

# NextGen Network Enabled Weather (NNEW)

## Demonstrations

### Friends/Partners in Aviation Weather

By: Tom Ryan, FAA Program Manager,  
Co-Lead 4-D Weather Data Cube Team

Date: October 22, 2009

# Overview

- Program description
- September 2009 IT Demonstration
- OWS-7
- NextGen Demonstrations

# NNEW Program Description

**A network-enabled, virtual, 4-Dimensional Weather Data Cube, established jointly with NOAA & DoD, which draws information from multi-agency sources, for aviation users.**

- Key Themes:
  - An integrated and nationally consistent, common weather picture for observation, analysis, and forecast data available to all users
  - “Network Enabled”: Available, secured, real-time, information
  - “Virtual”: Repository with no single physical database or computer
  - Conceptually unified source distributed among multiple physical locations and suppliers
  - Purpose: Provide a source of weather information for operational decision making

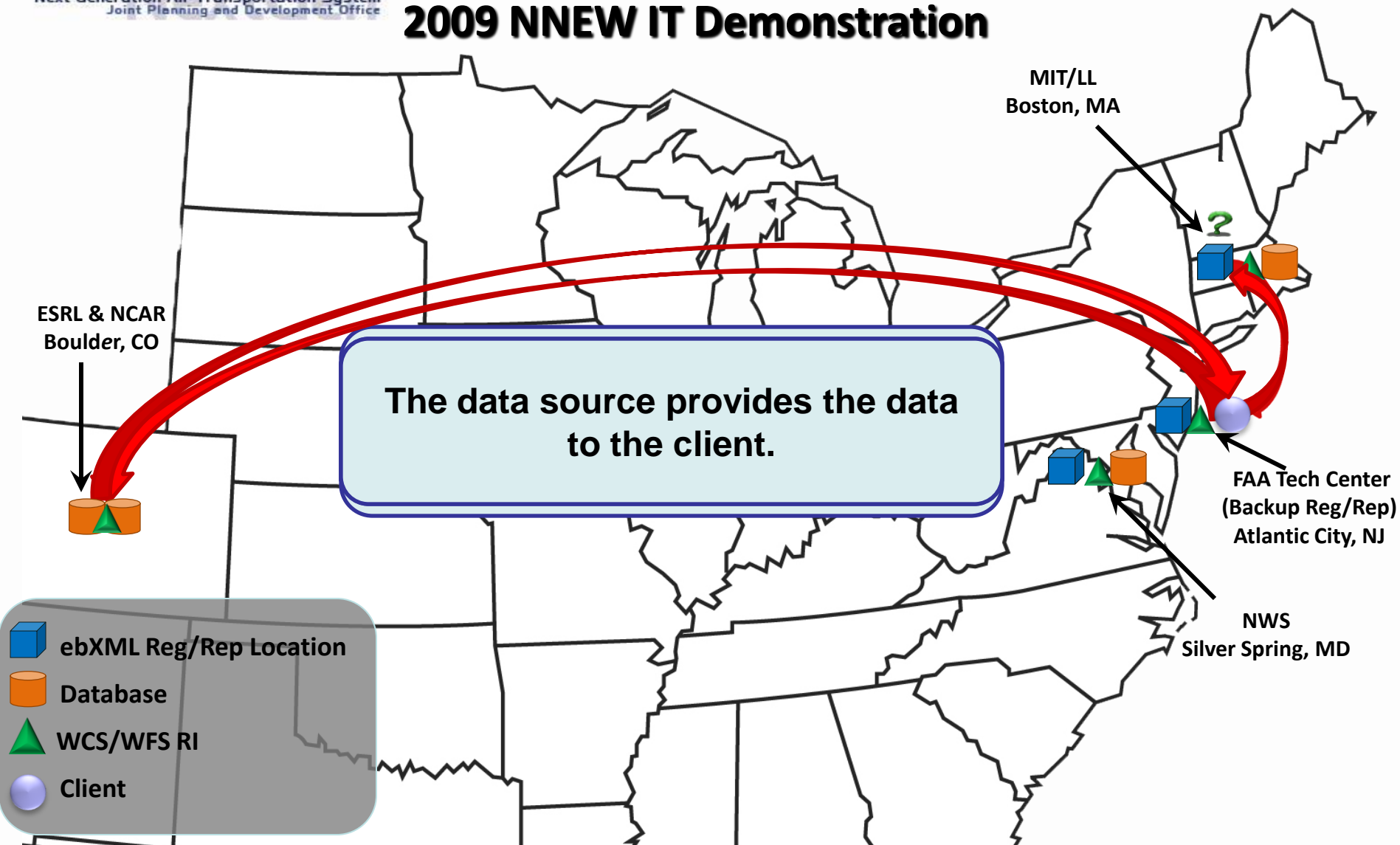
# September 2009 IT Demonstration

- Registries/repositories at MIT/LL, NWS, & FAA Technical Center
- Databases at NCAR, ESRL, MIT/LL, & NWS/MDL
- OGC compliant, non-gridded data formats, mostly conforming to WXXM (being developed jointly with EUROCONTROL)
- Gridded data formatted using NetCDF-4 (allows for subsetting)
- Initial implementation of OGC Web Coverage & Web Feature Services

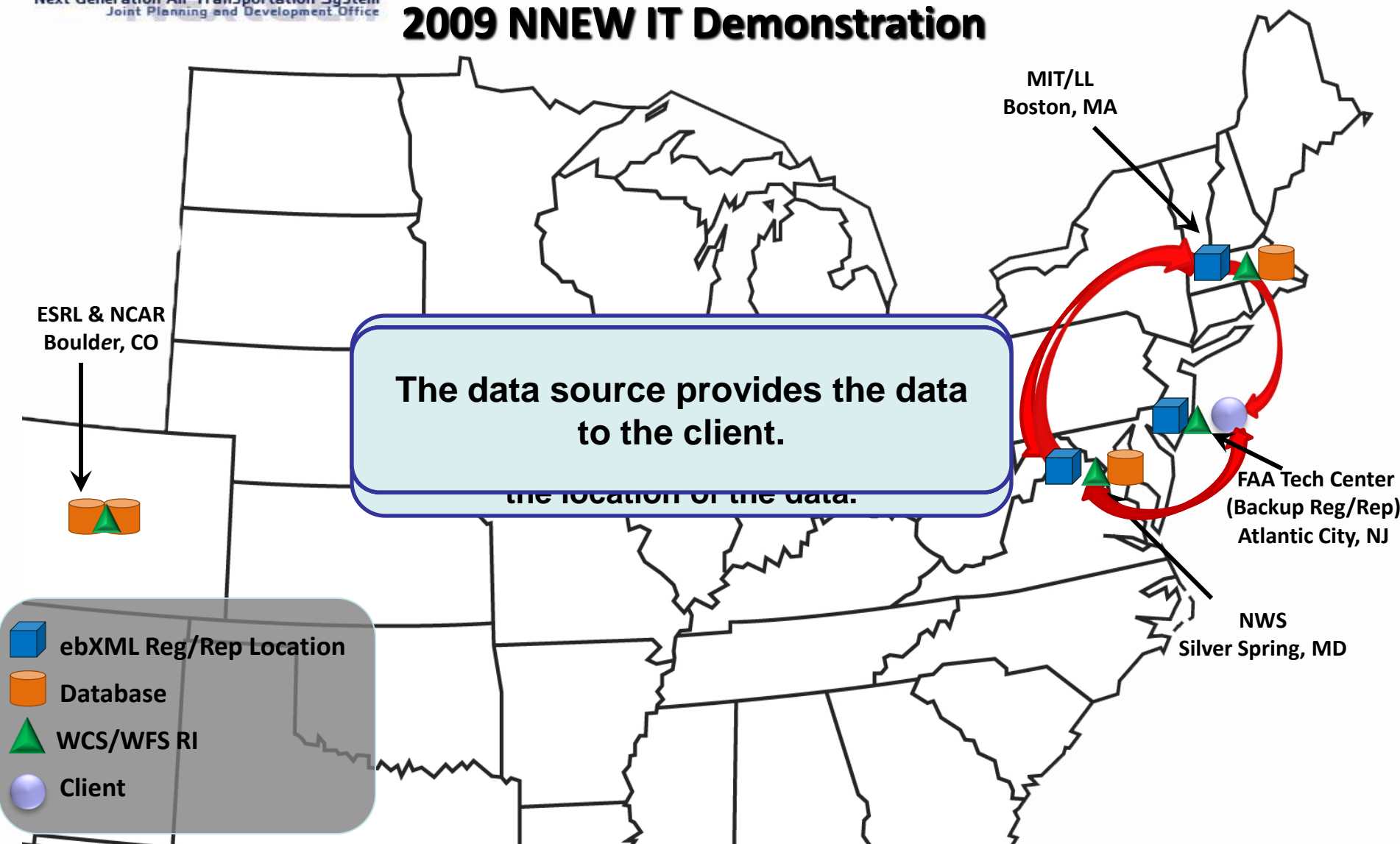
# NNEW FY09 Demonstration Datasets

- NCAR
  - Current/Forecast Icing Severity, Potential, & SLDs (CIP/FIP)
  - Ceiling & Visibility (C&V)
  - Turbulence (GTG)
  - RUC20 Air Temperature, Relative Humidity, & Wind Speed
  - PIREPs
- ESRL
  - Rapid-Refresh Model Air Temperature & Wind Speed
  - MDCRS
- MIT/LL
  - CIWS Echo Top & Vertically Integrated Liquid
  - Lightning Data
- NWS/MDL
  - NDFD Wind speed
  - LAMP Thunderstorm Probabilities

## 2009 NNEW IT Demonstration

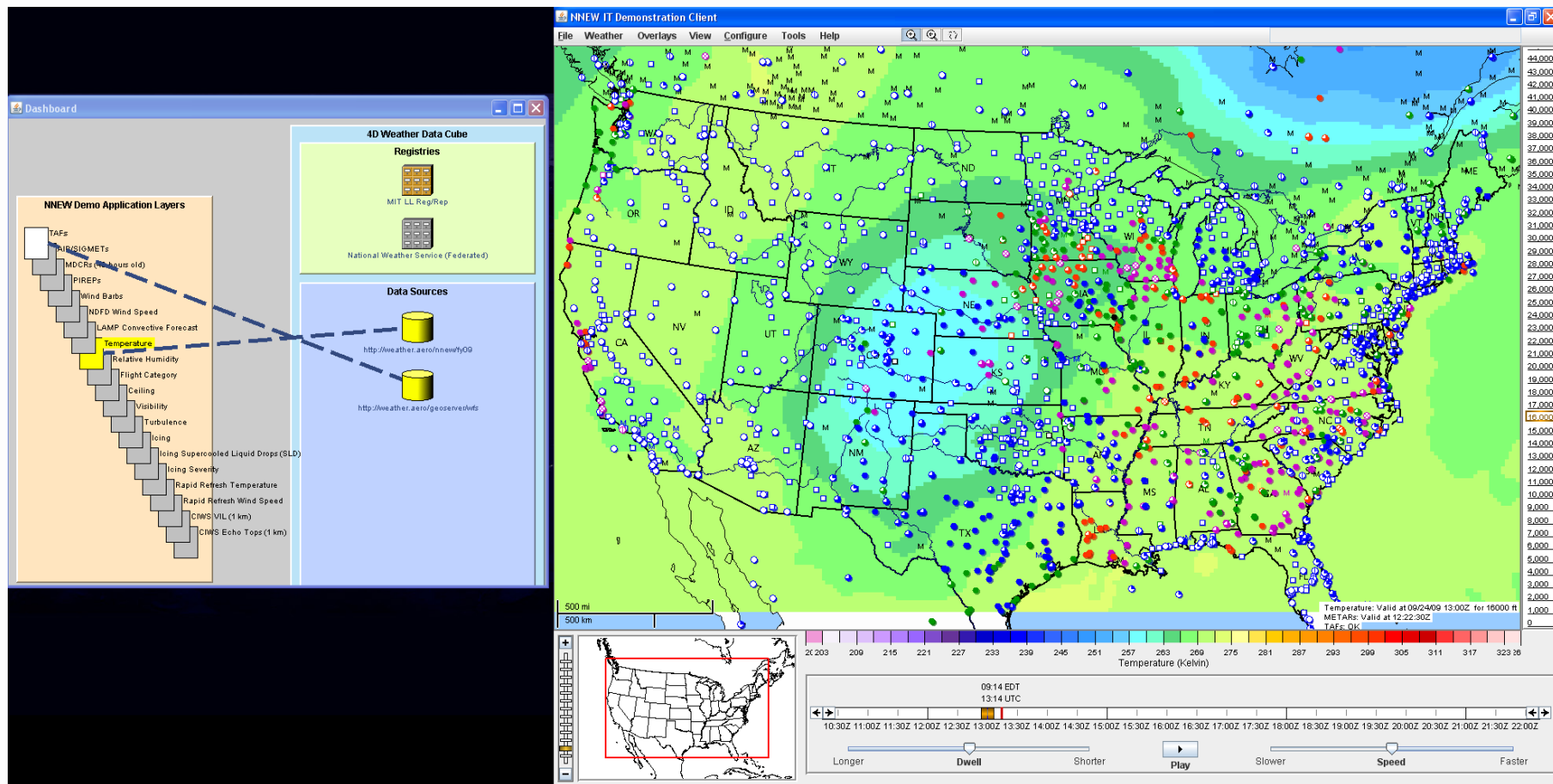


## 2009 NNEW IT Demonstration



# 2009 NNEW IT Demonstration Screen Shot

(<http://weather.aero/nnew/fy09/demo/>)





# Data Access

- NNEW Data Access Information
  - Available at WIKI website
    - <https://wiki.ucar.edu/display/NNEWD/NNEW+FY+2009>
- The website includes information on all of the datasets
  - Each of the datasets and their service endpoints have associated metadata in the registry/repository
    - The NNEW repository implements the coming ebXML 4.0 specification.
    - Location: <http://ngenwww2.wx.ll.mit.edu:8080/wellgeo-ui-swing/4.4/jnlp/wellgeo-ui-swing.jnlp>

# OGC Web Services, Phase 7 (OWS-7) Testbed

- **Develop and demonstrate the use of AIXM and WXXM in an Open Geospatial Consortium Web Services Environment**
  - Scenario will focus on ground usage of information and will also include preparation of data for upload on handheld Electronic Flight Bag devices
- **Increase industry adoption of AIXM and WXXM and support the operational use and validation of the standards**
  - Results of OWS-7 are expected to be contributed to the FAA SWIM program
- **WXXM will also be evaluated to demonstrate new weather concepts such as the 4-D Weather Data Cube**
  - User-oriented evaluation of WXXM to determine its efficiency as a mechanism for distributing information about probabilistic weather events

Open Geospatial Consortium

# NextGen Demonstrations

- NNEW will support NextGen demonstrations
  - Participating in NextGen testbeds
  - Coordinating with appropriate I&I Solution Set Managers
  - Work with other developing NextGen capabilities (e.g., Flight Data Object, CATM)
  - Clear objectives will be established in writing
  - Deliverables will be part of the contractual agreements with industry partners