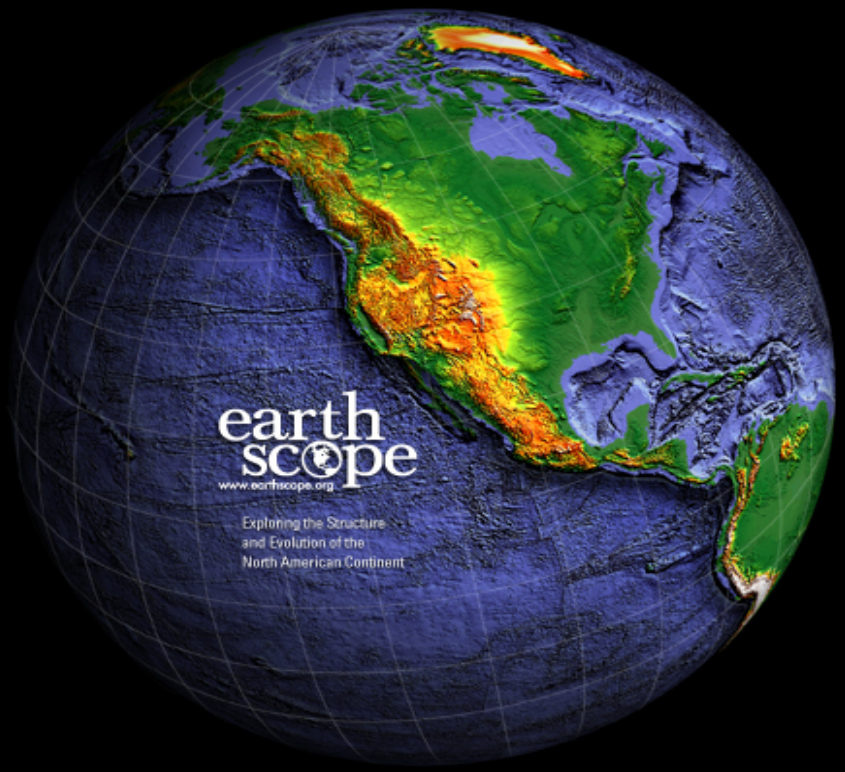
New Technology – Inmarsat BGAN

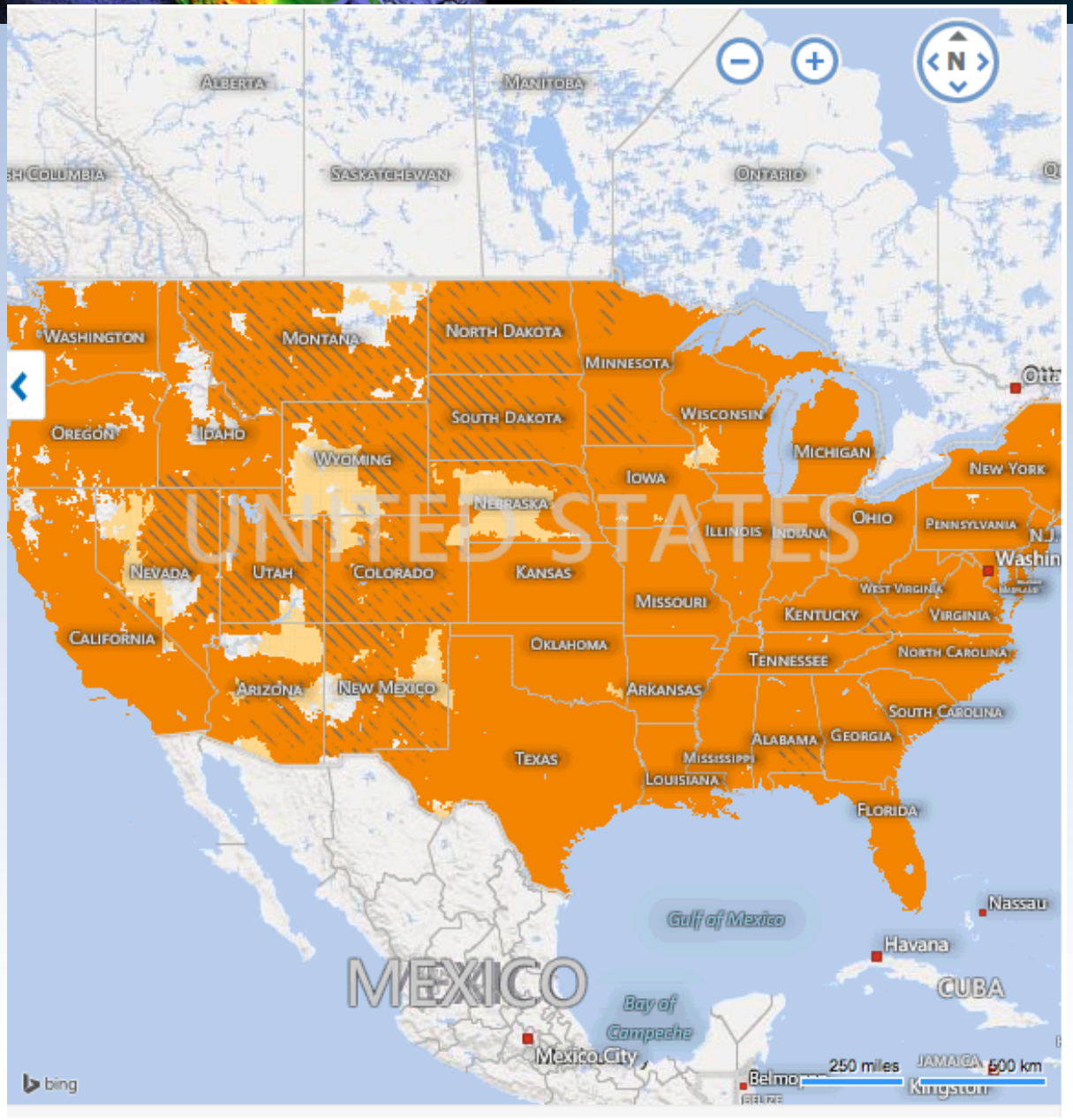


Max Enders

2015-04-27

Albuquerque, New Mexico

Why Use BGAN?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MANITOBA
SASKATCHEWAN
ONTARIO
WASHINGTON
MONTANA
NORTH DAKOTA
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WISCONSIN
MICHIGAN
WYOMING
IOWA
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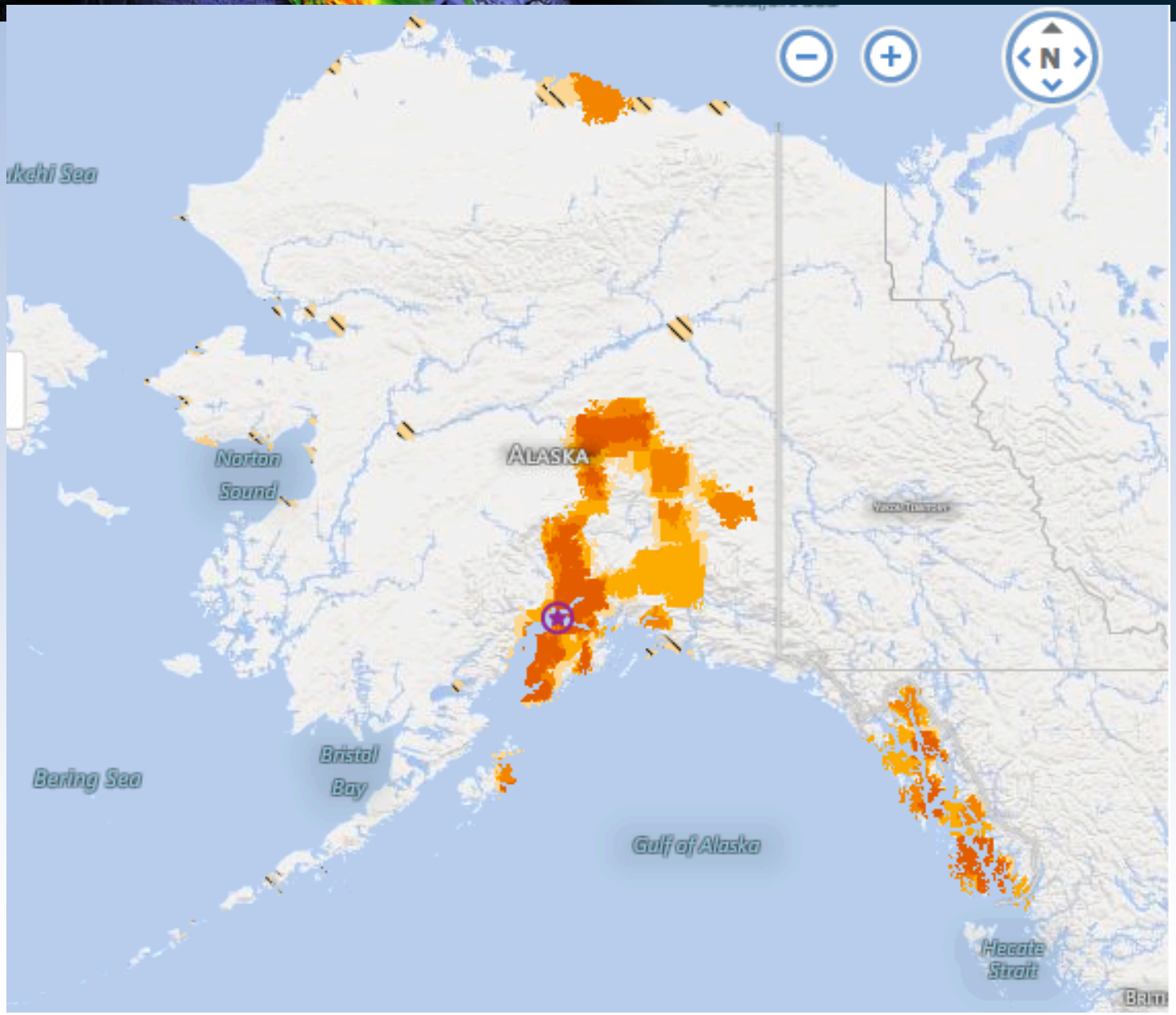
VIRGINIA
CALIFORNIA
OKLAHOMA
TENNESSEE
NORTH CAROLINA
ARIZONA
NEW MEXICO
ARKANSAS
SOUTH CAROLINA
ALABAMA
GEORGIA
TEXAS
MISSISSIPPI
LOUISIANA
FLORIDA
Gulf of Mexico
Nassau
Havana
CUBA
MEXICO
Bay of Campeche
Mexico City
JAMAICA
Kingston
250 miles
500 km
bing

Why Use BGAN?


Norton Sound
ALASKA
Bristol Bay
Bering Sea
Gulf of Alaska
Hecate Strait
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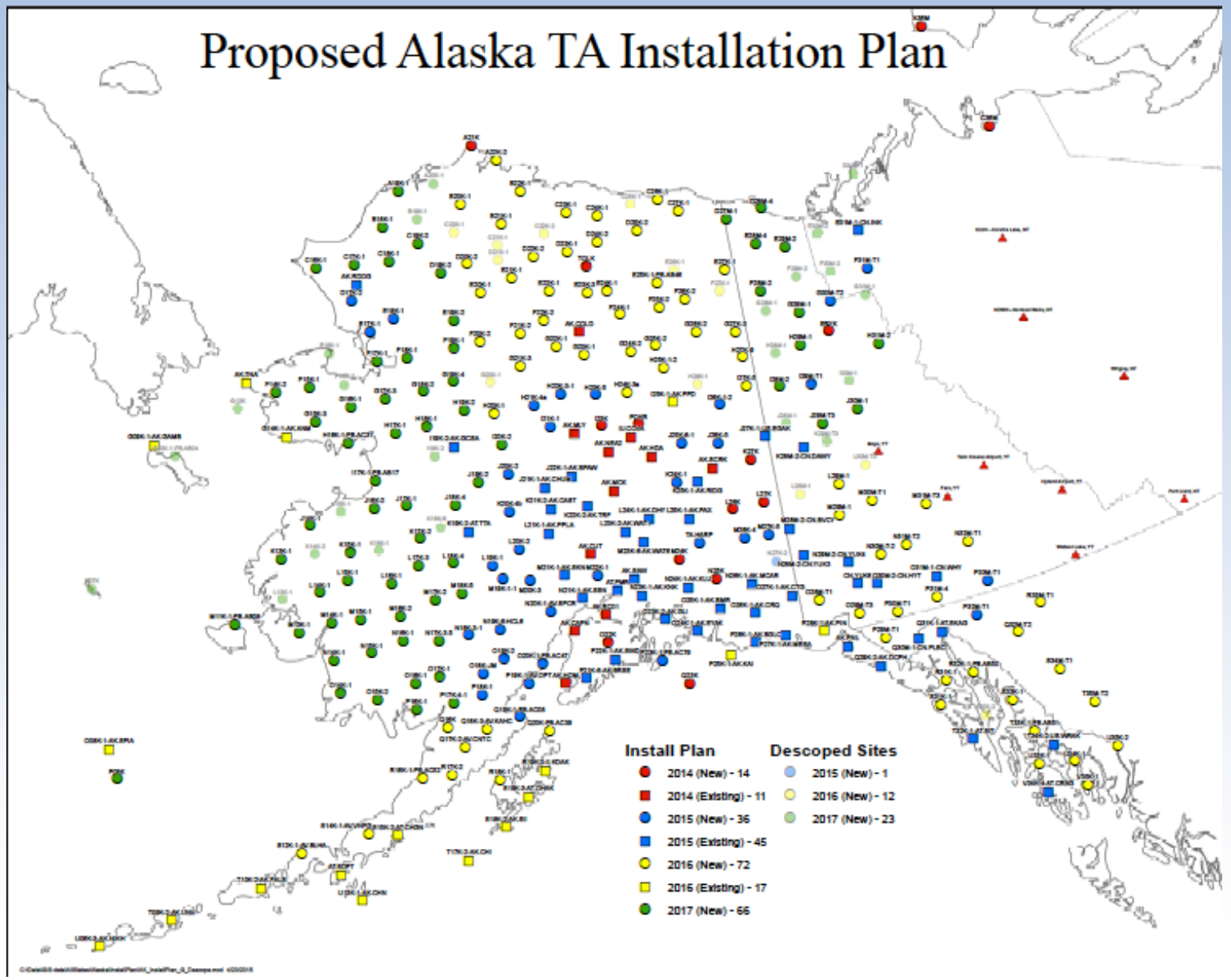
Why use BGAN?



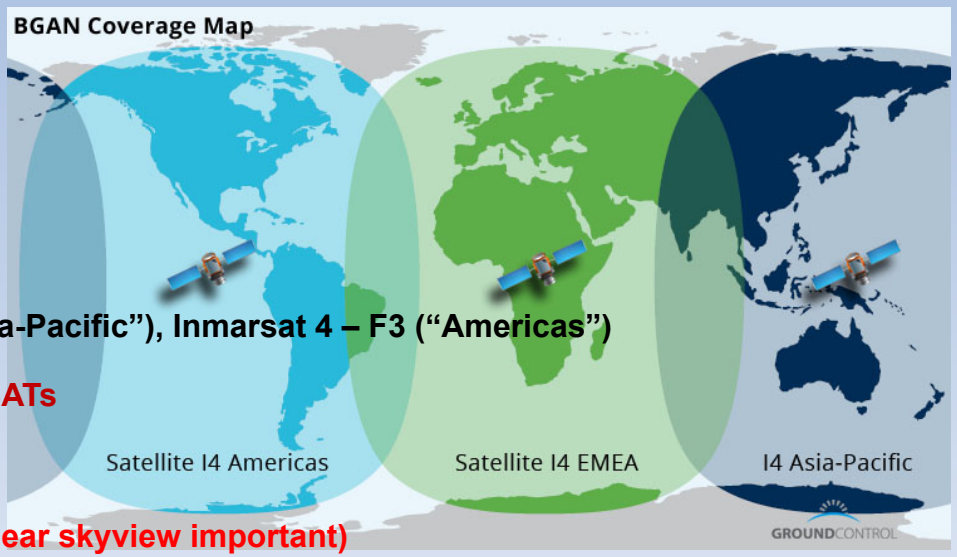
TA Built Stations

FY14	14
FY15	36 (48)
FY16	72
FY17	66

Total 206

Existing 73

What is BGAN



BGAN = Broadband Global Area Network

High speed IP data --- Data rates up to 492 kbps

2 satellites visible from Alaska - Inmarsat 4 - F1 (“Asia-Pacific”), Inmarsat 4 – F3 (“Americas”)

L-band 1.5 to 1.6 GHz, so less rain fade than most VSATs

(GPS L1 is at 1.57542 GHz)

Easy to set up, does not require very fine pointing (clear skyview important)

Antenna has small cross-sectional area (<.5m), less vulnerable in high wind than

A number of terminals are available, ATA is using Hughes 9502

Draws about 18W-20W while transmitting, similar to a VSAT (only while in “burst mode”)

10mW to 18W in normal operation (Wake on LAN)

Avg. ≈2.5W-3.0W

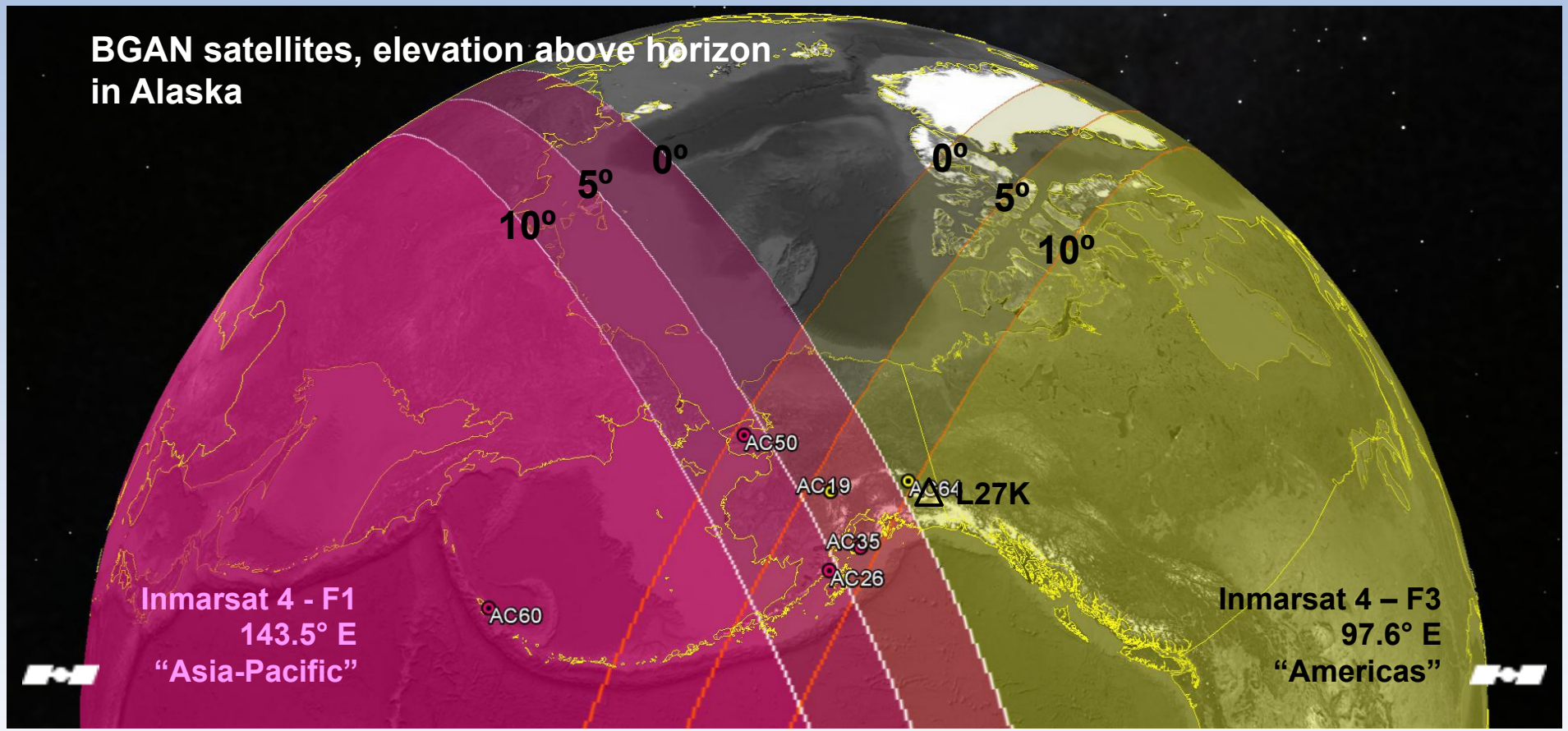
Multiple ISPs provide data/voice plans for BGAN service

Typical data rates start at $5.00 - $6.45 per MB (negotiate)

Static IP and VPN options are available (ATA using VPN)

Hughes 9502 IDU

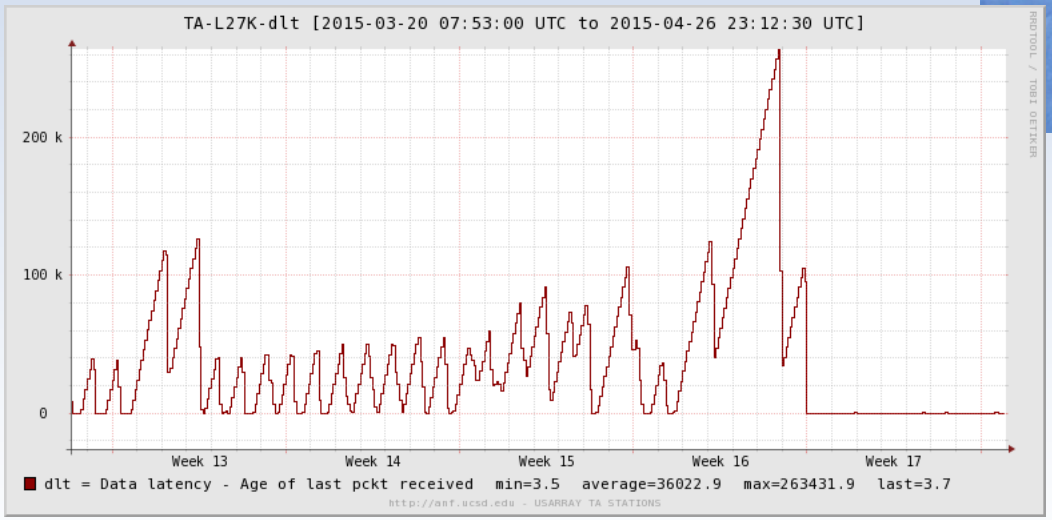
BGAN Coverage



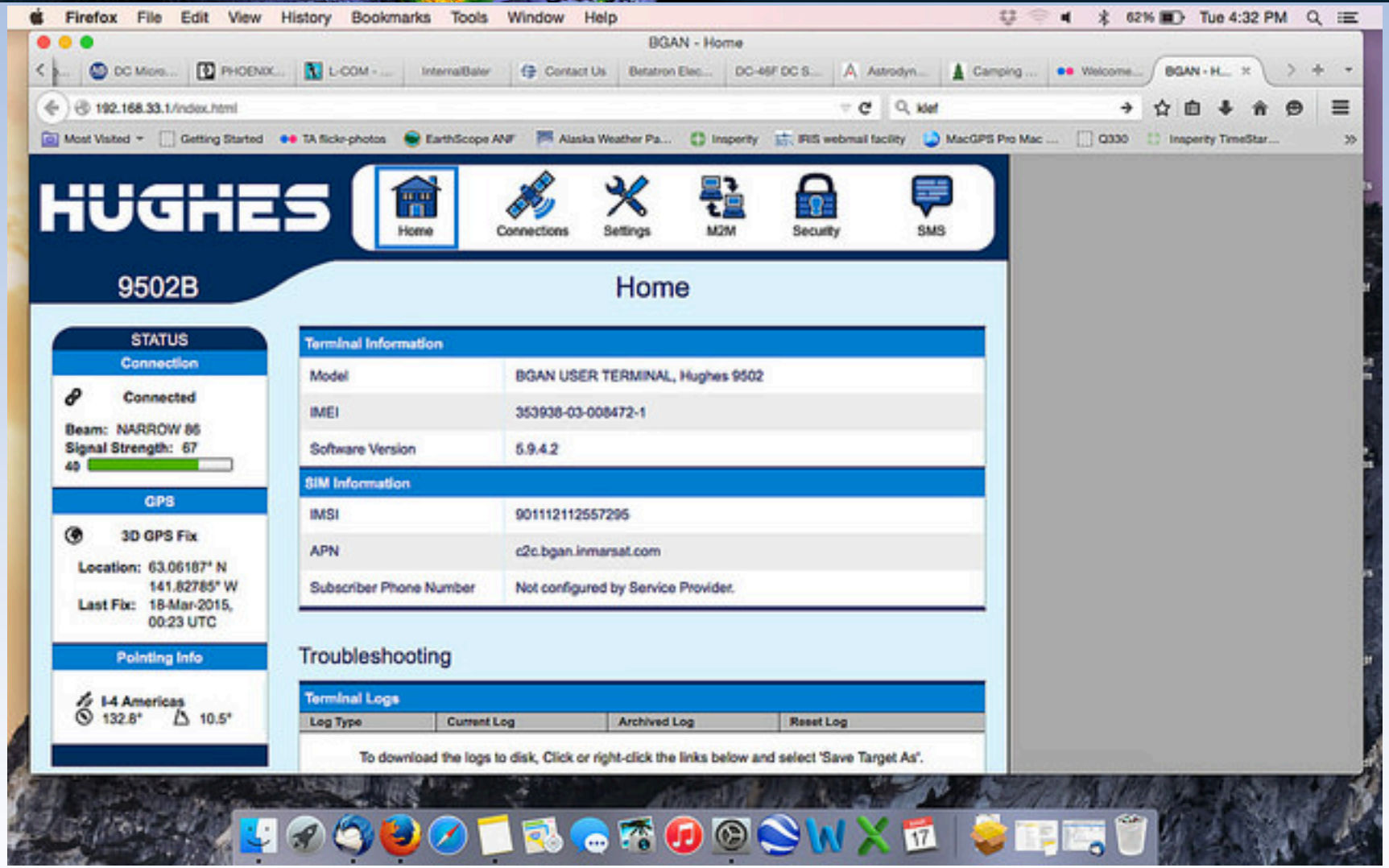
L27K Beaver Creek

L27K Beaver Creek

- Hughes 9502 installed 3/19/2015.
- Immediately had problems.
  - Only connected for 12hrs.
  - Extreme high latencies.
  - Unable to complete data downloads.
- Hardware or config was initially suspect.



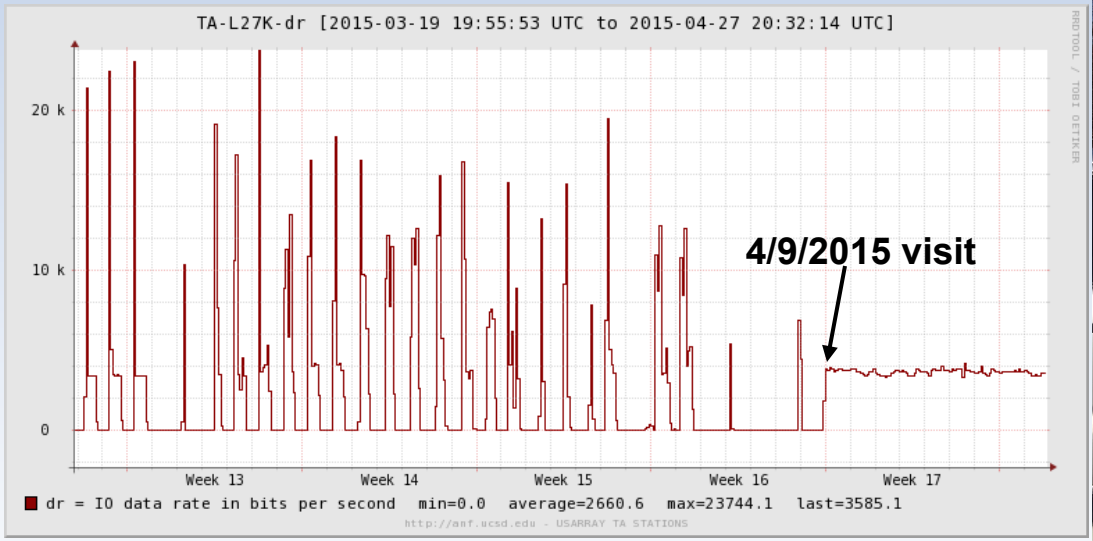
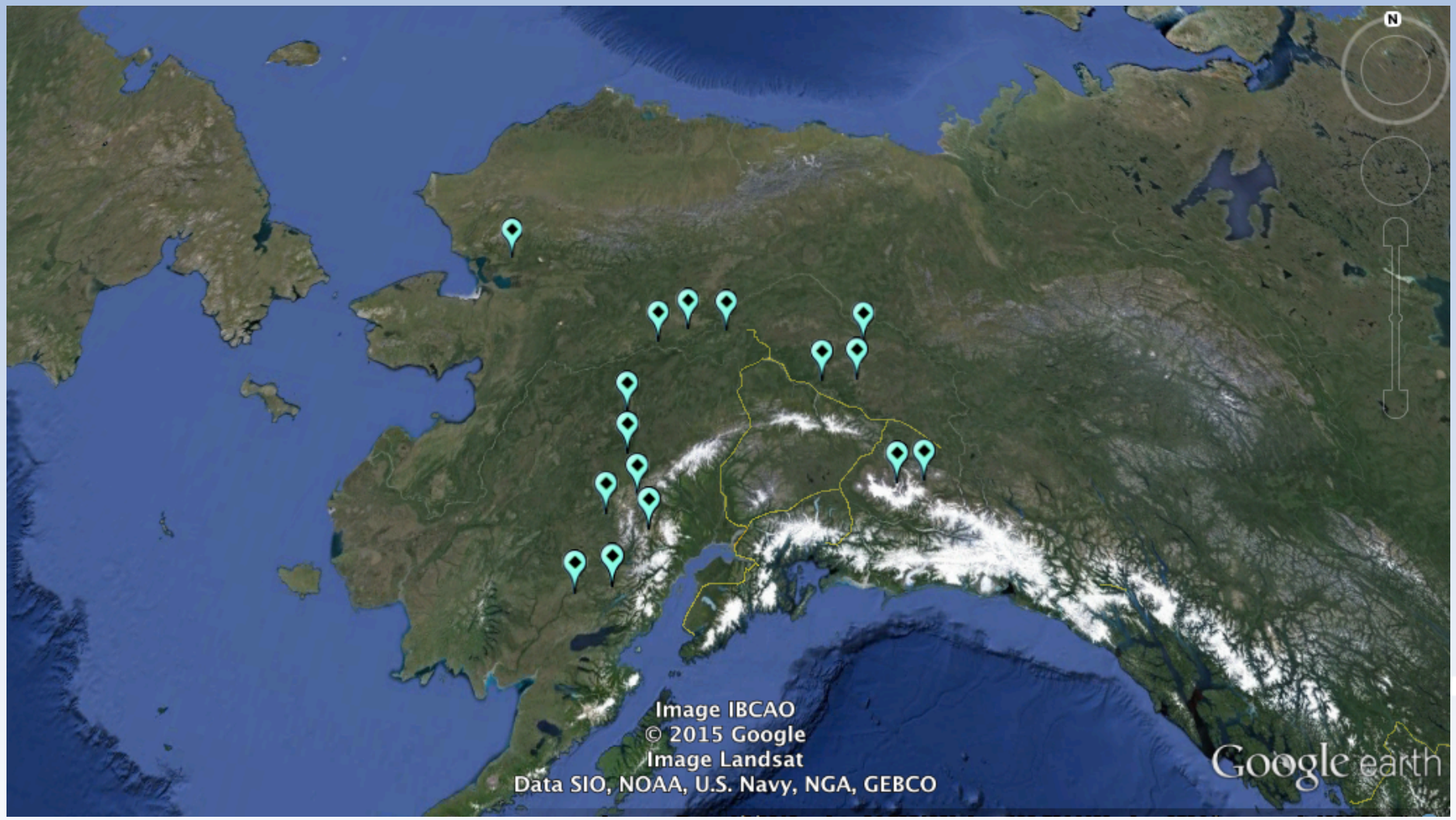
L27K Beaver Creek – How important is skyview?



L27K Beaver Creek – How important is skyview?

L27K Beaver Creek

- Site visit made on 4/9/2015.
  - Discovered no hardware/config issue.
  - Foliage was obstructing skyview.
  - Removed foliage and re-aimed antenna.
- Immediate improvement in latency and uptime.
- No data gaps since maintenance visit.



BGAN Deployments 2015