurgin, Jacob B.	Johns Hopkins University			X			
ATI	Efficient, Compact, Conduction Cooled Laser Diode-Pumped Yb:YAG Laser for Atmospheric Composition and Ozone Measurements	Byer, Robert L.	Stanford University			X			
IIP	Airborne Lidar Induced Fluorescence Transient LIFT Method for Measuring Photosynthetic Performance and Primary Productivity in Terrestrial Ecosystems	Kolber, Zbigniew S.	Rutgers University			X			
IIP	Active Tropospheric Ozone and Moisture Sounder (ATOMS)	Herman, Benjamin M.	University of Arizona			X			
IIP	Next Generation Technologies for the in-situ Detection of NOx Radicals and Their Reservoirs from Aircraft and Balloons	Cohen, Ronald C.	University of California, Berkely			X			
IIP	Compact Hyperspectral Mapper for Environmental Remote Sensing Applications (CHyMERA)	Janz, Scott J.	UMBC				X		
IIP	Development of a Hybrid RF / Laser Radar	Allen, Chris	University of Kansas			X			

TRL Data for NOAA Programs

NRA Proposal	Proposal Title	PI	PI ORGANIZATION	TRL Level 1	2	3	4	5	6
IIP	Airborne Measurement of New and Important Trace Gases in Support of Chemical Studies	Elkins, James W.	NOAA/CMDL			X			

TRL Data for Small Corporation Programs

NRA Proposal	Proposal Title	PI	PI ORGANIZATION	TRL Level 1	2	3	4	5	6
AIST	Reconfigurable Systems on a Chip (SOC) using Universal Logic (ULE) for S/C	Waymire, John	Maxwell Tech.			X			
AIST	Ultra-Low Power Radiation Tolerant Reconfigurable FPGAs	Fuller, Earl	Pico Dyne Inc.		X				
AIST	FlightLinux Operating System for Use with Spacecraft Onboard Computers	Stakem, Patrick H	QSS			X			
ATI	High Efficiency , Double-Pulsed, High Beam Quality, Nd Laser for Global Ozone	Hovis, Floyd E.	Fibretek, Inc.			X			
ATI	A 256 Baseline, 2-Bit Cross-Correlator Chip for a Spaceborne Synthetically Thinned Aperture Radiometer	Timoc, Mr. Constantin C.	Spaceborne, Inc.			X			
ATI	Ultrahigh Dynamic Range, High-Speed A/D Converter for Laser Ranging	Syage, Jack	Syagen Technology, Inc.			X			

TRL Data for Large Corporation Programs

NRA Proposal	Proposal Title	PI	PI ORGANIZATION	TRL Level					
				1	2	3	4	5	6
AIST	Fault-Tolerant Low Power Transceiver (LPT) Design for Reconfig. Comm.	Orr, Richard S.	ITT Industries		X				
AIST	Real-Time Data Processing On-board Remote Sensor Platforms	Lindell, Scott D.	Lockheed Martin Astronautics	X					
AIST	Optimized Compression for Earth Science Data Using JPEG 2000	Rountree, Janet	SAIC			X			
AIST	Real-Time, Reconfigurable Hardware for On-Orbit Processing of Earth Science Data	Sandor-Leahy, Stephanie R	TRW			X			
ATI	Optical Cryocooler Development	Mord, Allan J.	Ball Aerospace and Technologies Corp.			X			
ATI	Wide Field of View Adaptive Optical System for Lightweight Deployable Telescope Technologies	McComas, Brian K./	Ball Aerospace and Technologies Corp.			X			
IIP	Miniaturized Infrared Atmospheric Spectrometer MIRAS	Roche, Aidan E.	Lockheed Martin Advanced Technology				X		
IIP	Atmospheric Infrared Sounder (AIRS) Light	Egdall, Mark	Lockheed Martin IR Imaging Systems			X			
IIP	Wide Field Imaging Spectrometer Engineering Model	Hartmann, Dr. Ulli G.	OSC				X		

TRL Data for National Laboratory Programs

NRA Proposal	Proposal Title	PI	PI ORGANIZATION	TRL Level					
				1	2	3	4	5	6
AIST	Mission Manager for Supervisory and Autonomous Satellite Operations	Tuohy, Seamus	Draper Labs	X					
AIST	Cat's Eye Modulating Retroreflectors for Free Space Optical Data Transfer Using Quantum Well Modulating Retro-Reflectors	Rabinovich, William S	Naval Research Laboratory		X				
ATI	High Efficiency Remote Sensing Laser Technology	Fields, Renny A.	Aerpspace Corporation		X				
IIP	The New Generation of Radar Altimeters: Proof of Concept	Raney, R Keith	Johns Hopkins University/APL						X
IIP	Development of a Self-Calibrating Instrument for Monitoring Ozone and Water Vapor	Yee, Jeng-Hwa	Johns Hopkins University/APL				X		
IIP	Development of a Compact, High Sensitivity Sensor for In Situ Measurements of Atmospheric SO2	Kliner, Dahv,	Sandia National Laboratories			X			
Rad Hard Pentium	Rad Hard Pentium		Sandia National Laboratory					X	