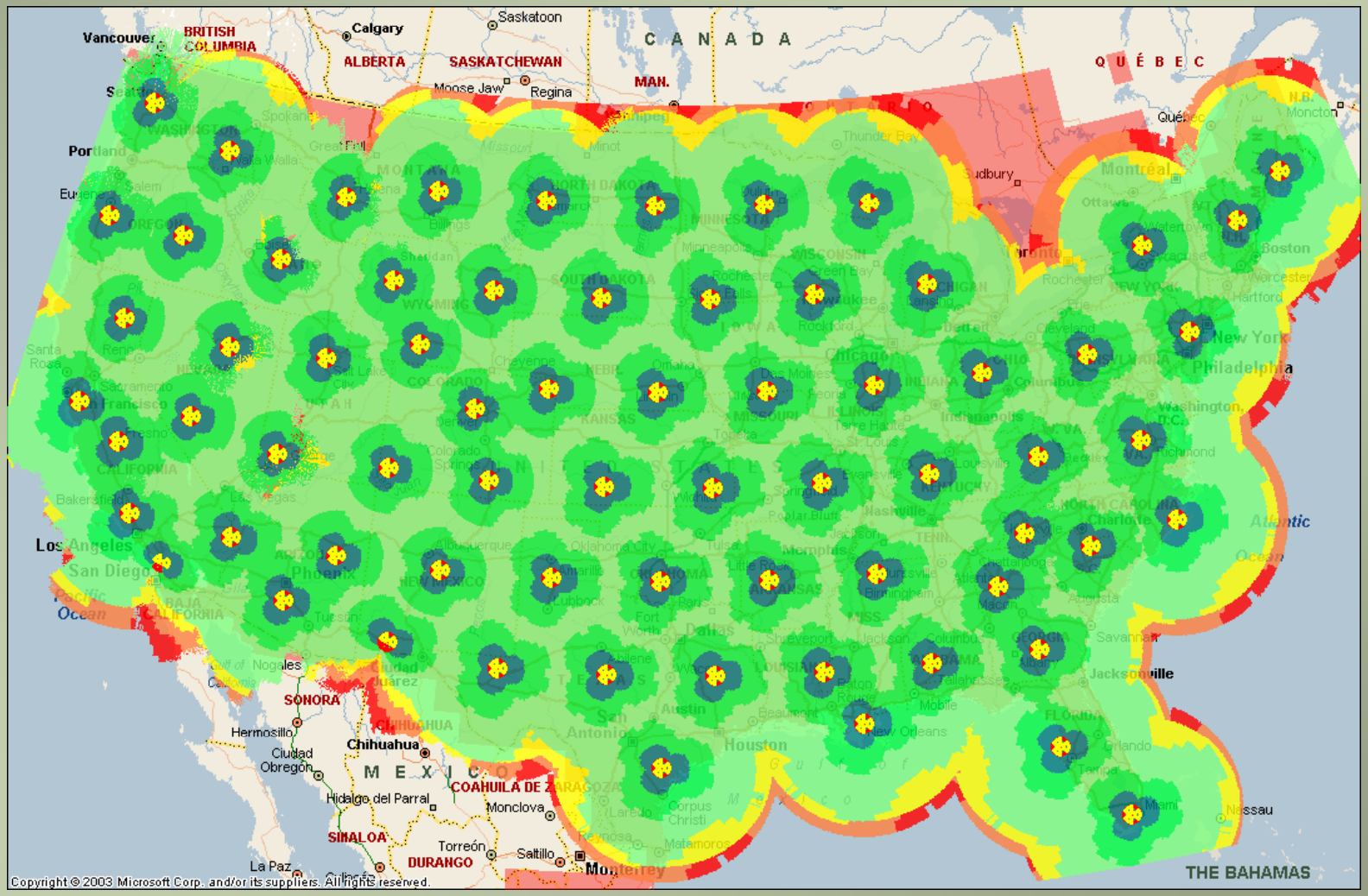
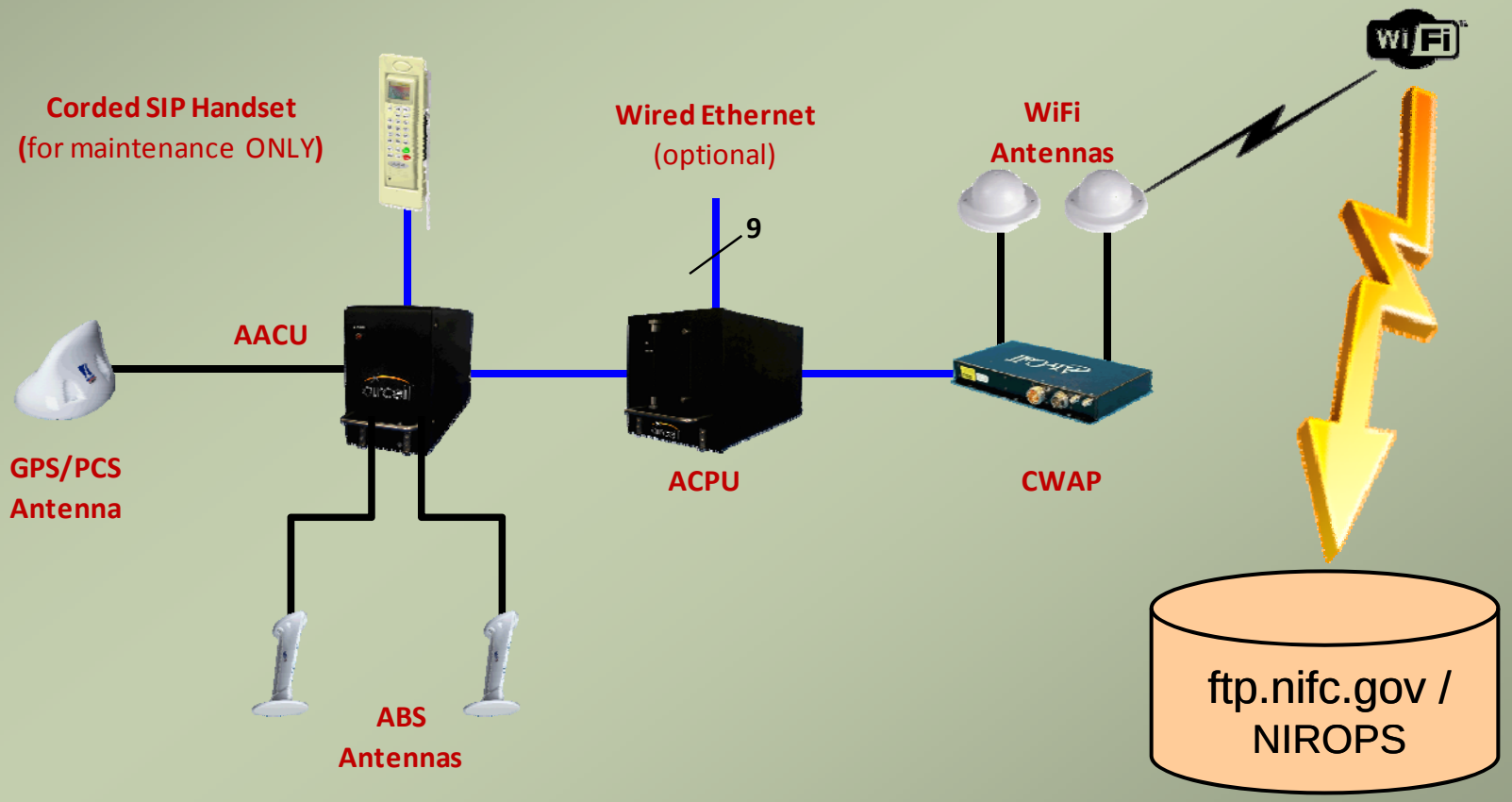
NATIONAL INFRARED OPERATIONS

AirCell Data Downlink

Coverage - 2008 (3 sector)



AIRCELL Equipment



PEAK DATA RATES

- 3.1 Mega bits per second (Mbps) from the ground to the aircraft

  uninterrupted coast to coast and border to border.

- 1.8 Mega bits per second (Mbps) from the aircraft to the ground

  giving an experience similar to a DSL connection at home or small office.

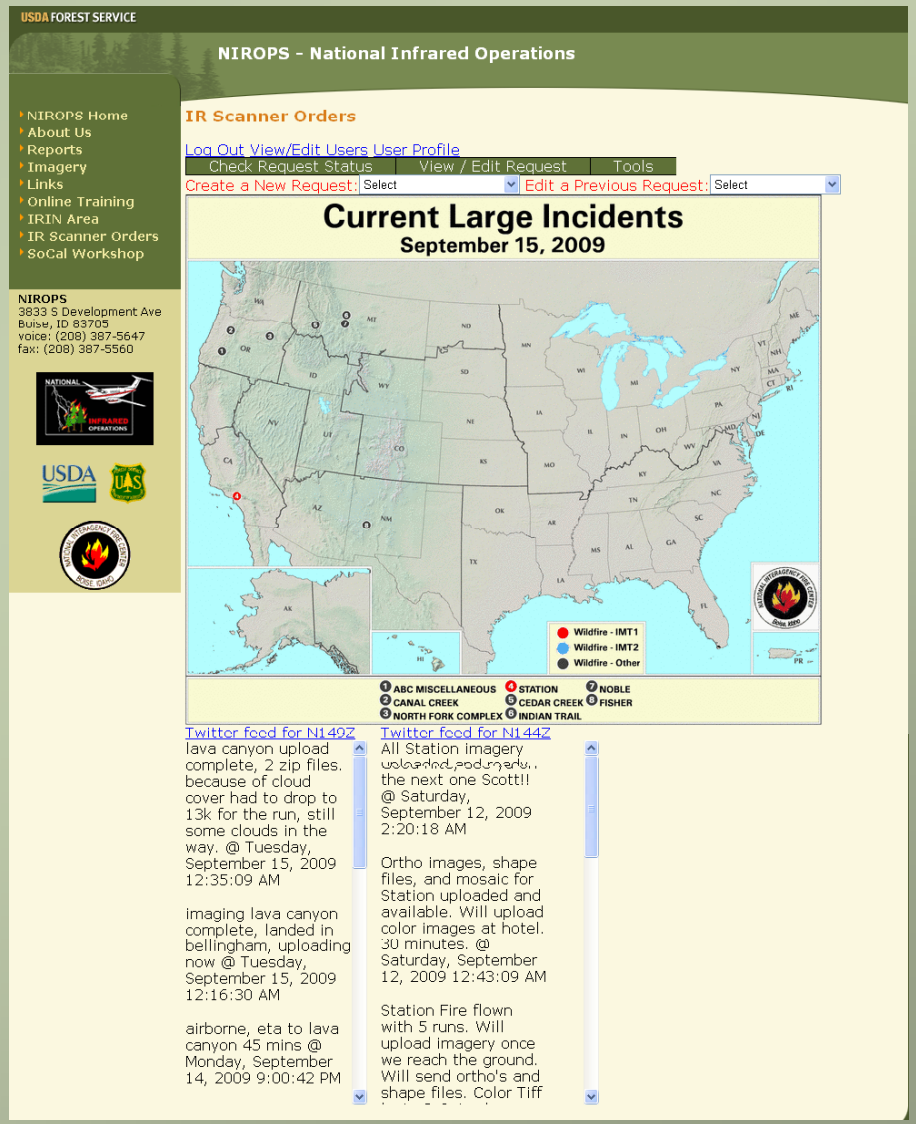
AirCell demonstration June 2008, 29.1 Mb file downloaded to the NIFC FTP site in 17 minutes with 6 other users over aircraft's WI-FI network

Getting Started

- Spring 2009
  - Two AirCell Units purchased and installed in Region 4 IR aircraft
    - Initial install in 144Z, then 149Z
  - Issues with funds and contracting slowed purchase of the units
- Summer 2009
  - First use of AirCell system for delivering Phoenix data to ftp.nifc.gov/NIROPS
  - Initial results were promising, but there were issues…

Getting Started

- Late Summer 2009
  - Phoenix software modification for automated WinZip archive generation
  - Twitter accounts and feeds from both aircraft



Teething Problems

- Dropped connections with ftp site
  - Could not reconnect due to port on ftp site staying open
- Data transfer rate from aircraft to ground not as fast as expected
  - AirCell “throttle back”
    - The longer a user is connected, the slower the data transfer rate
    - Policy decision by AirCell
      - AirCell did not anticipate having users like NIROPS in their business plan
- No coverage in Canada

Addressing the Problems

- Dropped connections with ftp site
  - Using different ftp software on aircraft
  - Discussing issue with ftp,nifc.gov site administrators
- “Throttle back”
  - AirCell has requested that the two Region 4 IR aircraft have full bandwidth access, regardless of connection time.
- Canada
  - AirCell negotiating for cell towers

Addressing the Problems con't

- Imagery File Size
  - Dave Chamberlain is working on a software modification to "chop" the Phoenix imagery into more logical blocks of data for easier transfer.

Questions?
Station Fire, Aug. 30, 2009
MISR Image
NASA