

# CSMAC Working Group 1 (WG-1) Report 18 June 2013

1695-1710 MHz  
Meteorological-Satellite

# Overview

- Revision of Meteorological-Satellite Receive Sites and Protection Distances
- Test Plan Development
- Coordination Process

# Revision of Meteorological-Satellite Sites and Protection Distances

- In the revised CSMAC Working Group 1 Report (approved by the CSMAC in February 2013) on page 4, footnote 4, federal participants of WG-1 have identified a limited number of additional meteorological-satellite receive sites they believe warrant protection and stated they intend to raise the issue with NTIA.
- The agencies identified 22 sites operating in and adjacent to the 1695-1710 MHz band, in addition to the original 18 sites considered in the *Fast Track Report*.
- WG-1 has completed the analysis to compute protection distances for the new sites and consolidated sites with overlapping protection zones, reducing the number of new sites to nine for a total of 27 sites that require protection.
- The addition of the new meteorological-satellite sites is necessary because:
  - there were site locations considered in the Fast Track Report as a single location that actually included multiple antennas that are widely spaced. With the reduction in size of the of protection distances from the Fast Track Report analysis, it was necessary to analyze each of these antennas separately to ensure adequate protection; and
  - there were sites receiving data directly from the satellites that were thought to be either not susceptible to interference or capable of transitioning to other envisioned means of data acquisition. Current analysis shows that adjacent band sites require Protection Zones, and other means of data acquisition are either not viable, unsuitable or unfunded, and do not provide a way to ensure the existing federal capability.

# Revision of Meteorological-Satellite Sites and Protection Distances

Summary of the maximum protection distances for meteorological receive sites showing the percentage of population impacted.

(Yellow shading denotes the top 100 cities by population.)

Fast Track Report Sites				
Earth Station Location	Latitude	Longitude	Maximum Protection Distance (km)	Population Impacted (%)
Wallops Island, Virginia	375645 N	752745 W	30	0.0088
Fairbanks, Alaska	645822 N	1473002 W	20	0.0329
Suitland, Maryland	385107 N	765612 W	98	3.129
Miami, Florida	254405 N	800945 W	51	1.5114
Hickam AFB, Hawaii	211918 N	1575730 W	28	0.3866
Sioux Falls, South Dakota	434409 N	963733 W	42	0.0874
Cincinnati, Ohio	390610 N	843035 W	32	0.5041
Rock Island, Illinois	413104 N	903346 W	19	0.1180
St. Louis, Missouri	383526 N	901225 W	34	0.6650
Vicksburg, Mississippi	322047 N	905010 W	16	0.0119
Omaha, Nebraska	412056 N	955734 W	30	0.2596
Sacramento, California	383550 N	1213234 W	55	0.9022
Elmendorf AFB, Alaska	611408 N	1495531 W	98	0.1664
Andersen AFB, Guam	133452 N	1445528 E	42	0.0683
Monterey, California	363534 N	1215120 W	76	0.3294
Stennis Space Center, Mississippi	302123 N	893641 W	57	0.2465
Twenty-Nine-Palms, California	341746 N	1160944 W	80	0.2191
Yuma, Arizona	323924 N	1143622 W	95	0.1321
				<b>8.78 (7.36)</b>
New Sites				
Barrow, Alaska	711922 N	1563641 W	35	0.00183
Boise, Idaho	433542 N	1161349 W	39	0.20683
Boulder, Colorado	395926 N	1051551W	2	0.0001
Columbus Lake, Mississippi	333204 N	883006 W	3	0.0001
Fairmont, West Virginia	392602 N	801133 W	4	0.00210
Guaynabo, Puerto Rico	182526 N	660650 W	48	0.6169
Kansas City, Missouri	391640 N	943944 W	40	0.4799
Knoxville, Tennessee	355758 N	835513 W	50	0.1679
Norman, Oklahoma	351052 N	972621 W	3	0.0001
				<b>1.48 (0.65)</b>
<b>Total</b>				<b>10.26 (8.01)</b>

# Revision of Meteorological-Satellite Sites and Protection Distances

- The *Fast Track Report* exclusion zones impacted approximately 13 percent of the population, where the new geographic areas for coordination impact approximately 10 percent of the population.
- Industry representatives have indicated that the impact of the Protection Zones on the top 100 cities is an important metric.
- If only the top 100 cities are considered approximately 8 percent of the population are impacted.

# Test Plan Development

- The framework for sharing the 1695-1710 MHz band endorsed by WG-1 contained a provision for a testing program to demonstrate the viability and effectiveness of proposed protection/mitigation methods before wireless service providers begin operations within Protected Zones.
- The testing program envisioned by WG-1 will:
  - validate co-channel and adjacent channel sharing assumptions and model prior to the development of final service rules, and validate interference mitigation methods prior to commencing operations;
  - establish mutual agreement on proposed validation and verification methods;
  - clearly define coordination and approval responsibilities for verification test plans and schedules; and
  - be adaptable for future or potentially changing satellite and commercial configurations.
- WG-1 has starting developing a test plan to support the objectives of the testing program.

# Coordination Process

- The framework for sharing the 1695-1710 MHz band endorsed by WG-1 identified the need for a coordination process.
- The coordination process will establish:
  - A nationally-approved interference prediction model, associated input parameters, and distribution of the aggregate Interference Power Spectral Density (IPSD) limit among commercial licensees
  - Coordination procedures, including an automated process, to the extent possible, to assess if the proposed commercial network will meet the IPSD limits, to facilitate coordination to allow commercial operations within the Protection Zones
  - Procedures for implementing on-going, real-time monitoring to ensure the IPSD limits are not being exceeded.
- A briefing was provided by the NTIA Institute for Telecommunication Sciences to discuss their capabilities for establishing a Coordination Portal.
  - Other avenues will also be considered as they are identified and developed.