

Justification and Fixed Location Information

This STA is required so that the Applicant can evaluate Nokia Siemens Network (NSN) prototype equipment as a candidate for commercial deployment as part of the Applicant's WiMAX deployment. This equipment will be used to conduct over-the-air testing in the Applicant's Arlington Virginia Test Cluster. The equipment will be tested and evaluated on a variety of aspects, including compatibility with other WiMAX devices, performance and coverage in a mixed residential/commercial environment, hand-off capabilities between cells, and reliability. The equipment has not yet received an FCC grant of equipment authorization (certification). While the FCC rules, Section 2.803(e)(1)(v) permits radio devices to be operated prior to equipment authorization for evaluation of product performance and determination of customer acceptability, such operations are limited to non-residential locations. It is important, however, for this equipment to be tested in both commercial and residential environments in order to fully assess its suitability of eventual commercial deployment. The Arlington Virginia Test Cluster has been established just for this purpose. The Applicant anticipates deploying commercial service in the Washington, DC area, including the Arlington Virginia Test Cluster, in the near future; thus, quick approval of this Application is requested so that the testing and evaluation can be completed. The Applicant believes that the equipment complies with all of the FCC's requirements for equipment authorization and does not, therefore, expect any interference to result from this equipment's deployment. Furthermore, this equipment will be operated only on frequencies within the requested frequency band that are controlled throughout the test area (either through license or lease) by the Applicant, thus minimizing the likelihood of any interference.

At each fixed location, there is a separate Nokia Siemens Networks model SYRE20WATT transmitter that feeds a KMW Communications model AM-X-WM-17-65-00T antenna for each of three sectors. The transmitter's 20 watt output power is split between the two MIMO input ports on the antenna. A spec sheet for the antenna is attached.

Station Location

City	State	Latitude	Longitude	Mobile	Radius of Operation
Falls Church	Virginia	38° 51' 9.36" N	77° 8' 3.479" W		1.00

Datum: NAD 83

Is a directional antenna (other than radar) used? Yes

Exhibit submitted: Yes

(a) Width of beam in degrees at the half-power point: 3 Sectors each 65 degrees

(b) Orientation in horizontal plane: Sector 1: 30° Sector 2 : 104° Sector 3: 297°

(c) Orientation in vertical plane: 3° downtilt in each sector

Will the antenna extend more than 6 meters above the ground, or if mounted on an existing building, will it extend more than 6 meters above the building, or will the proposed antenna be mounted on an existing structure other than a building? No

(a) Overall height above ground to tip of antenna in meters: 45.72

(b) Elevation of ground at antenna site above mean sea level in meters: 77.72

(c) Distance to nearest aircraft landing area in kilometers: 10

(d) List any natural formations of existing man-made structures (hills, trees, water tanks, towers, etc.) which, in the opinion of the applicant, would tend to shield the antenna from aircraft: None

City	State	Latitude	Longitude	Mobile	Radius of Operation
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Falls Church Virginia 38° 51' 51.119" N 77° 8' 13.199" W 1.00

Datum: NAD 83

Is a directional antenna (other than radar) used? Yes

Exhibit submitted: Yes

(a) Width of beam in degrees at the half-power point: 3 Sectors each 65 degrees

(b) Orientation in horizontal plane: Sector 1: 10° Sector 2 : 150° Sector 3: 280°

(c) Orientation in vertical plane: 2° downtilt in each sector

Will the antenna extend more than 6 meters above the ground, or if mounted on an existing building, will it extend more than 6 meters above the building, or will the proposed antenna be mounted on an existing structure other than a building? No

(a) Overall height above ground to tip of antenna in meters: 33

(b) Elevation of ground at antenna site above mean sea level in meters: 83

(c) Distance to nearest aircraft landing area in kilometers: 9

(d) List any natural formations of existing man-made structures (hills, trees, water tanks, towers, etc.) which, in the opinion of the applicant, would tend to shield the antenna from aircraft: None

City	State	Latitude	Longitude	Mobile	Radius of Operation
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Falls Church Virginia 38° 51' 22.679" N 77° 6' 52.56" W 1.00

Datum: NAD 83

Is a directional antenna (other than radar) used? Yes

Exhibit submitted: Yes

(a) Width of beam in degrees at the half-power point: 3 Sectors each 65 degrees

(b) Orientation in horizontal plane: Sector 1: 30° Sector 2 : 150° Sector 3: 270°

(c) Orientation in vertical plane: 3° downtilt in each sector

Will the antenna extend more than 6 meters above the ground, or if mounted on an existing building, will it extend more than 6 meters above the building, or will the proposed antenna be mounted on an existing structure other than a building? No

(a) Overall height above ground to tip of antenna in meters: 20

(b) Elevation of ground at antenna site above mean sea level in meters: 71

(c) Distance to nearest aircraft landing area in kilometers: 7

(d) List any natural formations of existing man-made structures (hills, trees, water tanks, towers, etc.) which, in the opinion of the applicant, would tend to shield the antenna from aircraft: None

City	State	Latitude	Longitude	Mobile	Radius of Operation
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Alexandria Virginia 38° 50' 2.039" N 77° 6' 16.919" W 1.00

Datum: NAD 83

Is a directional antenna (other than radar) used? Yes

Exhibit submitted: Yes

(a) Width of beam in degrees at the half-power point: 3 Sectors each 65 degrees

(b) Orientation in horizontal plane: Sector 1: 30° Sector 2 : 150° Sector 3: 270°

(c) Orientation in vertical plane: **downtilt** ; Sector 1: 3° Sector 2 : 0° Sector 3: 0°

Will the antenna extend more than 6 meters above the ground, or if mounted on an existing building, will it extend more than 6 meters above the building, or will the proposed antenna be mounted on an existing structure other than a building? No

(a) Overall height above ground to tip of antenna in meters: 42

(b) Elevation of ground at antenna site above mean sea level in meters: 57

(c) Distance to nearest aircraft landing area in kilometers: 6.5

(d) List any natural formations of existing man-made structures (hills, trees, water tanks, towers, etc.) which, in the opinion of the applicant, would tend to shield the antenna from aircraft: None

City	State	Latitude	Longitude	Mobile	Radius of Operation
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Falls Church Virginia 38° 50' 43.799" N 77° 8' 20.399" W 1.00

Datum: NAD 83

Is a directional antenna (other than radar) used? Yes

Exhibit submitted: Yes

(a) Width of beam in degrees at the half-power point: 3 Sectors each 65 degrees

(b) Orientation in horizontal plane: Sector 1: 17° Sector 2 : 141° Sector 3: 251°

(c) Orientation in vertical plane: **downtilt** Sector 1: 6° Sector 2 : 6° Sector 3: 0°

Will the antenna extend more than 6 meters above the ground, or if mounted on an existing building, will it extend more than 6 meters above the building, or will the proposed antenna be mounted on an existing structure other than a building? Yes

(a) Overall height above ground to tip of antenna in meters: 35

(b) Elevation of ground at antenna site above mean sea level in meters: 75

(c) Distance to nearest aircraft landing area in kilometers: 6.5

(d) List any natural formations of existing man-made structures (hills, trees, water tanks, towers, etc.) which, in the opinion of the applicant, would tend to shield the antenna from aircraft: None

City	State	Latitude	Longitude	Mobile	Radius of Operation
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Herndon Virginia 38° 57' 15.839" N 77° 23' 7.439" W 1.00

Datum: NAD 83

Is a directional antenna (other than radar) used? Yes

Exhibit submitted: Yes

(a) Width of beam in degrees at the half-power point: 3 Sectors each 65 degrees

(b) Orientation in horizontal plane: Sector 1: 30° Sector 2 : 150° Sector 3: 270°

(c) Orientation in vertical plane: 2° downtilt in each sector

Will the antenna extend more than 6 meters above the ground, or if mounted on an existing building, will it extend more than 6 meters above the building, or will the proposed antenna be mounted on an existing structure other than a building? No

(a) Overall height above ground to tip of antenna in meters: 18

(b) Elevation of ground at antenna site above mean sea level in meters: 115

(c) Distance to nearest aircraft landing area in kilometers: 6.3

(d) List any natural formations of existing man-made structures (hills, trees, water tanks, towers, etc.) which, in the opinion of the applicant, would tend to shield the antenna from aircraft: None

City	State	Latitude	Longitude	Mobile	Radius of Operation
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Reston Virginia 38° 57' 2.999" N 77° 21' 32.000" W 1.00

Datum: NAD 83

Is a directional antenna (other than radar) used? Yes

Exhibit submitted: Yes

(a) Width of beam in degrees at the half-power point: 3 Sectors each 65 degrees

(b) Orientation in horizontal plane: Sector 1: 30° Sector 2 : 150° Sector 3: 270°

(c) Orientation in vertical plane: 2° downtilt in each sector

Will the antenna extend more than 6 meters above the ground, or if mounted on an existing building, will it extend more than 6 meters above the building, or will the proposed antenna be mounted on an existing structure other than a building? No

(a) Overall height above ground to tip of antenna in meters: 40

(b) Elevation of ground at antenna site above mean sea level in meters: 131

(c) Distance to nearest aircraft landing area in kilometers: 9

(d) List any natural formations of existing man-made structures (hills, trees, water tanks, towers, etc.) which, in the opinion of the applicant, would tend to shield the antenna from aircraft: None