**Session 2C: Interoperability, Compatibility and Accessibility
Communications Issues**

Co-chairs: *Mr. Lloyd E. Irwin, Chief, Operations Support and Performance Monitoring
Branch, National Weather Service*

*LCDR Susan Groening, Chief, Communications Division, Fleet Numerical
Meteorology and Oceanography Center*

Rapporteurs: *Ms. Cynthia Ann Nelson, Senior Meteorologist, Office of the Federal
Coordinator for Meteorology*

*Mr. Michael Neyland, Office of the Federal Coordinator for Meteorology
(Science and Technology Corporation)*

Synopsis

1. Opening Remarks

- Mr Irvin

  - Mr. Lloyd Irvin provided an overview of the NOAA National Weather Service
    communications concerns. He said that NWS will accommodate international codes
    and national codes as needed. The current concerns are obtaining data in a timely
    manner and providing continuing service through down times. Within NWS and for
    other agencies as well, there is a single point of failure at the National Weather
    Service Telecommunications Gateway (NWSTG) and AWIPS Network Control
    Facility (NCF). Partial backup capability exists with DOD but some types of data
    would be lost if the NWSTG and NCF were down. This has occurred in the past
    when contractors in Silver Spring cut communication cables, which resulted in the
    NWS communications being down for 3 to 4 days. NOAA/NWS has been working
    on setting up a full backup communications structure by having off-site switching
    centers. They have authority to build the sites and the NCF part of the problem will
    be resolved soon. NWS currently has limited retransmission capability and needs to
    build capacity to handle large amounts of data during peak periods. The building of a
    backup site has allowed NWS to restructure the entire gateway architecture and bring
    in new technology to begin addressing all their concerns.

2. Group Discussion

- *National Weather Service.* In addition to the above information provided by Mr. Irvin, it
  was also noted that the NWS Weather Forecast Offices need/desire to have access to the
  various mesonets to help their forecasting. Another problem is the large quantity of data
  to be gathered, ingested, and distributed.

- *National Aeronautics and Space Administration* reported working on an aviation weather information system which will process data and provide it to the airplane cockpit in real time. In addition, there is an initiative underway to consider collecting data from aircraft at low levels. NASA is assessing who are users of new data sources and how will they meet requirements. A new communications architecture will be needed to address new ways to access and distribute data. Their concerns include data latency, data quality, assured delivery, huge increase in data amount and size, and need for a scalable system.

- *Federal Aviation Administration* is concerned about changes to weather products and requirements that will impact other systems. Their users must have immediate access to data, especially in the 6 to 12 hour time frame. Short term use is the key for FAA and in general, non-real time or archived data are only used for accident investigation. FAA tries to assess what customers need and what regulations apply before adopting new technologies. Their data is currently sent via the FAA communications system (WMSCR), NWSTG and private networks. They are currently looking to using a private network to pass all required information to their users. There is a need to coordinate across agency and users when changes will be made.

- *Federal Highway Administration* noted that many state and local departments of transportation are installing weather type sensors on their winter plows, which will add to the data pool. These data are needed for the surface transportation concerns to better accomplish their tasks.

- *Fleet Numerical Meteorology and Oceanography Center* has moved from the point to point architecture to a network-centric/web-centric high bandwidth architecture where the users can pull what they need. Their concerns center on system security and reliability of data. DOD communications architecture includes satellite dishes, special networks (classified and unclassified), a client server, Internet service, and a GBS narrow spot beam.

3. Recommendations

- A forum should be activated to discuss the following issues:
    - Present and planned architecture
    - Leveraging present systems (and COTS)
    - Status of research and development
    - Taking advantage of economies of scale