

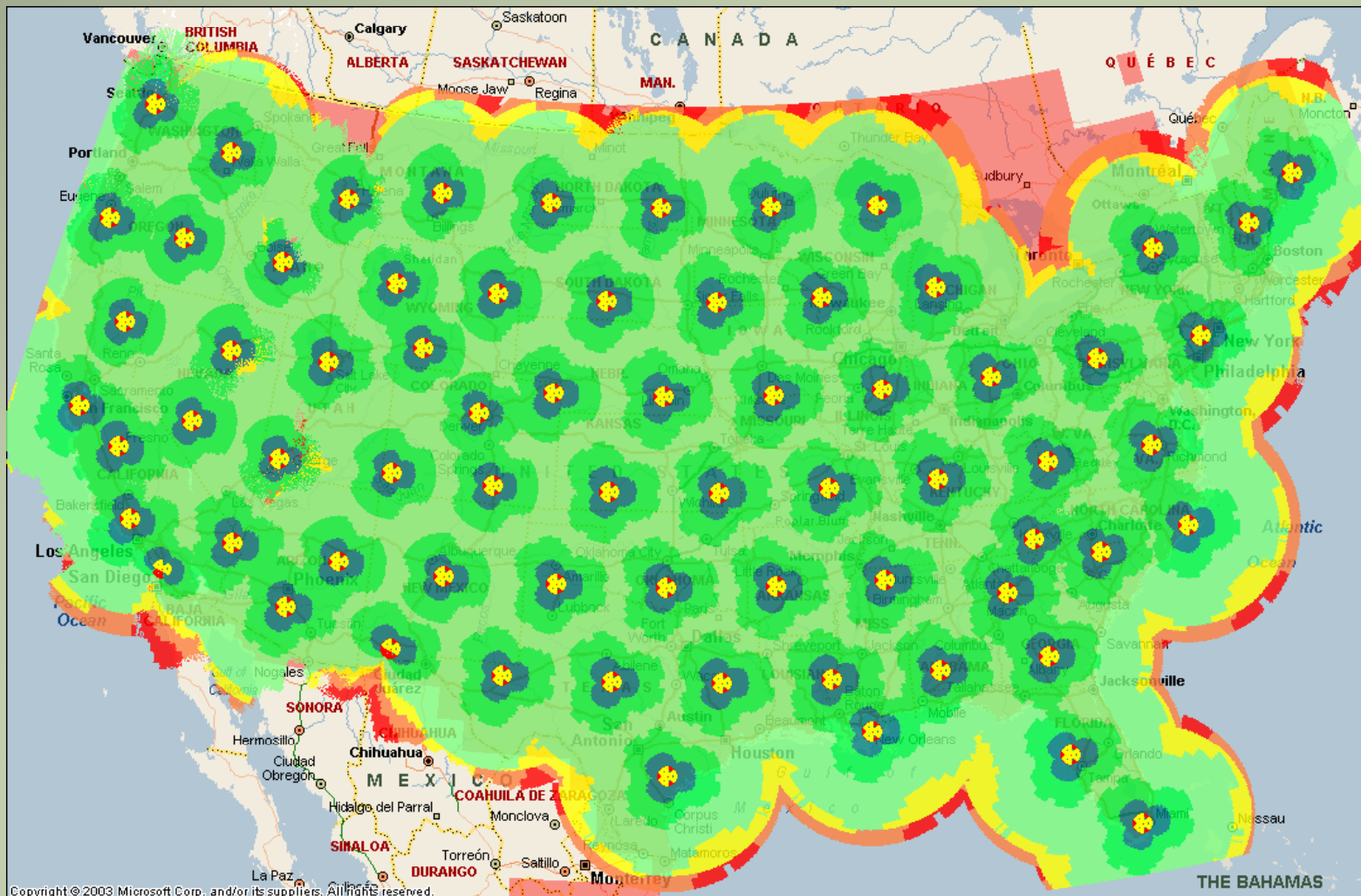


AirCell Data Downlink

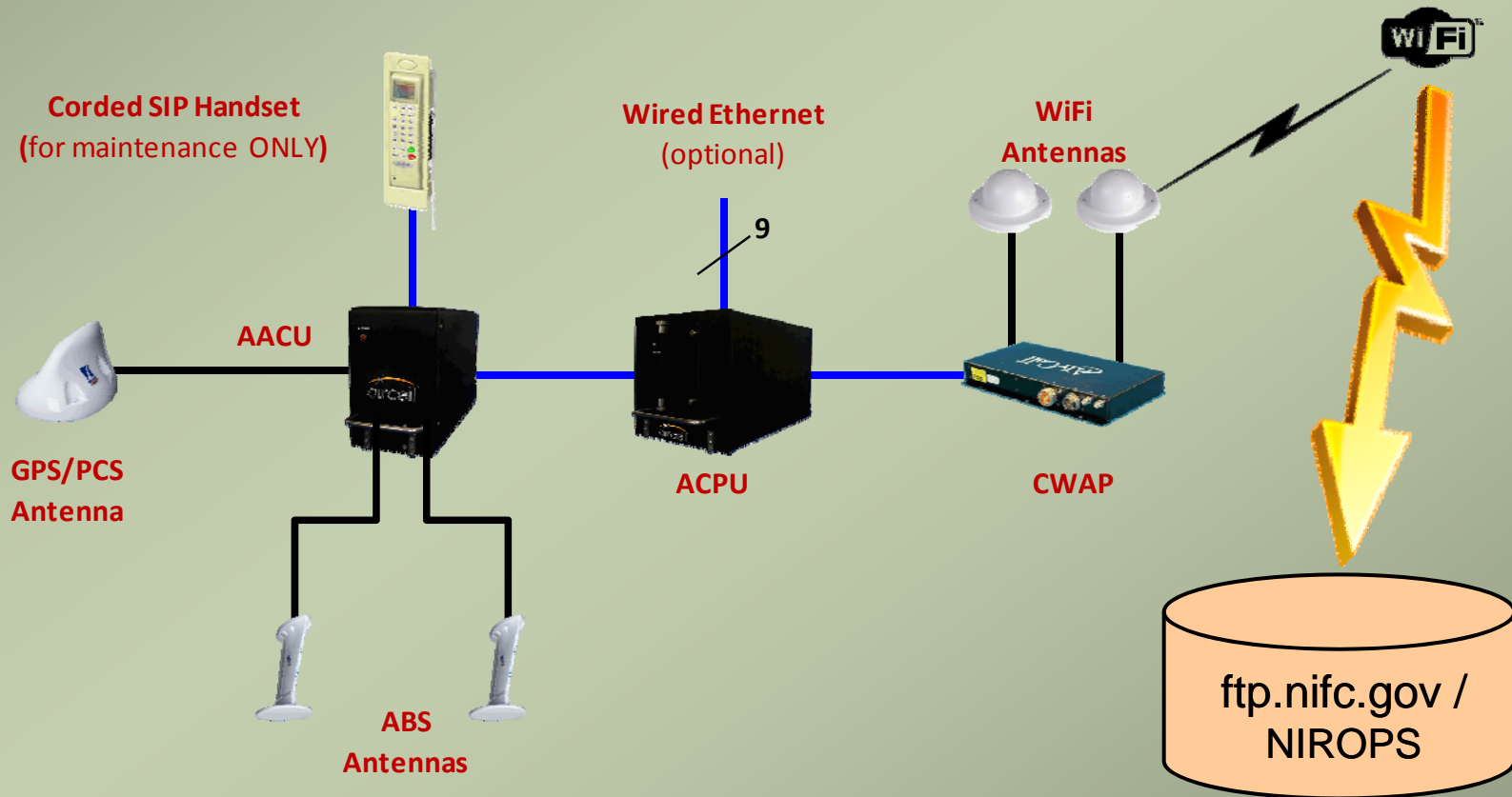
NATIONAL INFRARED OPERATIONS



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

USDA FOREST SERVICE

NIROPS - National Infrared Operations

- NIROPS Home
- About Us
- Reports
- Imagery
- Links
- Online Training
- IRIN Area
- IR Scanner Orders
- SoGal Workshop

NIROPS
3833 S Development Ave
Burse, ID 83705
voice: (208) 387-5647
fax: (208) 387-5560

IR Scanner Orders

[Log Out](#) [View/Edit Users](#) [User Profile](#)

[Check Request Status](#) [View / Edit Request](#) [Tools](#)

Create a New Request: Edit a Previous Request:

Current Large Incidents

September 15, 2009

● Wildfire - IMT1
● Wildfire - IMT2
● Wildfire - Other

ABC MISCELLANEOUS STATION NOBLE
CANAL CREEK CEDAR CREEK FISHER
NORTH FORK COMPLEX INDIAN TRAIL

Twitter feed for NI492

lava canyon upload complete, 2 zip files. because of cloud cover had to drop to 13k for the run, still some clouds in the way. @ Tuesday, September 15, 2009 12:35:09 AM

imaging lava canyon complete, landed in bellingham, uploading now @ Tuesday, September 15, 2009 12:16:30 AM

airborne, eta to lava canyon 45 mins @ Monday, September 14, 2009 9:00:42 PM

Twitter feed for NI442

All Station imagery uploaded, ready for the next one Scott!! @ Saturday, September 12, 2009 2:20:18 AM

Ortho images, shape files, and mosaic for Station uploaded and available. Will upload color images at hotel. 30 minutes. @ Saturday, September 12, 2009 12:43:09 AM

Station Fire flown with 5 runs. Will upload imagery once we reach the ground. Will send ortho's and shape_files. Color Tiff



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.

An aerial satellite image showing a large fire with a thick, greyish-white smoke plume rising from the center. The surrounding terrain is brown and appears to be a dry, open landscape. In the bottom left corner, there is a dark blue area representing a body of water. The word "Questions?" is written in red, sans-serif font across the middle of the image.

Questions?

Station Fire, Aug. 30, 2009
MISR Image
NASA