

# NTIA Spectrum Monitoring

## *NOI and New Project Plan*

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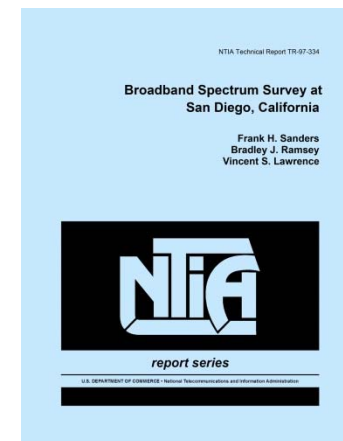
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# *Outline*

- Current ITS spectrum measurement methods
- Budget initiative and Notice of Inquiry
- FY14 plan for NTIA-funded project

# Broadband Surveys

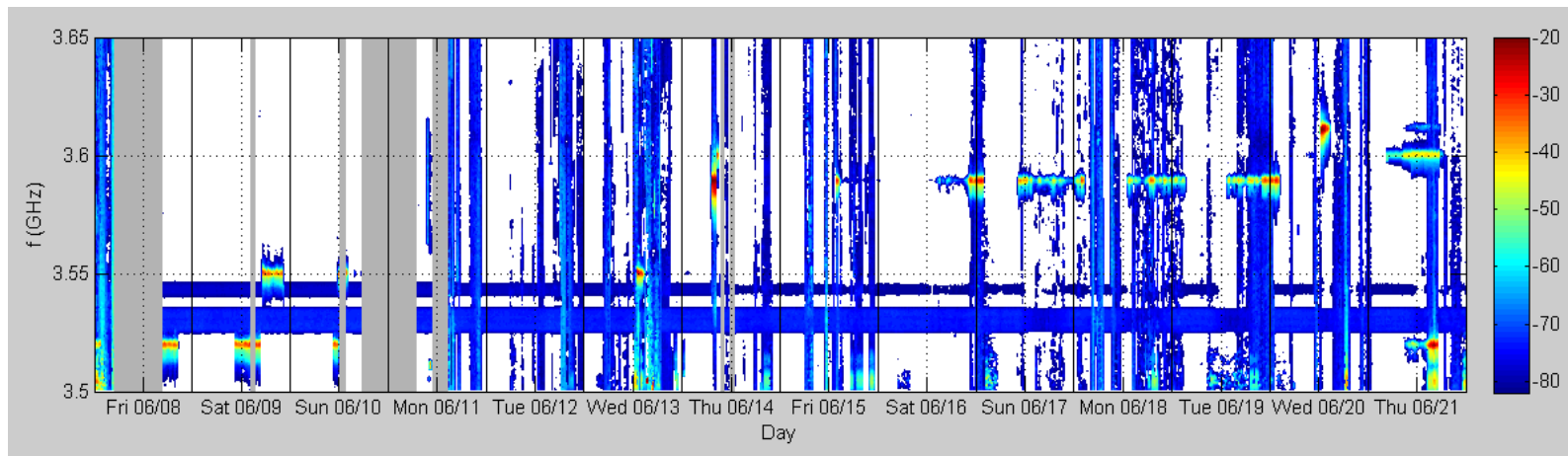
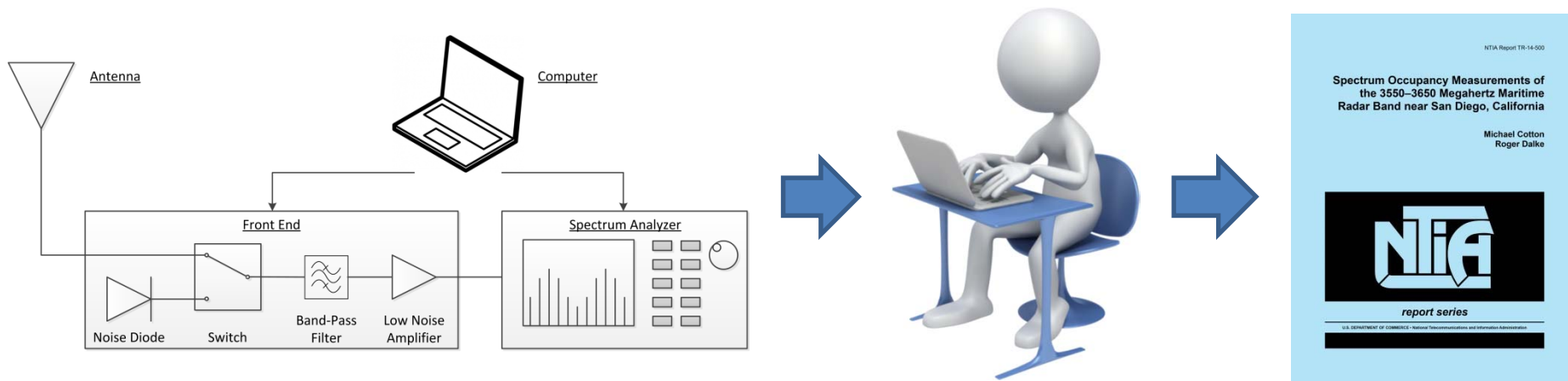


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# Specific Band Occupancy Measurements



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# *Catalysts for Change*

- NTIA Budget Initiative
  - 2 years, \$7.5M
  - NTIA Spectrum Monitoring NOI – Aug 16, 2013
  - Not funded in FY14 – Dec 18, 2013
- NTIA-Funded FY14 Project
  - 1 year, \$1.5M
  - Project Kickoff – March 18, 2014

## *NOI Objectives*

1. To monitor spectrum usage in real time in selected communities throughout the country.
2. To determine the benefits of automated and continuous spectrum measurements to better analyze actual spectrum usage.
3. To evaluate whether a more comprehensive monitoring program would create additional opportunities for more efficient spectrum access through, for example, increased and more dynamic sharing.

# *NOI Collaboration Tasks*

- Consult with Federal agencies to determine technical parameters and sensitivity of data.
- Consult with OSM to prioritize frequency bands, sensor locations, coverage criteria, and monitoring requirements.
- Make available data for spectrum community to investigate feasibility of new spectrum access schemes.
- Enable private sector and spectrum manager deployment of data collection/dissemination systems.
- Make available criteria, requirements, parameters, designs, interfaces, software, data sets and other information in each phase of the project.
- Seek recommendations on whether to continue and expand the program.

## *NOI System Development Tasks*

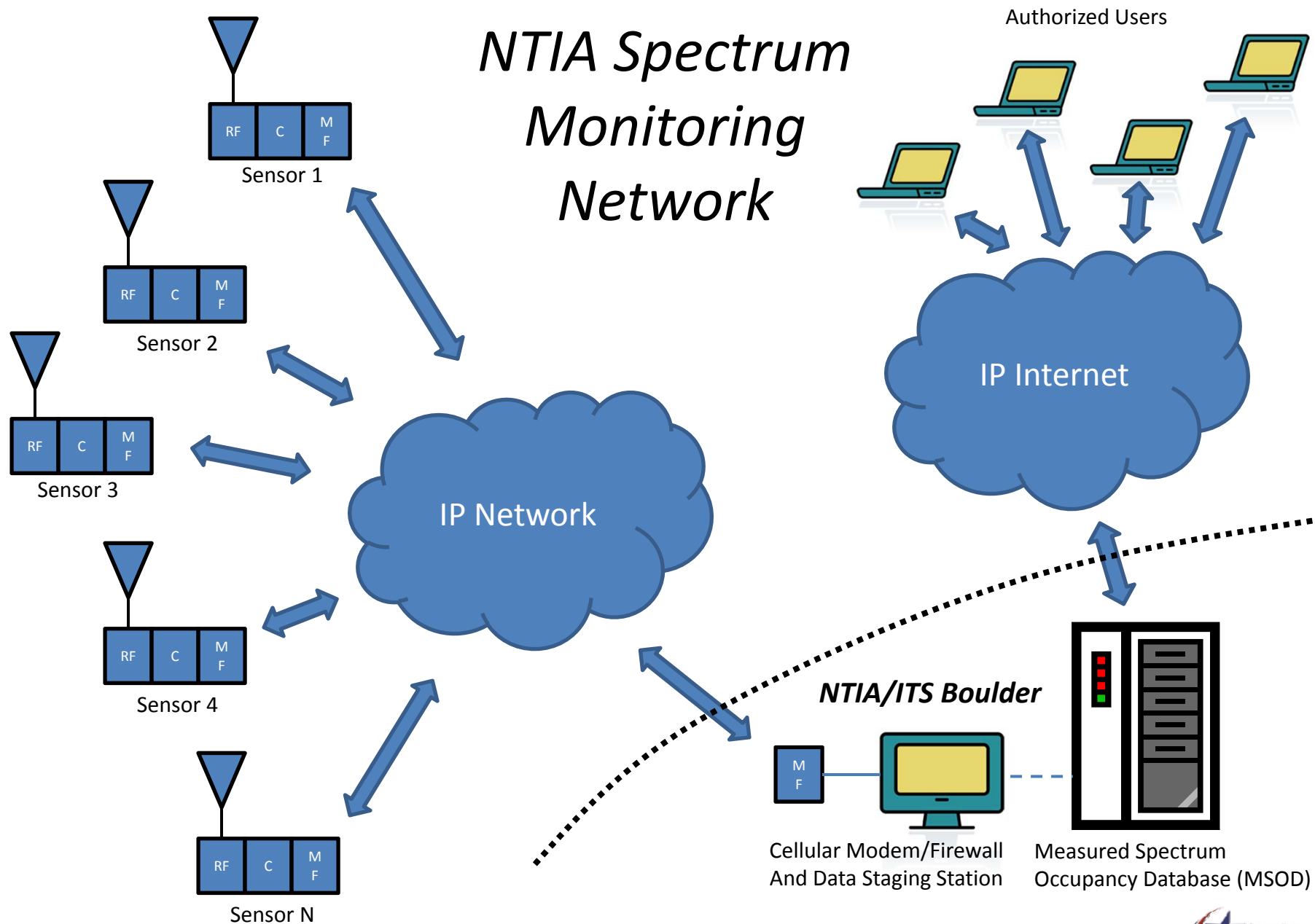
1. Implement a centralized database for storage and analysis of standardized data sets acquired by sensors.
2. Develop prototype sensor to monitor spectrum in particular bands.
3. Establish network of RF sensors (10 or more in up to 10 metropolitan areas) to collect data continuously with system control and data uploads over IP network.



## *FY14 Project Plan*

- Design and implement a Measured Spectrum Occupancy Database (MSOD)
- Assess RF performance and programmability of available mid- and low-grade COTS sensors
- Design prototype radar sensor
- Design prototype LTE sensor
- Demonstrate end-to-end functionality with “near real time” data from remote sensors made available via MSOD over the internet

# NTIA Spectrum Monitoring Network



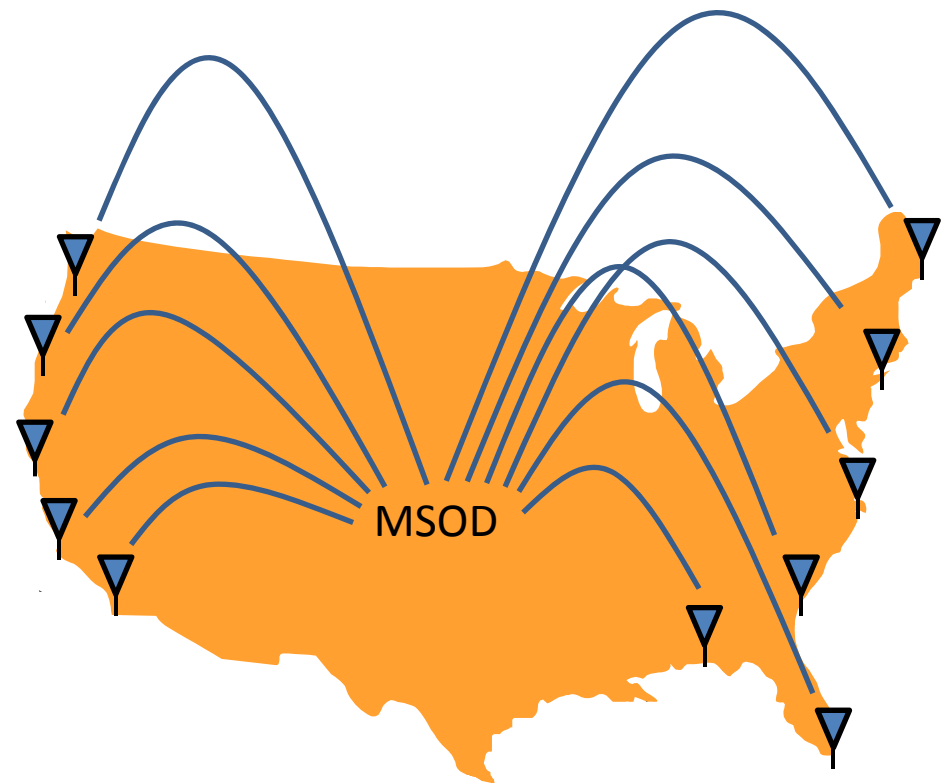
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# *Initial Thoughts for FY15*

- Deploy 10 x 3.6 GHz sensors at coastlines of U.S. littoral waters
  - another idea posed –
- Set up a monitoring network for the spectrum test city



# *Contact Information and References*

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303-497-7346

- 1) [Comments on Spectrum Monitoring Pilot Program](#)
- 2) Cotton and Dalke, “[Spectrum Occupancy Measurements of the 3550-3650 MHz Maritime Radar Band Near San Diego,](#)” NTIA Report TR-14-500, Jan 2014.
- 3) Sanders, Ramsey, and Lawrence, “[Broadband Spectrum Survey at San Diego, CA,](#)” NTIA Report TR-97-334, Dec 1996.

