

**Workshop to Develop a Portfolio of
Low Latency Datasets for Time-Sensitive Applications**
27-29 September 2016
Langley Research Center, Hampton VA

Time-sensitive remote sensing data are designed to meet the needs of decision makers who can rapidly interpret and integrate the information to guide actions more accurately and consistently. Low latency, or near-real time satellite data, contribute to activities that deliver societal benefits including disaster risk, resilience, food security and sustainable agriculture, water and energy resource management, and ecosystem sustainability. NASA has expertise, research, observational infrastructure and partnerships to capture, process and deliver low-latency data sets, but the extent of these assets are not fully mobilized. By articulating the urgent science-informed decision making enabled by rapid response using low-latency satellite data, NASA and the stakeholder communities will be able to target resources to improve research results, advance application science, optimize data production, and guide technology development.

The goals of the workshop are:

1. Describe and characterize the existing NASA low-latency data portfolio in Earth science;
2. Determine what near real time datasets we could have in the coming decade, what is needed by the community and the process required to provide these datasets;
3. Articulate the key underlying science questions that are answered with low latency remote sensing data; and
4. Articulate the issues and challenges of near-real time data acquisition and management.

Expected Workshop Outcomes:

- *Development of a portfolio for existing NASA NRT datasets and associated data products and infrastructure;*
- *Identification of significant NRT shortfalls and opportunities for research and application science that would improve results; and*
- *Establish a community of practice and stakeholders to continue planning and coordination actions to increase and accelerate the use and utility of NRT data and target resources to address shortfalls and opportunities.*

**Tuesday, September 27, 2016
NASA Langley Reid Center Conference Room**

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| 8:00am | Registration & Check-in | |
| | Speaker | Topic |
| 9:00am | Molly Brown and/or Diane Davies | Welcome to Workshop Goals and objectives for meeting Day 1 – focus on data producers |
| 9:10am | Michael Freilich, NASA HQ, (Remote presentation) | Charge of the workshop and NASA Earth Science priorities |
| 9:40am | David Green, NASA Applied Science Program, NASA Headquarters | Disasters and the application science need for NRT data |

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| 10:00am | Christine Bonnicksen, NASA Headquarters | The development of requirements for new missions with attention the NRT. |
| 10:25am | Kevin Murphy, NASA Headquarters | Increasing the utility of NASA's NRT data portfolio |
| 10:50am | Chris Justice, UMD, LANCE User Working Group Chair | LANCE NRT data and the role of UWG and key end users |
| 11:10am | Coffee break | |
| 11:30am | Pat Coronado /Kelvin Brentzel, Direct Readout Laboratory, NASA GSFC | Direct Readout Laboratory and their provision of NRT data |
| 11:50am | Will Stefanov, Associate ISS Program Scientist for Earth Observations, NASA JSC | Overview of the Near-Real Time Data Potential of the International Space Station |
| 12:10pm | Alex Fore, JPL | RapidScat |
| 12:20 pm | Don Sullivan and Jay Al-Saadi, NASA | NRT from field campaigns |
| 12:40pm | Ryan Boller, NASA GSFC | The Common Metadata Repository, the Earthdata Search Client and Worldview: ESDIS tools that could be leveraged towards a NRT Portal. |
| 1:00pm | Lunch Break | |
| Lightning talks of products proposed to be included in LANCE | | |
| 2:00pm | Michael Goodman, NASA MSFC | NRT Lightning Imaging Sensor (LIS) from the ISS. |
| 2:10pm | Dan Ziskin, NCAR - Atmospheric Chemistry Observations & Modeling Laboratory | Measurement of Pollution in the Troposphere (MOPITT) NRT. |
| 2:20pm | Molly Brown | Introduction of breakout group topics, objectives and directions |
| 2:30pm | <p>Portfolio development and gap identification for NRT data products, and discussion of NRT science questions.</p> <p>Outcomes:</p> <ul style="list-style-type: none"> ➤ Each group should review the NRT portfolio, and discuss the challenges, opportunities, data availability, and data needs for each application area ➤ Each group must report at least two conclusions from the breakout group in a single PowerPoint slide <p>LANCE user working group in parallel session.</p> | |
| 4:30pm | Reports back from groups (5 minutes each) | Designated reporter from each group with 1 PowerPoint slide |
| 5:20pm | Open Discussion | |
| 6:00pm | Molly Brown | Conclusions, start time on Day 2, and invitation to Social |
| 6:05pm | NRT Social and Poster Session at Cafeteria area | |

Wednesday, September 28, 2016

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| 8:00am | Coffee, Registration & Check-in | |
| | Speaker | Topic |
| 8:30am | Molly and/or Diane | Welcome to Day 2 – Focus on Sectors Goals and objectives for Day 2. Paired NRT data producers and users in different sectors |
| 8:40am | Lawrence Friedl, NASA HQ | Applications perspectives |
| 9:00am | Brenda Jones, USGS | Hazards Data Distribution System / NRT Landsat |
| 9:20am | Stuart Frye, NASA, GSFC | NRT data for CEOS and GEO |
| 9:40am | Mike Little, NASA HQ | Advances in technology: improving delivery and accessibility of NASA's NRT data |
| 10:00am | Ana Prados, UMBC | NASA Applied Remote Sensing Training (ASRET): Building Capacity to access and use NASA NRT products |
| 10:10am | Coffee break | |
| 10:40am | Bob Tetrault US-FAS and Chris Justice, UMD/ GEOGlam | Agricultural and Drought Monitoring |
| 10:50am | Brad Zavodsky, NASA SPoRT and Michael Folmer, NWS Weather Prediction Center | Use of Satellite Data within Weather Decision support systems |
| 11:00am | Wilfrid Schroeder, UMD and Brad Quayle USFS RSAC | Fire data and users |
| 11:20am | Dave Winker, NASA LARC and Kim Richardson, NRL | CALIOP- derived NRT aerosols applied in NRL NRT data products |
| 12:40am | Doreen Neil / Jim Szykman, LARC and EPA or NOAA end user | NRT data for global air quality monitoring. |
| 1:00pm | Lunch Break | |
| 2:00pm | Patrick Minnis, NASA LaRC | NRT of NASA Langley Satellite Imager-Based Cloud Property and Clear Sky Temperature Retrieval Datasets |
| 2:20pm | Ryan Boller, NASA GSFC | NRT Portal |
| 2:40pm | Molly Brown - Introduction to breakout groups | |
| 2:50pm | Portfolio development and gap identification for NRT data products Outcomes: ➤ Each group should review the NRT portfolio, and create a list of data used, data gaps, future data needs, and science questions behind each applications area ➤ Each group must report at least two conclusions from the breakout group. | |
| 4:50pm | Reports back from groups (5 minutes each) | Designated reporter from each group with 1 PowerPoint slide |
| 5:10pm | Open Discussion, Moderated by David Green, NASA HQ | |
| 5:50pm | Adjourn for the day | |

Thursday, September 29, 2016

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| 8:00am | Coffee | |
| | Speaker | Topic |
| 8:30am | Molly and/or Diane | Welcome to Day 3 – Goals and objectives for third day of the meeting |
| 8:40am | William Blackwell, MIT Lincoln Labs | Cubesats and related technologies and mission opportunities for low latency data |
| 9:00am | Questions and discussion | |
| 9:10am | Christopher Lippitt, University of New Mexico | NRT data and Earth Science priorities |
| 9:30am | Questions and discussion | |
| 10:10am | Coffee break | |
| 10:30am | Molly Brown | Overview of results from breakout groups on days 1 and 2 |
| 10:40am | Panel Discussion – objectives are to discuss the scientific, programmatic and practical consequences of the NRT portfolio, and ways we can continue to ensure NRT data is available in the coming decade. Chair: David Green Participants: Sandra Cauffman, Chris Justice, Kevin Murphy, Michael Goodman | |
| 12:50pm | David Green | Closing Remarks |
| 1:00pm | Adjourn | |