Charting ADS-B GBT Locations on Sectional Charts

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- ADS-B is the NEXTGEN Surveillance System
- Dual Frequency System
 - 1090 MHz (1090ES) required above 18000 MSL
 - Primary users Airlines
 - 978 MHz (UAT) Primary users GA Piston
- Both frequencies offer traffic services (TISB/ADSR)
- Only UAT offers weather data services (FISB)

The ADS-B services are provided by the Ground Based Transceiver (GBT)

There will eventually be close to 800 GBTs located in the NAS by 2014.

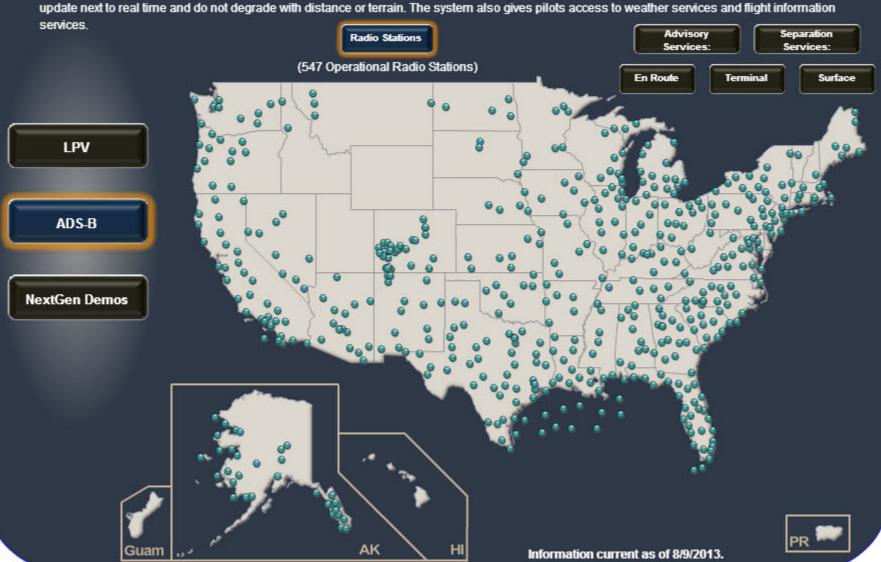
Airlines use TCAS and their own weather services so ADS-B applications will be a harder sell

General Aviation are attracted to ADS-B GBT services to provide weather and traffic in the cockpit.

NextGen Technologies in the NAS

Automatic Dependent Surveillance-Broadcast

Automatic Dependent Surveillance—Broadcast (ADS-B) is a key NextGen technology. ADS-B uses GPS signals along with aircraft avionics to transmit the aircraft's location to ground receivers (radio stations). The ground receivers then transmit that information to controller screens and cockpit displays on aircraft equipped with ADS-B avionics. With ADS-B, both pilots and controllers can see radar-like displays of traffic; the displays update next to real time and do not degrade with distance or terrain. The system also gives pilots access to weather services and flight information services



A.2.2 UAT coverage

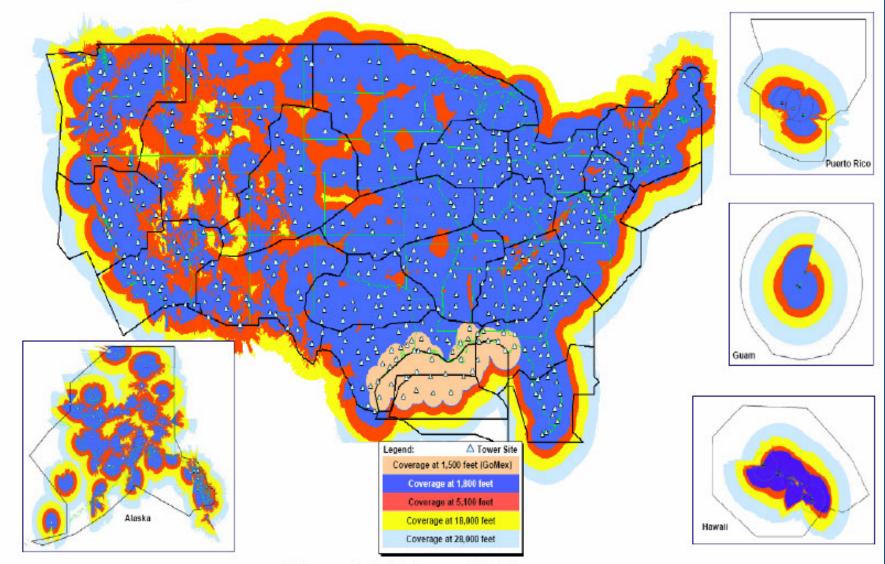
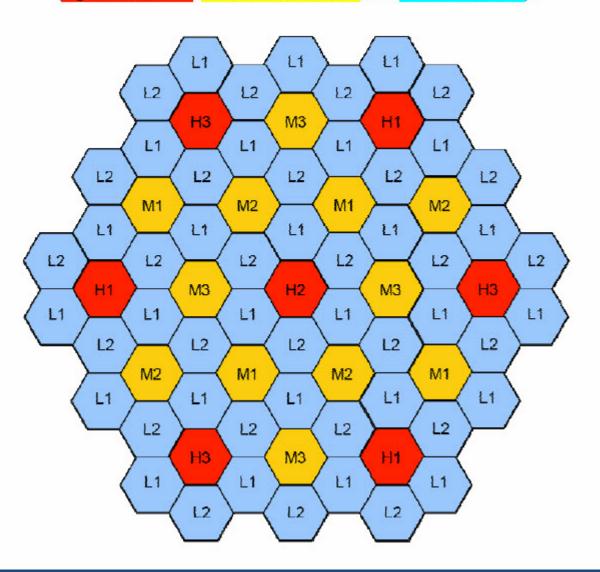


Figure A-4: End-state UAT coverage

(high altitude cells, medium altitude cells, and low altitude cells).



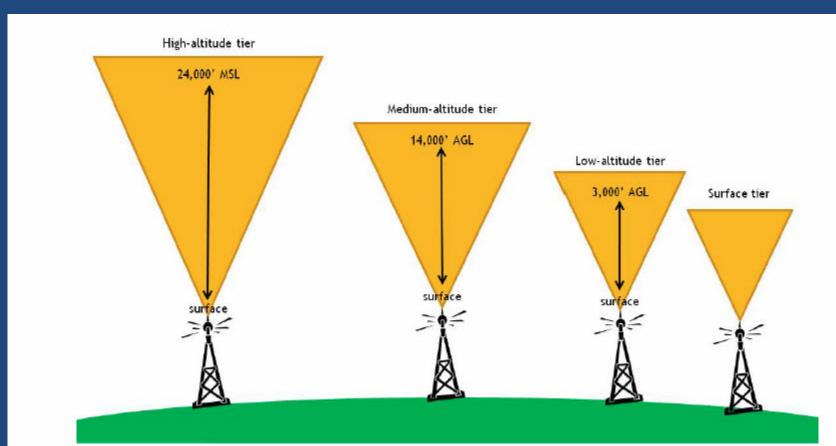


Figure C-2: Vertical profile of altitude coverage of tiered radios

Table C-4: Product Parameters for Low/Medium/High Altitude Tier Radios

	Product Look-ahead range for each tier of radio			
Product	Low-altitude tier	Medium- altitude tier	High-altitude tier	
CONUS NEXRAD	CONUS NEXRAD not provided	entire CONUS NEXRAD imagery		
Winds & Temps Aloft	500 NM look- ahead range	750 NM look- ahead range	1,000 NM look-ahead range	
METAR	250 NM look-ahead range	375 NM look- ahead range	CONUS:	All 158 CONUS Class B & C airport METARs
			Outside of CONUS:	500 NM look-ahead range
TAF			CONUS:	All 157 CONUS Class B & C airport TAFs
			Outside of CONUS:	500 NM look-ahead range
AIRMET, SIGMET, PIREP, and SUA	250 NM look-ahead range	375 NM look- ahead range	500 NM look-ahead range	
Regional NEXRAD	150 NM look-ahead range	200 NM look- ahead range	250 NM look-ahead range	
NOTAM	100 NM look-ahead range			

Table C-5: Product Parameters for Surface Radios

Product	Product Look-ahead range for Surface radios	
CONUS NEXRAD	N/A	
Winds & Temps Aloft	500 NM look-ahead range	
METAR, TAF, AIRMET, SIGMET, NOTAM	100 NM look-ahead range	
PIREP & SUA	N/A	
Regional NEXRAD	150 NM look-ahead range	

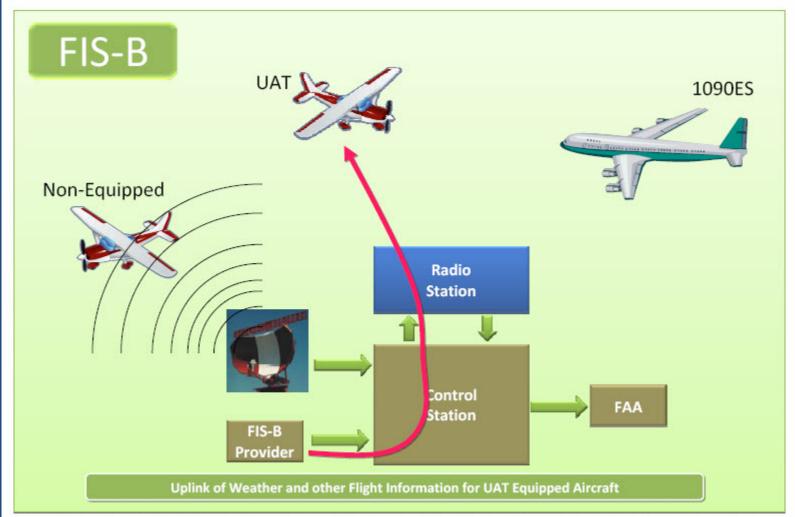


Figure 1-5: FIS-B Service Data Flows

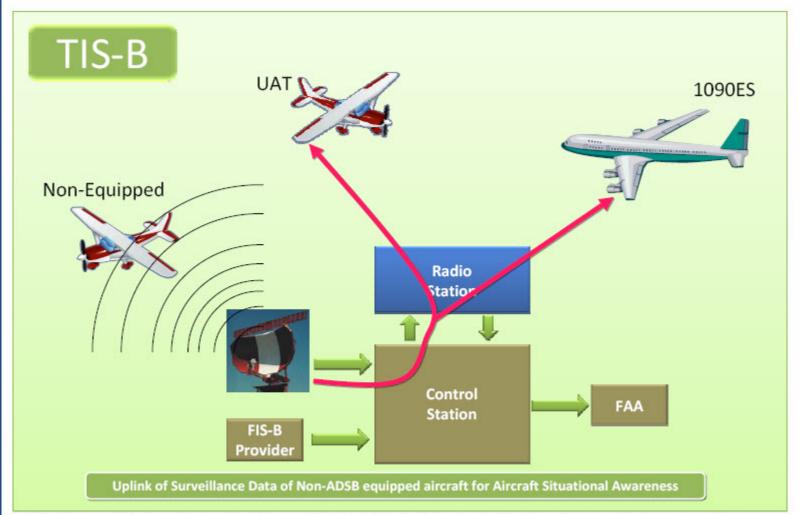
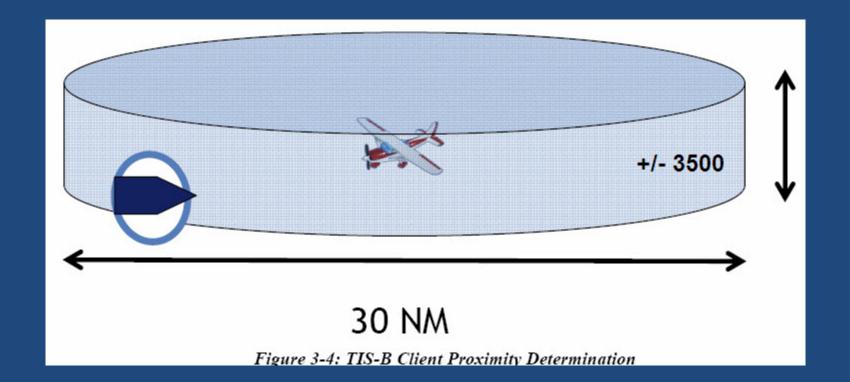


Figure 1-4: TIS-B Service Data Flows



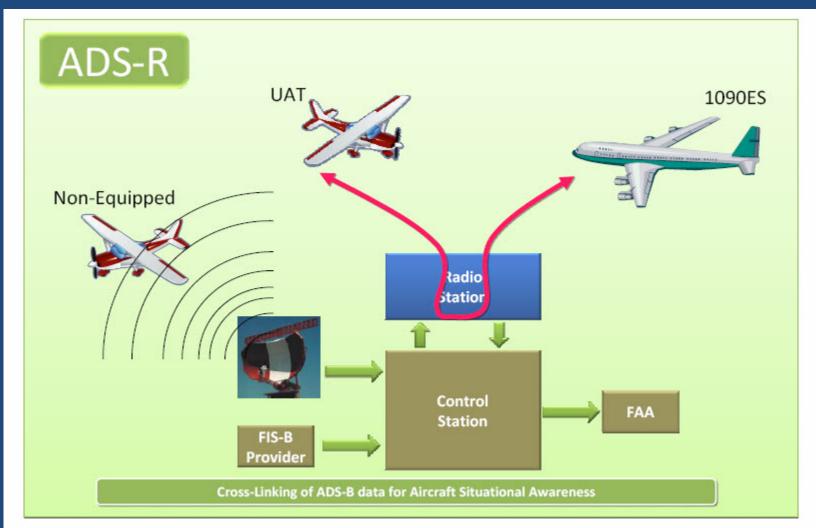
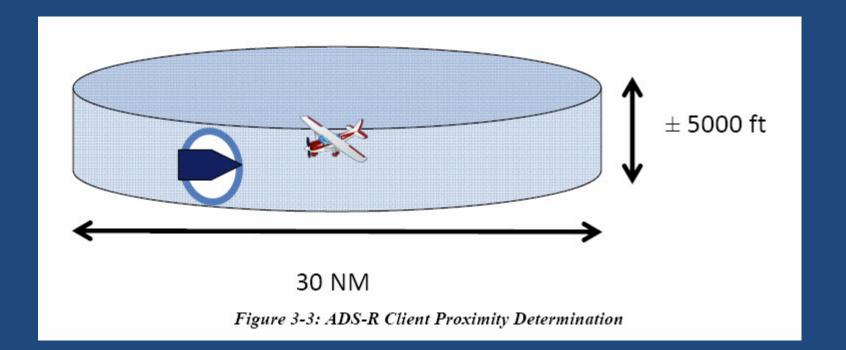
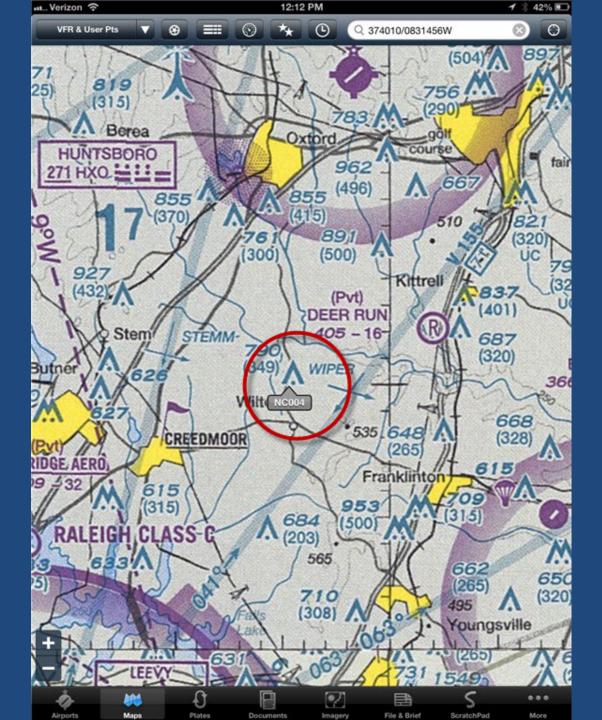


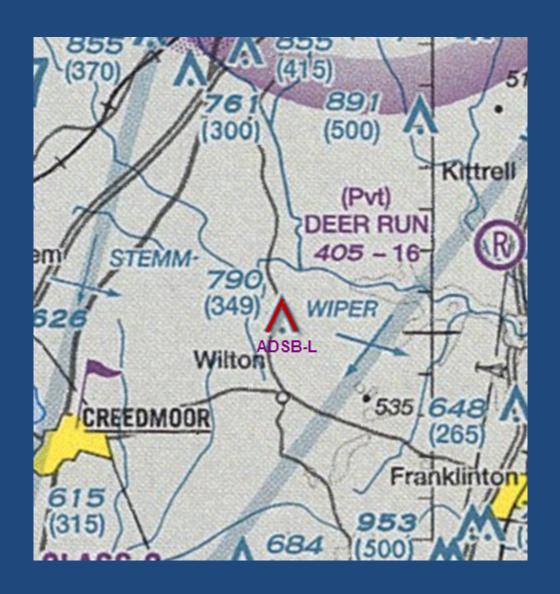
Figure 1-3: ADS-R Service Data Flows



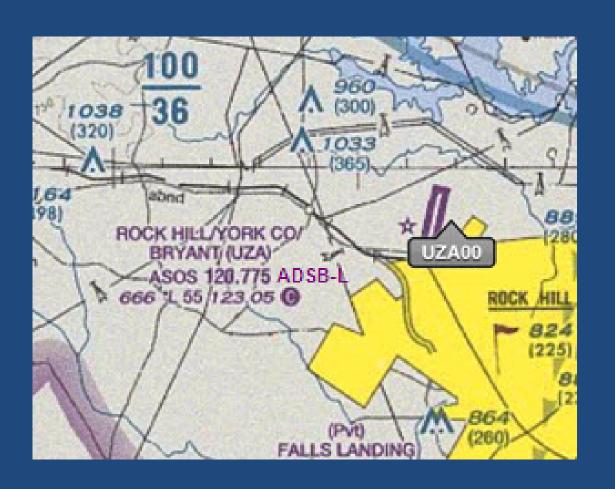
- Towers not located at airports are often indicated on Sectional Charts as obstacles or towers
- Towers located at Airports are not currently charted

- Knowing the tower locations can provide the pilot with pre-flight planning regarding:
 - Information on low altitude services
 - Airports that have Ground Services available and what the services are
 - Information on where services are not available in Mountainous areas

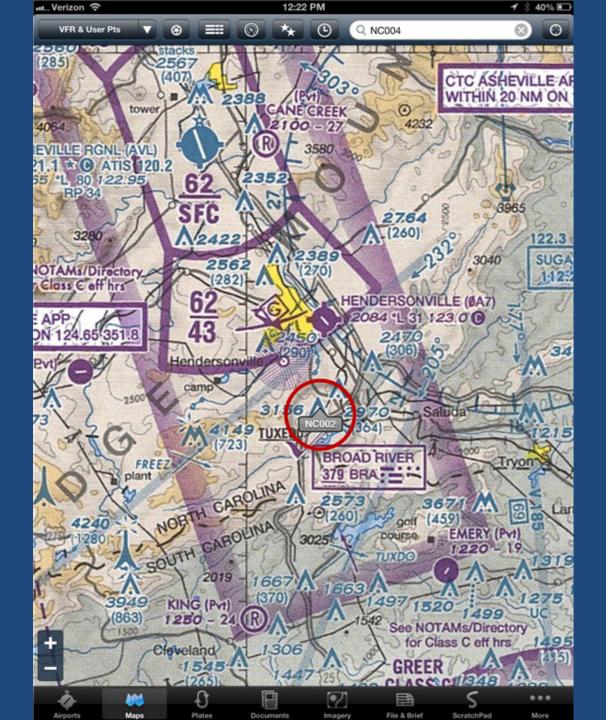












- GBT Tower locations are not secret
- Each tower transmits precise location in clear
- I requested the locations, but FAA was unwilling to provide them in list form
- They indicated they did not have an issue with them in graphical form, for example on a Sectional
- I crowd sourced the location data from fellow pilots and currently have 381 recorded site locations