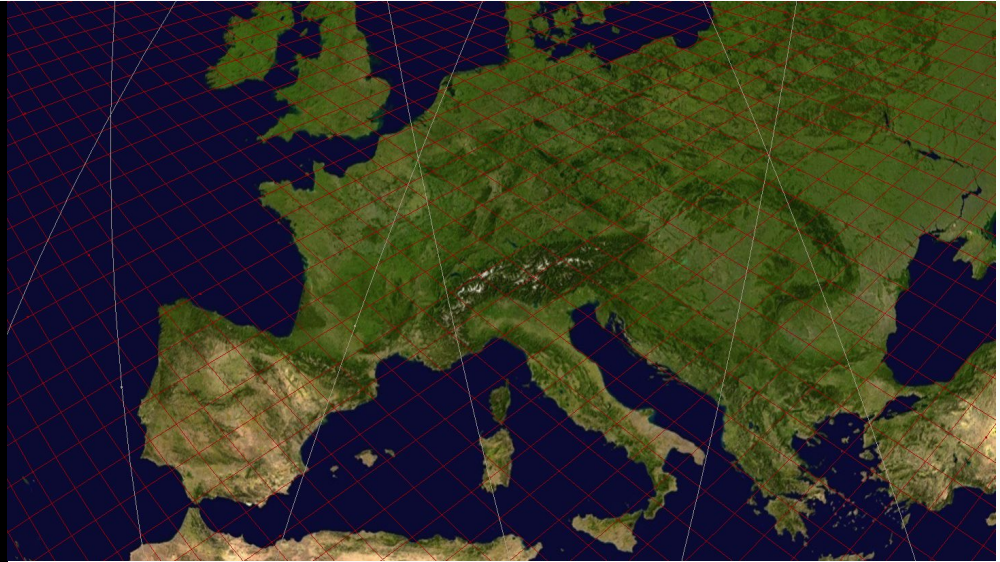
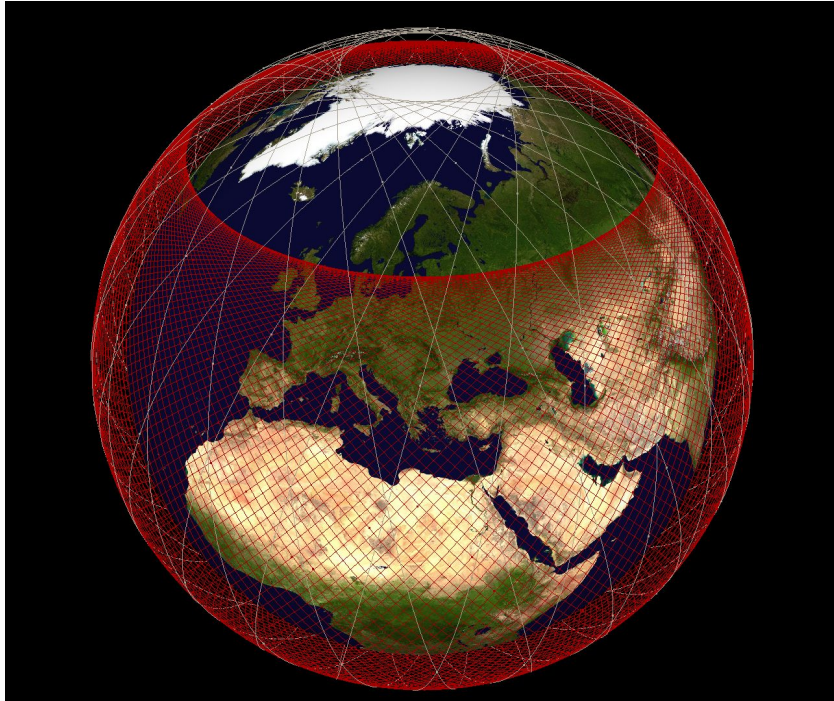


# Dynamic Spectrum Access in Integrated Terrestrial and Non-Terrestrial 5G and 6G Architecture

Heikki Kokkinen, Fairspectrum

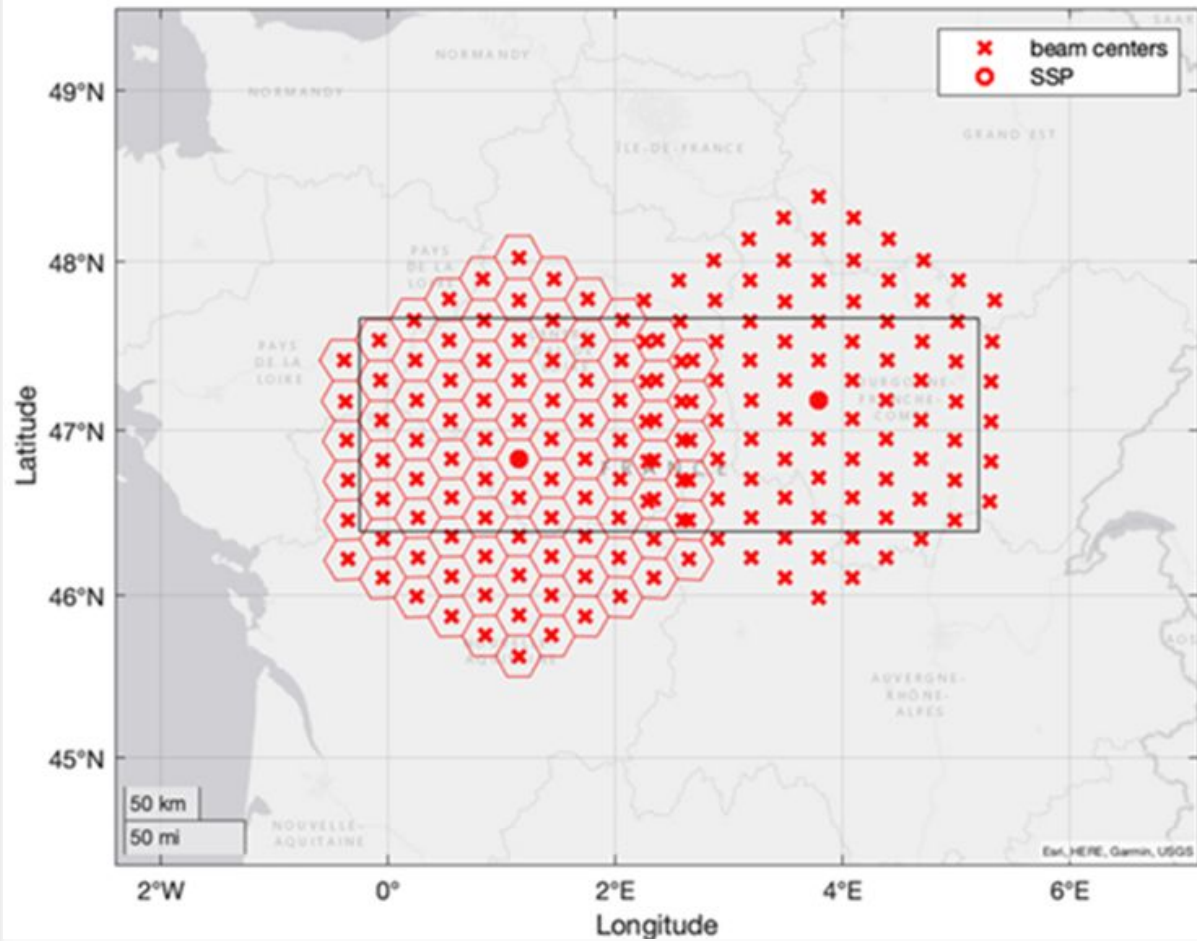
A. Piemontese, A. Reis-Kivinen, Ł. Kułacz, N. Borios, C. Amatetti

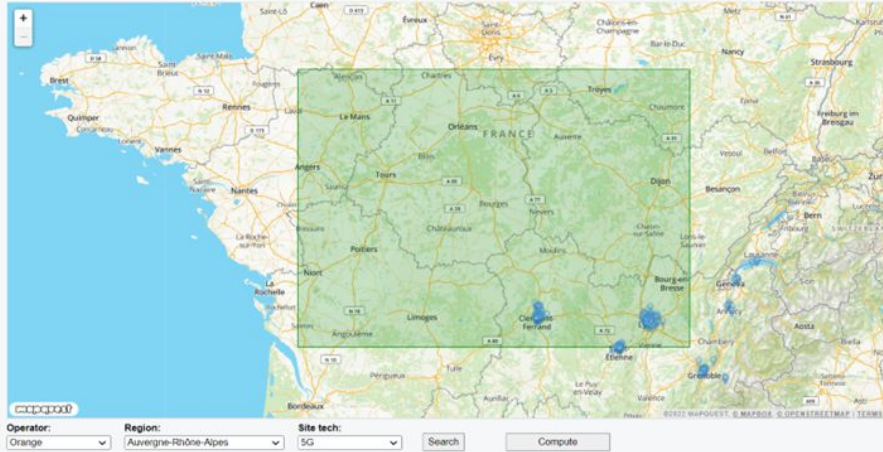
# LEO satellite constellation in Dynasat project



Source: Thales Alenia Space,  
Dynasat project

# Satellite network in the simulation Non Terrestrial Network (NTN)



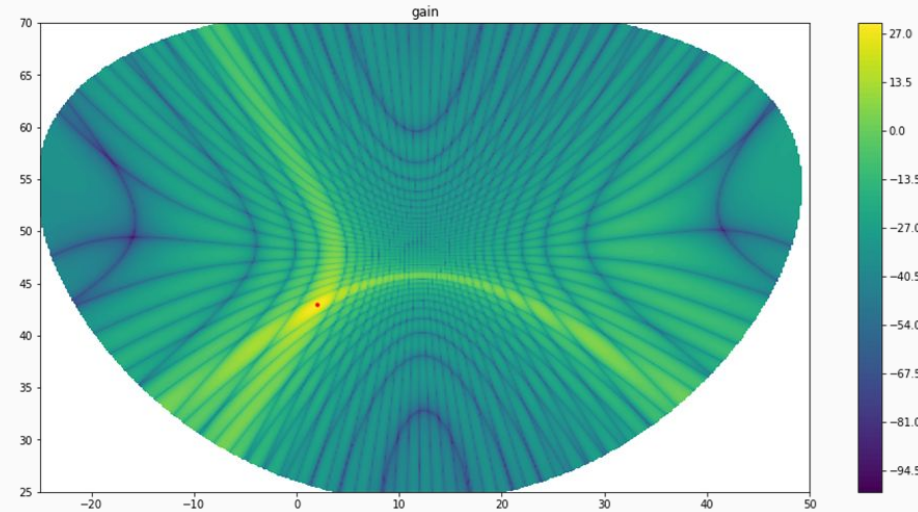


## Terrestrial Network (TN)

# Method

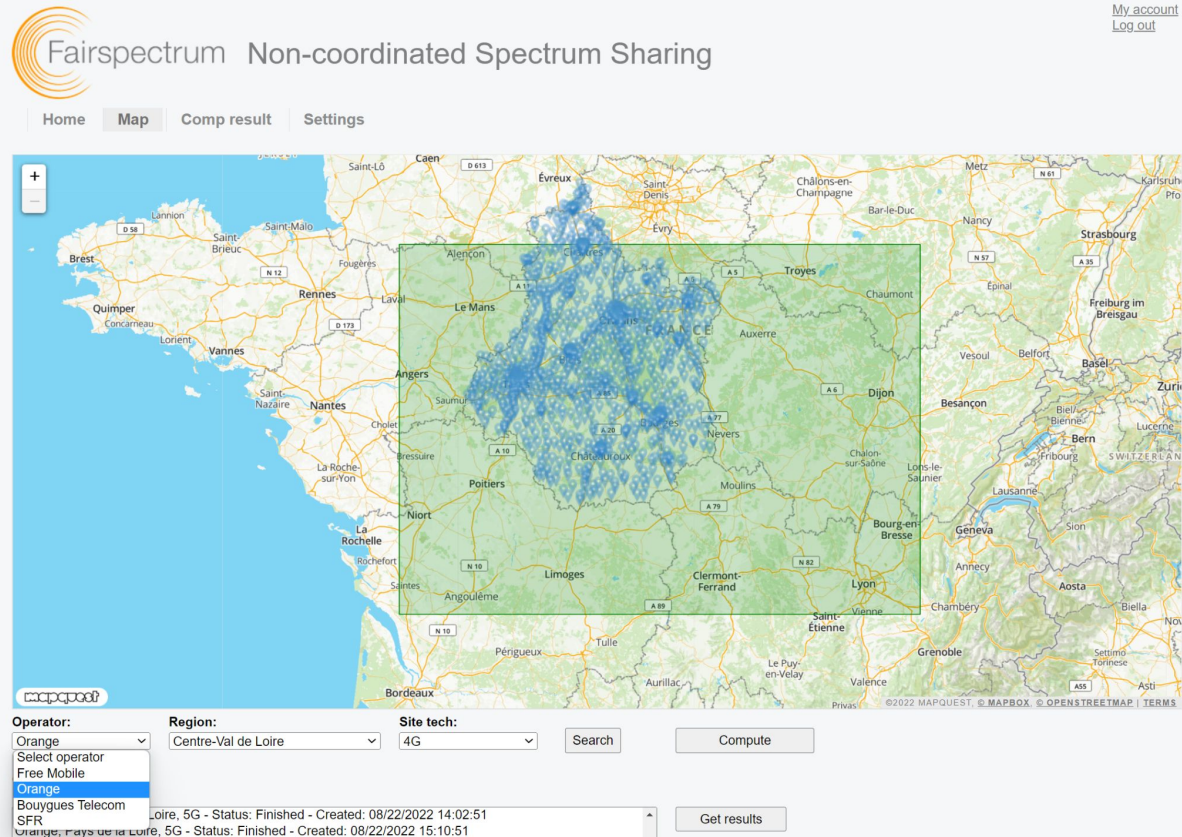
Activating and de-activating the satellite beams so that the aggregate I/N at TN UE does not exceed the limit.

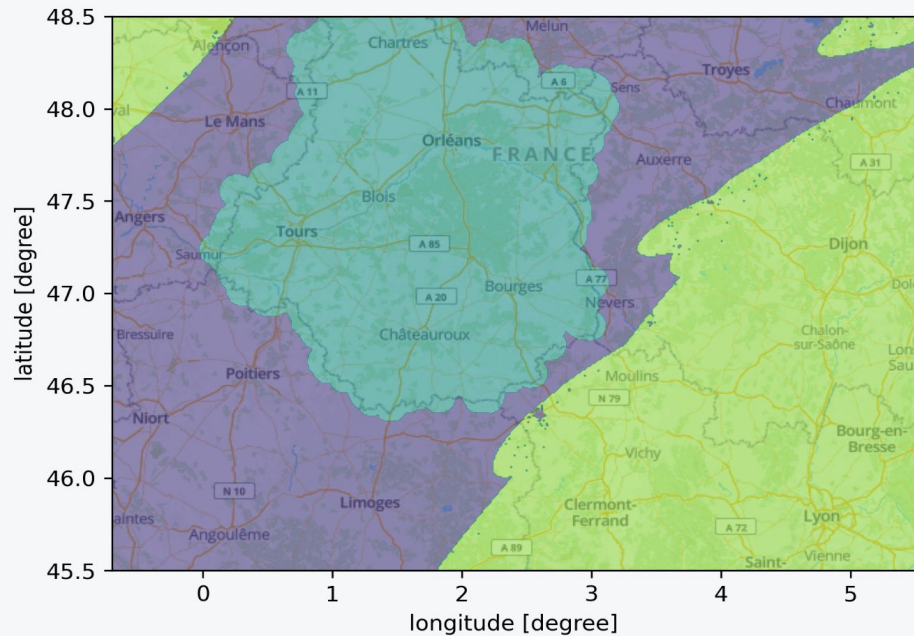
Linear optimization to keep maximum number of beams active.



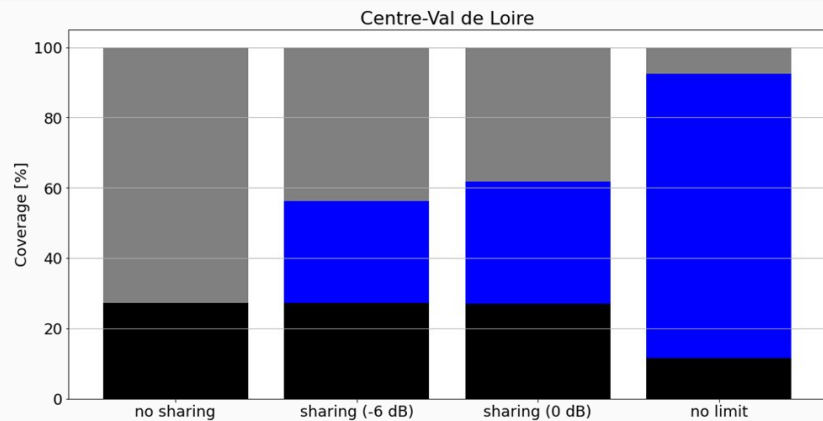


# Satellite network in the simulation Non Terrestrial Network (NTN)

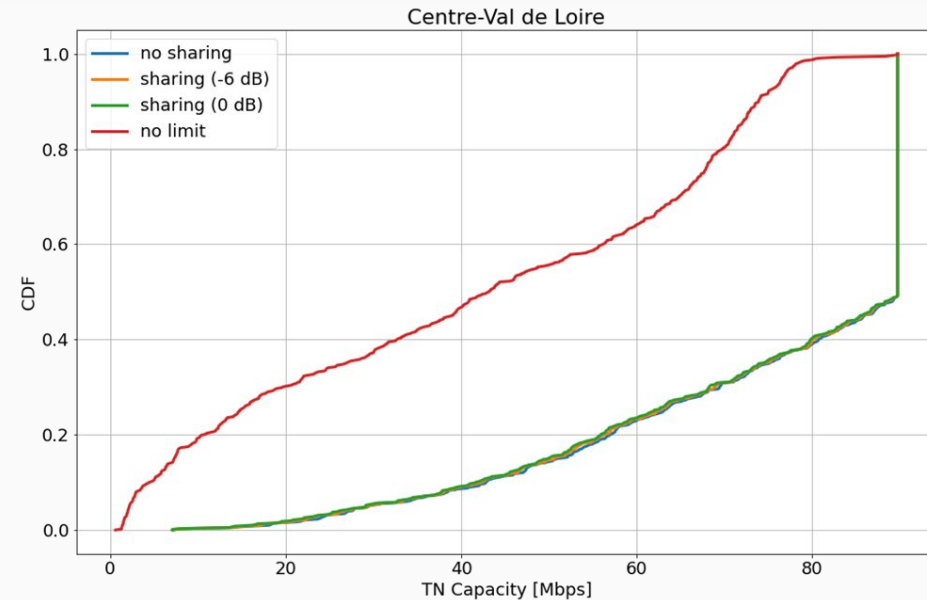
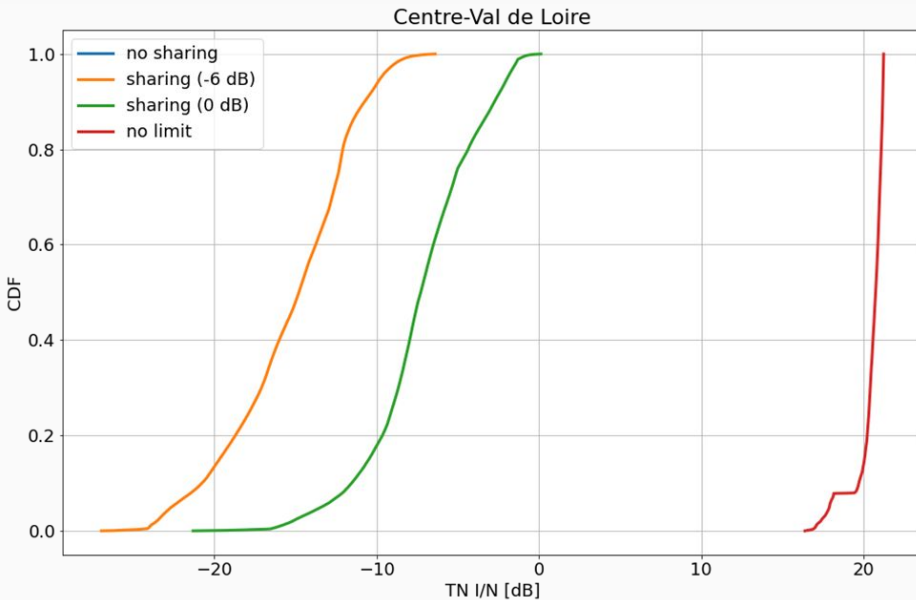




## Coverage

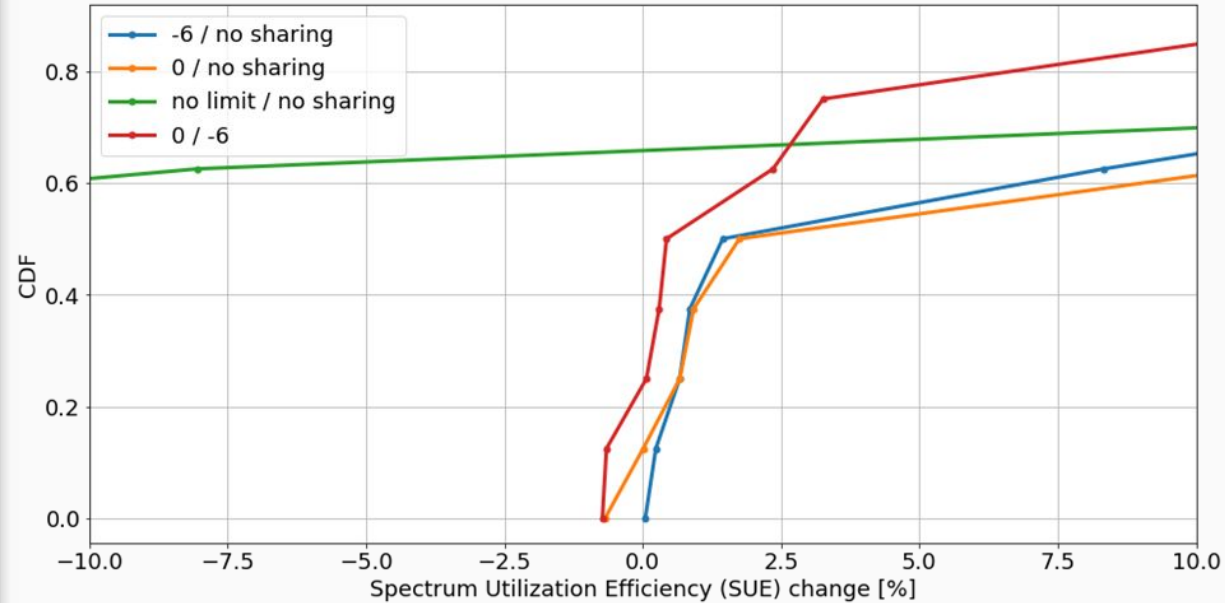


# Interference (I/N) and capacity





# Spectrum Utilization Efficiency (SUE)





- NTN - TN spectrum sharing
- No coverage overlap
- Significant coverage improvement
- Slight SUE improvement
- System can control the interference level
- With -6 dB or 0 dB I/N at TN UE practically no capacity loss in TN
- Demonstration taking into account LEO satellite movement in MWC23

