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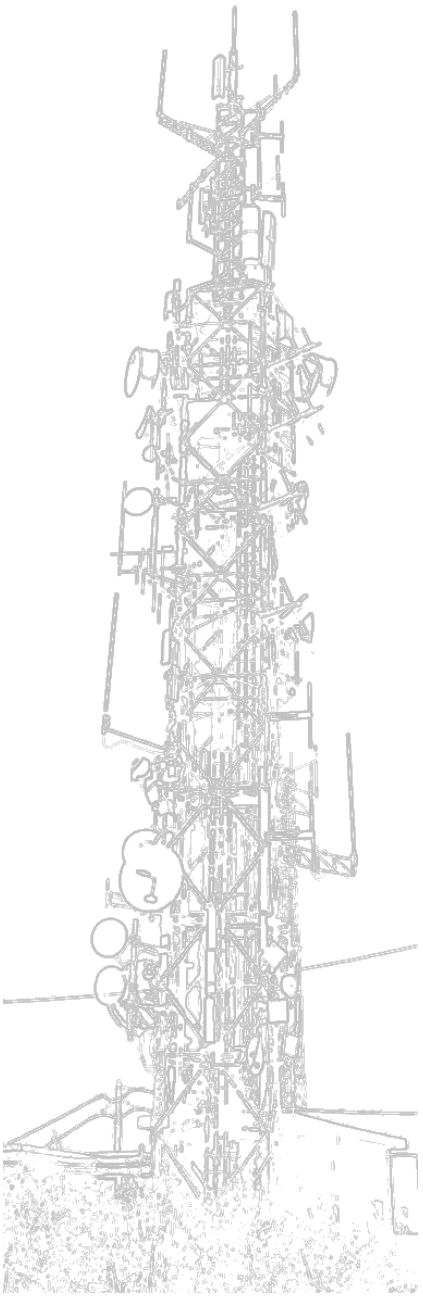
CIF: B16430621
CNMC: RO/DTSA/0369/21
+34 933 93 92 51
riccardo@redama.es

PRIVATE RAN NETWORK ANALYSIS 23.97396770955065, 38.27582952023366



1.0 Información de contacto.

Operador:

BSDTelecom Lobby SL
Redama ®
Riccardo Giuntoli, CEO
+34 660 92 28 90
riccardo@redama.es

Cliente:

BSDTelecom Lobby S.L.
CIF: B16430621
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+34 933 93 92 51
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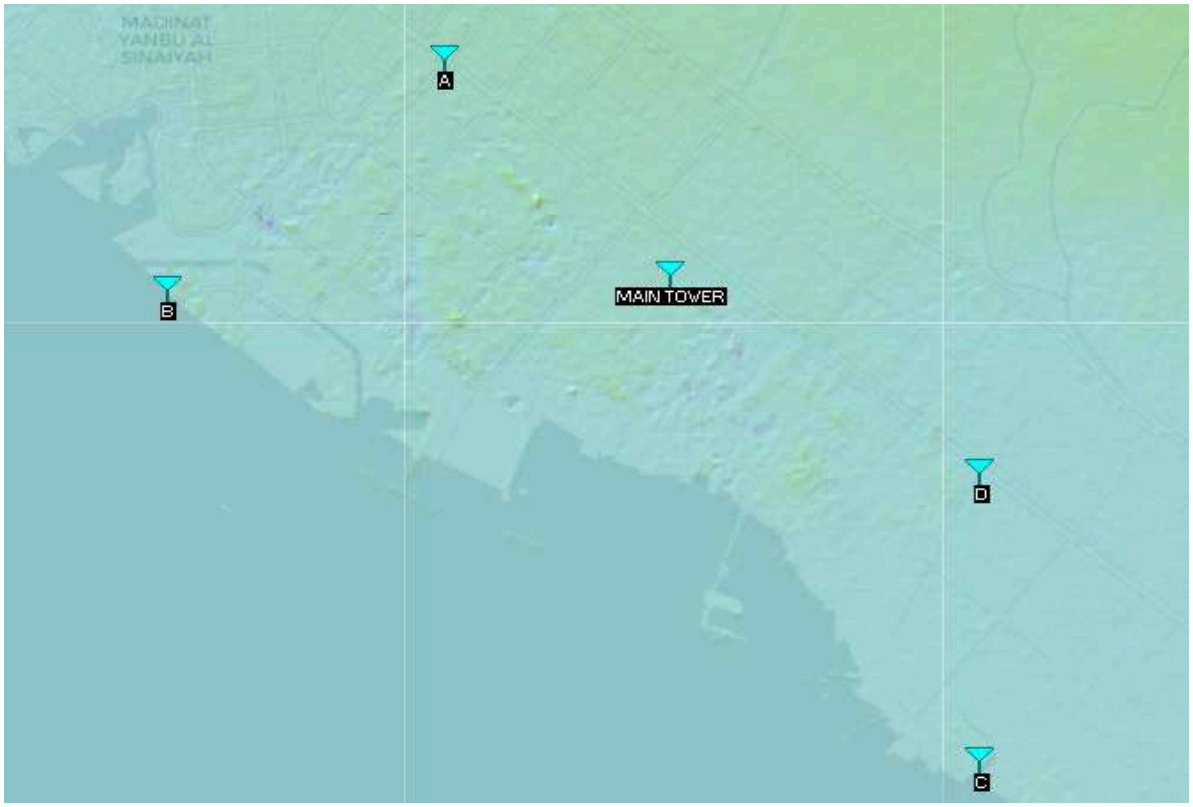
2.0 RAN PRESENCE POINTS.

The feasibility of different 5G RAN network presence points is then analyzed based on territorial coverage, taking into account smartphone clients. The geographic points are estimated, minus the "MAIN TOWER," which appears to already exist.
Satellite-derived topographic data are used for terrain surveying and radio coverage.



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2.0.1 “MAIN TOWER COVERAGE”.

“Main tower” RAN point of presence is located at:

- 23.973964273841947, 38.275829522307816

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riccardo@redama.es

Each coverage sector is powered by a 5G radio, a backpack. We use an 18 dBi gain antenna with a 90-degree horizontal aperture, each allowing for two polarizations at once: vertical and horizontal 2x2 MIMO. Each radio transmits with a power of 40 watts, which is transformed into 1.45 kilowatts of radiated power due to the antenna and the added loss of the cable and connectors. Professional coaxial cables with very low loss and optimal connectors are used. We take N78 NG as a reference frequency band, remembering that we can opt for lower frequencies for better obstacle penetration. N78 is between 3300 and 3600 Mhz.

At “MAIN TOWER” point of presence we’ve got two radios, one pointing to the east, 275 degrees, and the other to the south, 180 degrees.

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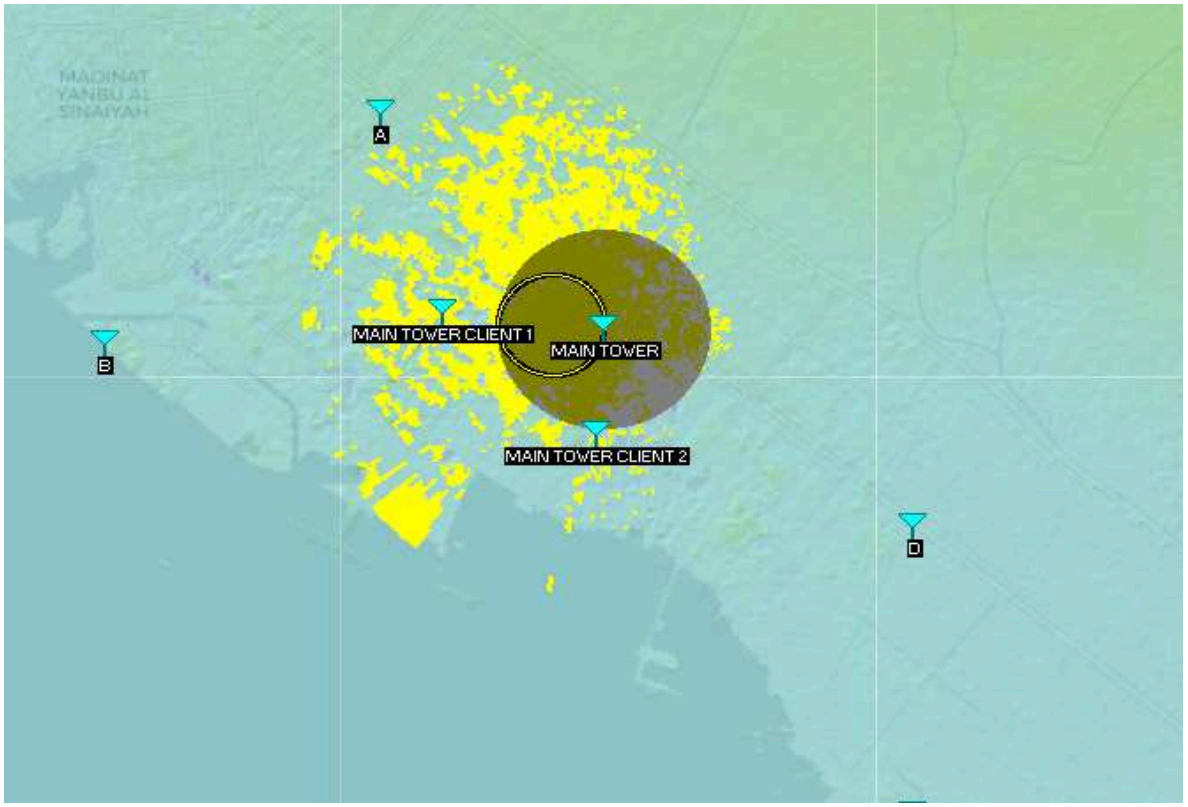
As references we take the first client is located approximately 2.7 km in a straight line from the "MAIN TOWER" point of presence, at 275 degrees west. The second is located at two kilometers, at 185 degrees south.

East sector coverage:



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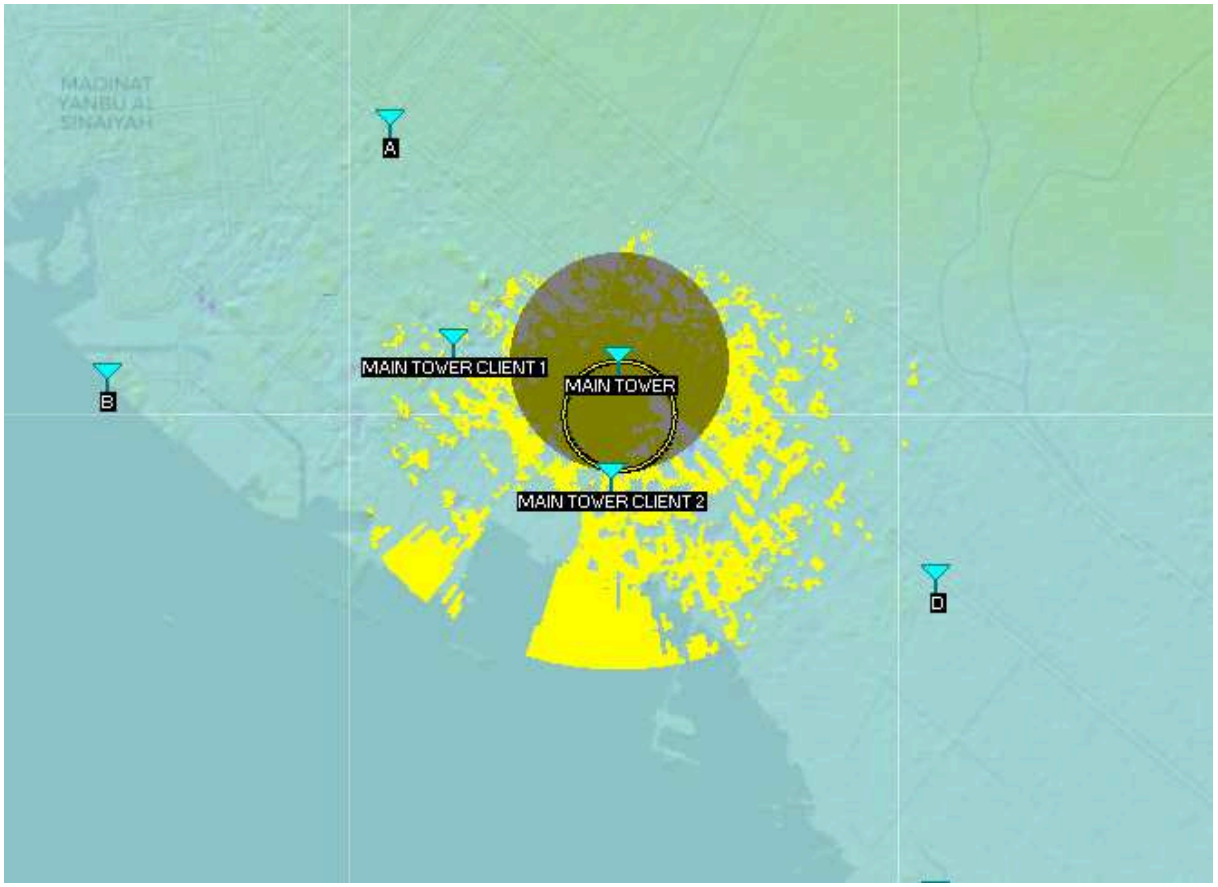
South sector coverage:



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2.0.2 “A TOWER” COVERAGE.

“A tower” RAN point of presence is located at:

- 24.008423371866527, 38.23922738098157

Each coverage sector is powered by a 5G radio, a backpack. We use an 18 dBi gain antenna with a 90-degree horizontal aperture, each allowing for two polarizations at once: vertical and horizontal 2x2 MIMO. Each radio transmits with a power of 40 watts, which is transformed into 1.45 kilowatts of

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CNMC: RO/DTSA/0369/21
+34 933 93 92 51
riccardo@redama.es

radiated power due to the antenna and the added loss of the cable and connectors. Professional coaxial cables with very low loss and optimal connectors are used. We take N78 NG as a reference frequency band, remembering that we can opt for lower frequencies for better obstacle penetration. N78 is between 3300 and 3600 Mhz.

At “A TOWER” point of presence we’ve got one radio, one pointing to the south, 180 degrees.

As references we take the first client is located approximately 2.1 km in a straight line from the

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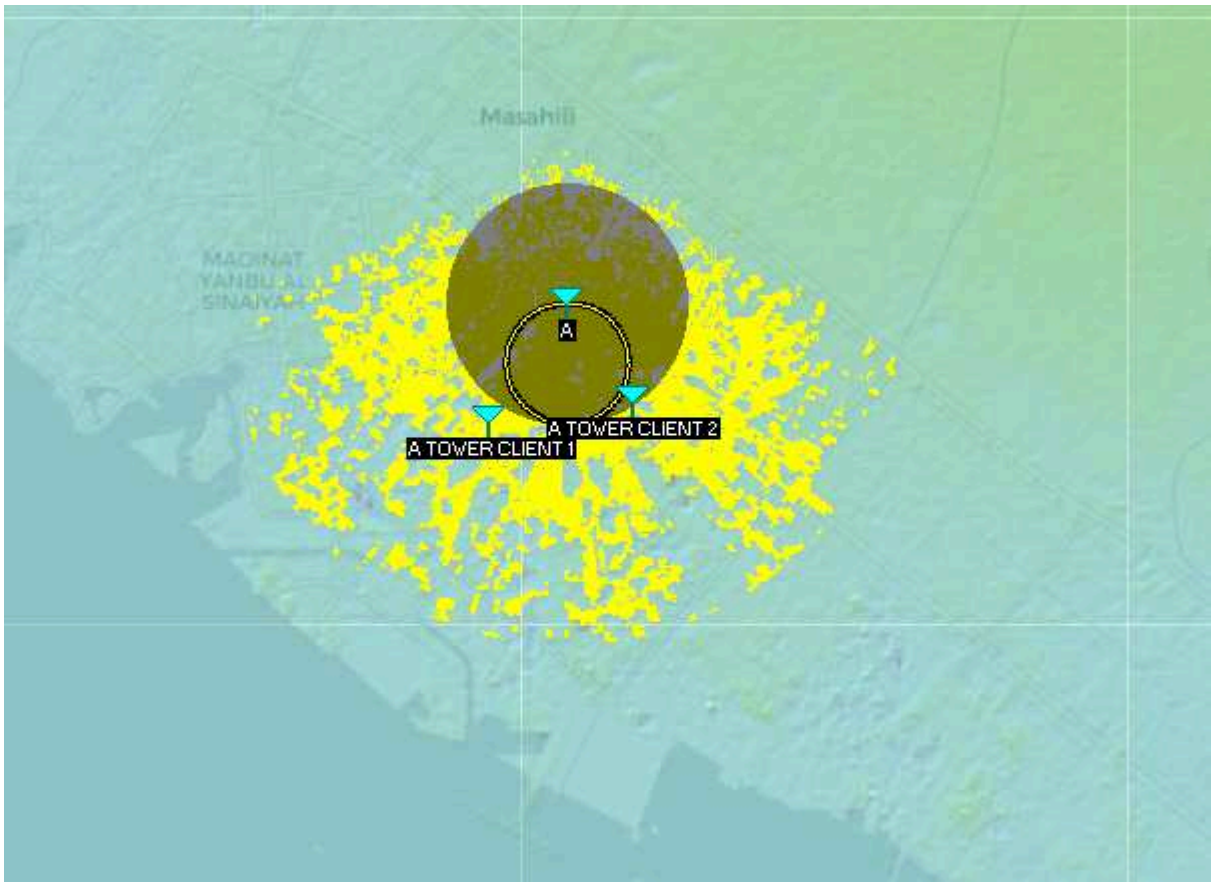
"A TOWER" point of presence, at 213 degrees south west. The second is located at 1.7 kilometers, at 147 degrees south east.

South sector coverage:



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CNMC: RO/DTSA/0369/21
+34 933 93 92 51
riccardo@redama.es

2.0.3 “B TOWER” COVERAGE.

“B tower” RAN point of presence is located at:

- 23.971485870385962, 38.19398596795845

Each coverage sector is powered by a 5G radio, a backpack. We use an 18 dBi gain antenna with a 90-degree horizontal aperture, each allowing for two polarizations at once: vertical and horizontal 2x2 MIMO. Each radio transmits with a power of 40 watts, which is transformed into 1.45 kilowatts of

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+34 933 93 92 51
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radiated power due to the antenna and the added loss of the cable and connectors. Professional coaxial cables with very low loss and optimal connectors are used. We take N78 NG as a reference frequency band, remembering that we can opt for lower frequencies for better obstacle penetration. N78 is between 3300 and 3600 Mhz.

At “B TOWER” point of presence we’ve got one radio, one pointing to the east, 90 degrees.

As references we take the first client is located approximately 2.6 km in a straight line from the

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"B TOWER" point of presence, at 96 degrees east.

East sector coverage:

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2.0.4 “C TOWER” COVERAGE.

“C tower” RAN point of presence is located at:

- 23.89567930561216, 38.32644376433138

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CNMC: RO/DTSA/0369/21
+34 933 93 92 51
riccardo@redama.es

Each coverage sector is powered by a 5G radio, a backpack. We use an 18 dBi gain antenna with a 90-degree horizontal aperture, each allowing for two polarizations at once: vertical and horizontal 2x2 MIMO. Each radio transmits with a power of 40 watts, which is transformed into 1.45 kilowatts of radiated power due to the antenna and the added loss of the cable and connectors. Professional coaxial cables with very low loss and optimal connectors are used. We take N78 NG as a reference frequency band, remembering that we can opt for lower frequencies for better obstacle penetration. N78 is between 3300 and 3600 Mhz.

At “C TOWER” point of presence we’ve got one radio, one pointing to the north west, 335 degrees.

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CNMC: RO/DTSA/0369/21
+34 933 93 92 51
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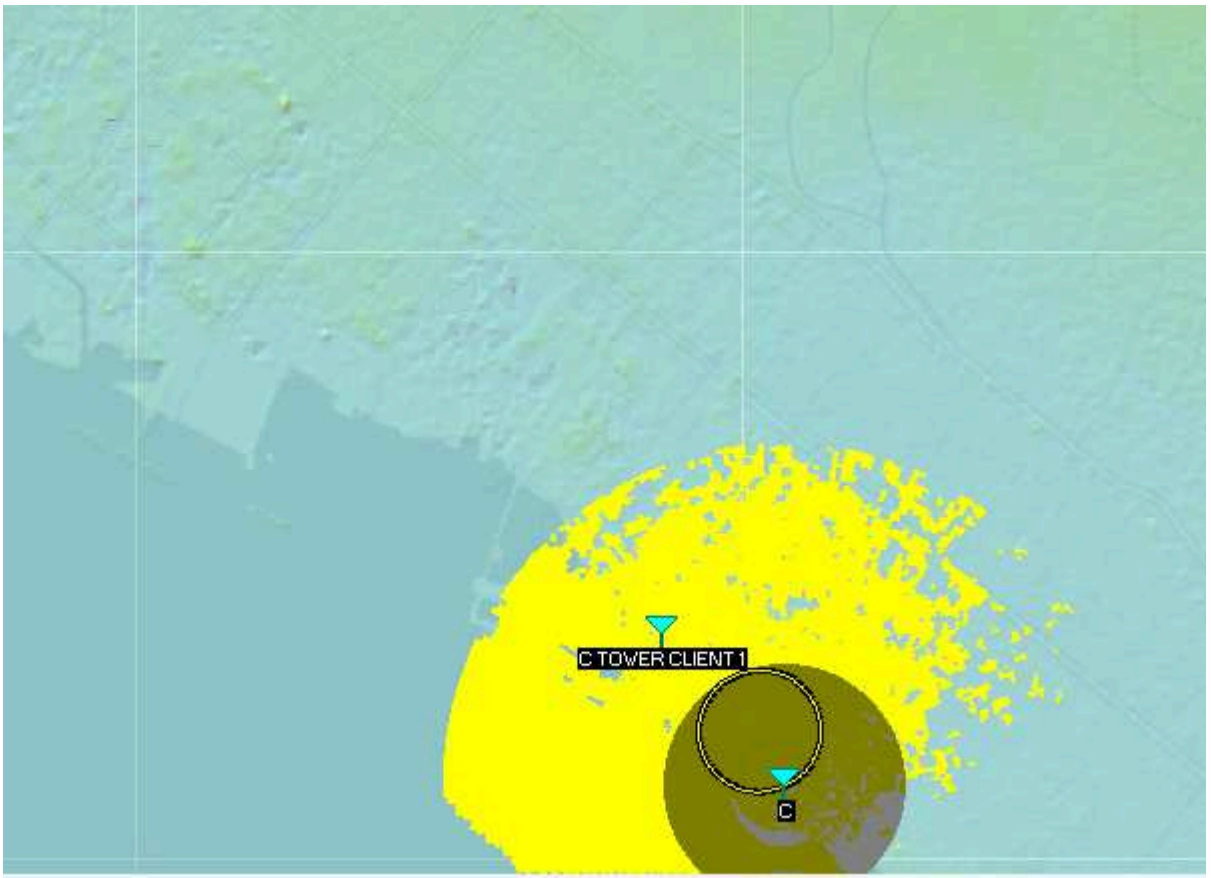
As references we take the first client is located approximately 2.8 km in a straight line from the “C TOWER" point of presence, at 320 degrees north west.

North west sector coverage:



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riccardo@redama.es

2.0.5 “D TOWER” COVERAGE.

“D tower” RAN point of presence is located at:

- 23.941993043144713, 38.326297142311994

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+34 933 93 92 51
riccardo@redama.es

Each coverage sector is powered by a 5G radio, a backpack. We use an 18 dBi gain antenna with a 90-degree horizontal aperture, each allowing for two polarizations at once: vertical and horizontal 2x2 MIMO. Each radio transmits with a power of 40 watts, which is transformed into 1.45 kilowatts of radiated power due to the antenna and the added loss of the cable and connectors. Professional coaxial cables with very low loss and optimal connectors are used. We take N78 NG as a reference frequency band, remembering that we can opt for lower frequencies for better obstacle penetration. N78 is between 3300 and 3600 Mhz.

At D TOWER" point of presence we've got one radio, one pointing to the west, 275 degrees.

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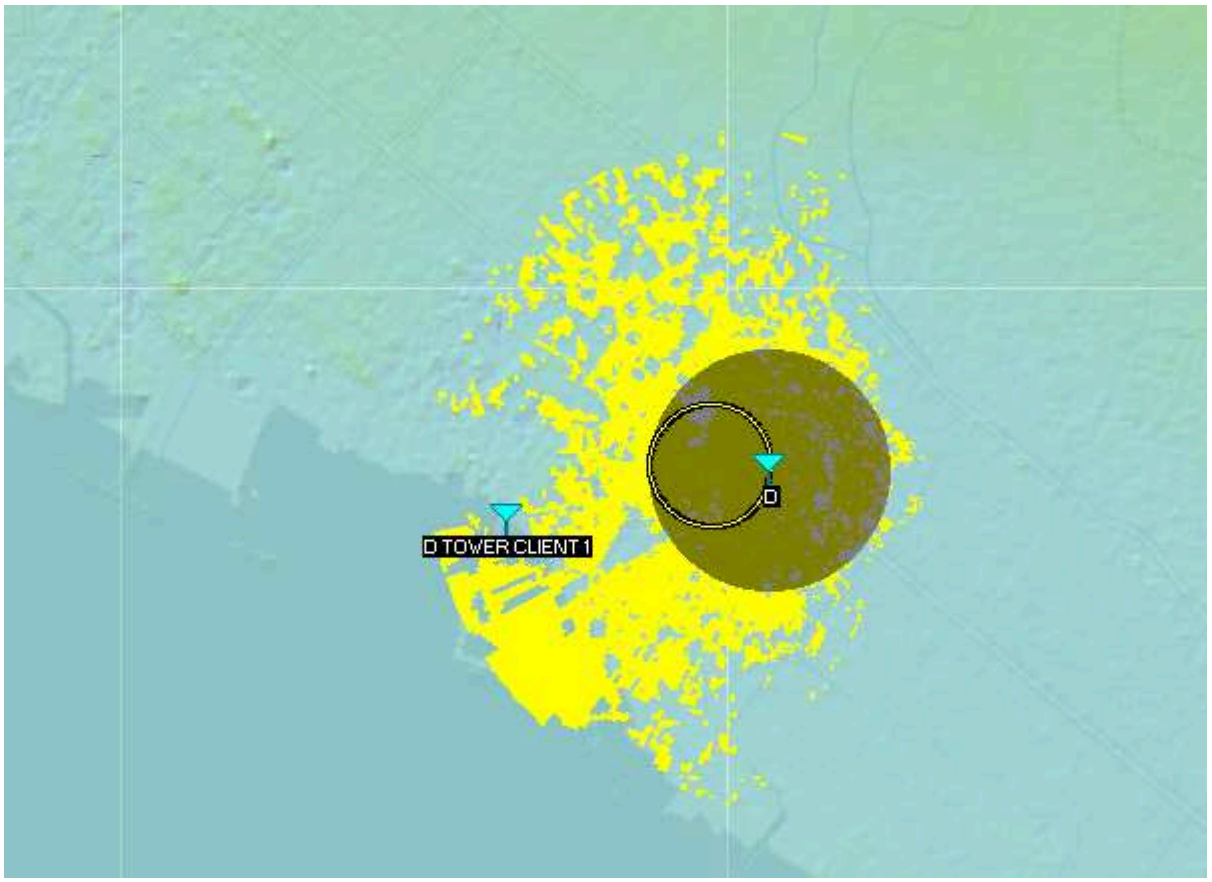
As references we take the first client is located approximately 3.8 km in a straight line from the “D TOWER" point of presence, at 260 degrees south west.

West sector coverage:



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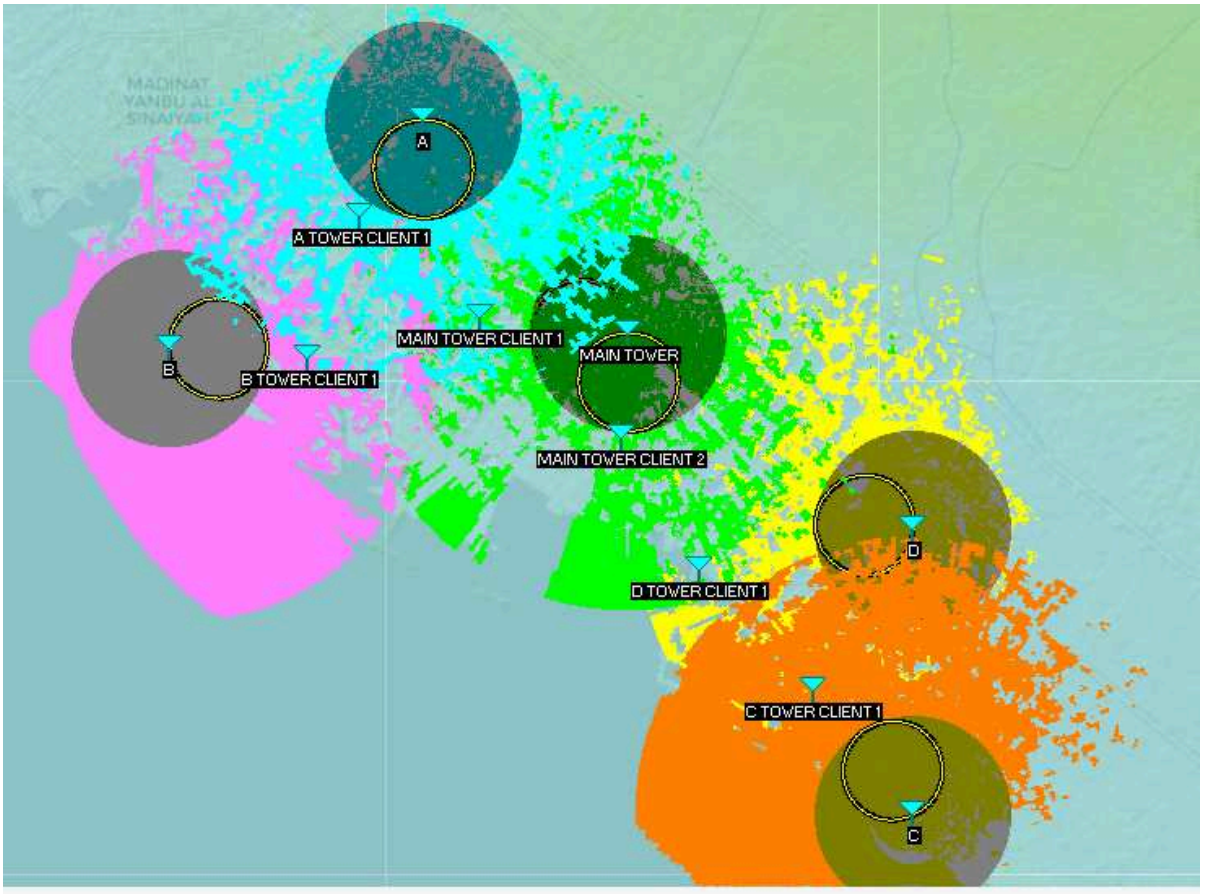
3.0 FULL RAN NETWORK COVERAGE.

Multiplying results from past studies we can add a theoretical RAN access network coverage. By the way, site survey is an obligation due to the various human constructions present in the analyzed territory. As you can appreciate we've got some maritime miles covered!



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CNMC: *RO/DTSA/0369/21*
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Atentamente,