



DGPS SITE OPERATIONAL ASSESSMENT

NDGPS Site:	<i>Angleton DGPS Site</i>
Inspector(s):	LT Mike Brashier
Date:	16SEP11

PURPOSE:

- Validate advertised DGPS coverage of the Angleton DGPS site.
- Validate required RTCM message delivery.
- Test differential correction accuracy versus a predetermined survey monument.

EQUIPMENT: DNAV 212 Receiver
 Raven INVICTA Receiver
 MBA-2 Receive Antenna

PARAMETERS:

Frequency	301 KHz
Forward Output Power	450W
Transmission Rate	100 baud
Field Strength/Range	75 μ V/m (37.5dB μ V/m) at 275 km

SITE PHOTO:



RESULTS

Signal Strength:

DNAV readings were taken to 614 km away from the Angleton DGPS site along a northeast bearing from Angleton, TX to New Orleans, LA. The signal strength and signal-to-noise ratio (SNR) exceeded the advertised coverage by a significant margin. Additionally, the measured coverage exceeded the predicted coverage plot of Angleton. In figure 1 below, the range ring is set to the 275 km advertised range. Green points represent areas of satisfactory signal strength and SNR. Areas of unsatisfactory signal strength and SNR are represented red points.

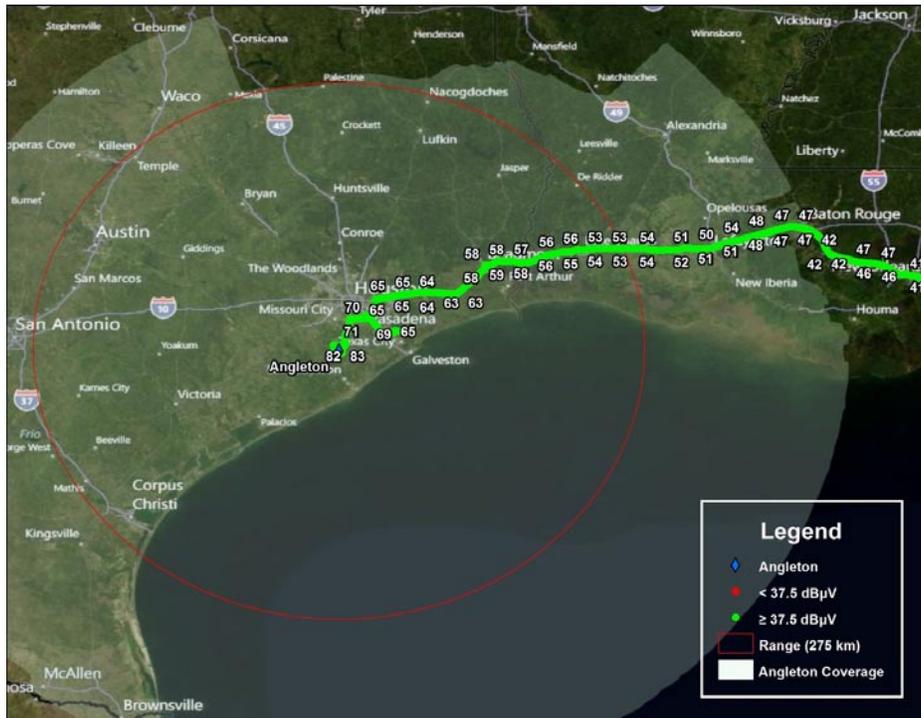


Figure 1.

Far-Field Signal Strength Reading 1:

Receiver:	DNAV 212 INVICTA
Antenna:	MBA-2
Position	30° 6.961619'N 093° 49.396680'W
Signal Strength	56 dBµ V/m
SNR	21

Far-Field Signal Strength Reading 2:

Receiver:	DNAV 212 INVICTA
Antenna:	MBA-2
Position	30° 14.79131'N 092° 51.26862'W
Signal Strength	55 dBµ V/m
SNR	21

RTCM Message Verification:

RTCM message were collected from both sides of the DGPS site utilizing a RAVEN INVICTA Receiver.

Side A

Type 3	Not observed
Type 7	X
Type 9	X
Type 16	X
Misc	N/A

Side B

Type 3	X
Type 7	X
Type 9	X
Type 16	X
Misc	N/A

Accuracy Validation:

Data was collected for 10 minutes on each side. Positional data was then averaged and compared to the actual monument position to check the horizontal accuracy of the correction.

NGS Monument ID:	AJ4424
Monument LAT:	29° 28' 50.37503" N
Monument LON:	-94° 55' 7.28812" W

Side A

Averaged LAT:	29° 28.839391' N
Averaged LON:	094° 55.121374 ' N
Distance from DGPS Site:	58.38 km
Distance from Monument:	0.38 m (1.26 feet)
Bearing from Monument:	336.10°

Side B

Averaged LAT:	29° 28.839431' N
Averaged LON:	94° 55.121454' N
Distance from DGPS Site:	58.35 km
Distance from Monument:	0.28m (0.93 feet)
Bearing from Monument:	333.16°

OPERATIONAL RECOMMENDATION: Analysis of coverage is consistent with current OP ORDER and predicted coverage plot. However, the current Op Order document incorrectly states that the Site ID is 814; the actual Site ID is 828. Recommend Site ID be changed in OPORDER.