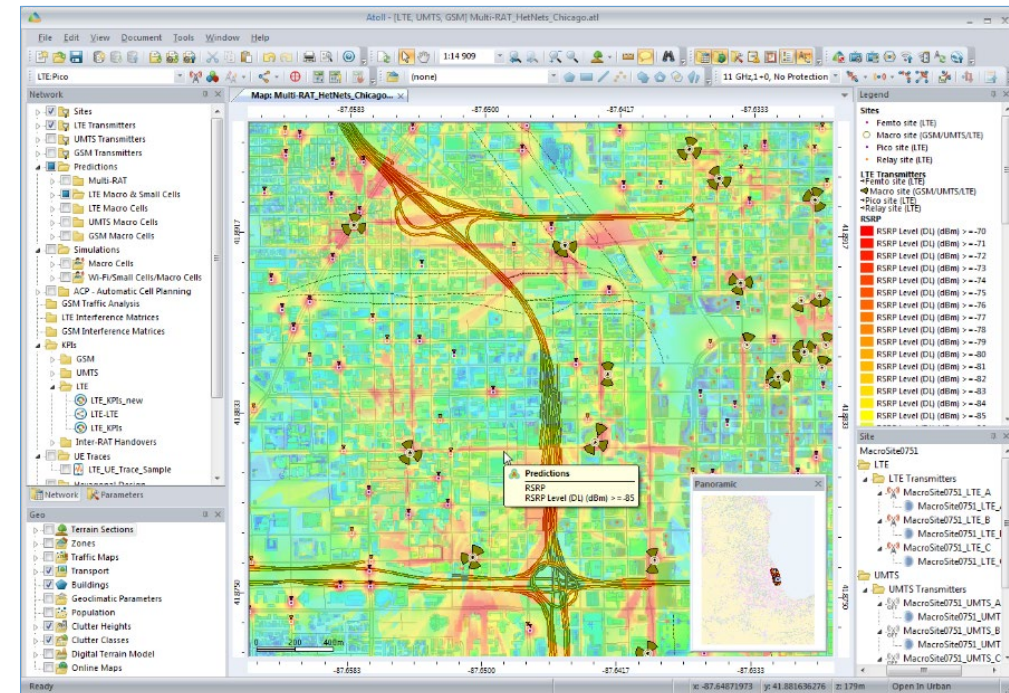


Atoll – Radio Planning and Optimisation

Company Profile

- Independent company founded in France in 1987
- Dedicated to radio planning & optimisation software development
- Atoll is a multi-technology wireless network planning and optimisation software
 - Design the future mobile operator networks
 - Optimise the existing mobile operator networks
 - Engineering of physical parameters (antennas, power, tilt, azimuth ...)
 - Engineering of technological parameters (frequencies, PCI ...)
 - Outdoor networks as well as indoor networks engineering
 - Automatic planning and optimisation capacities



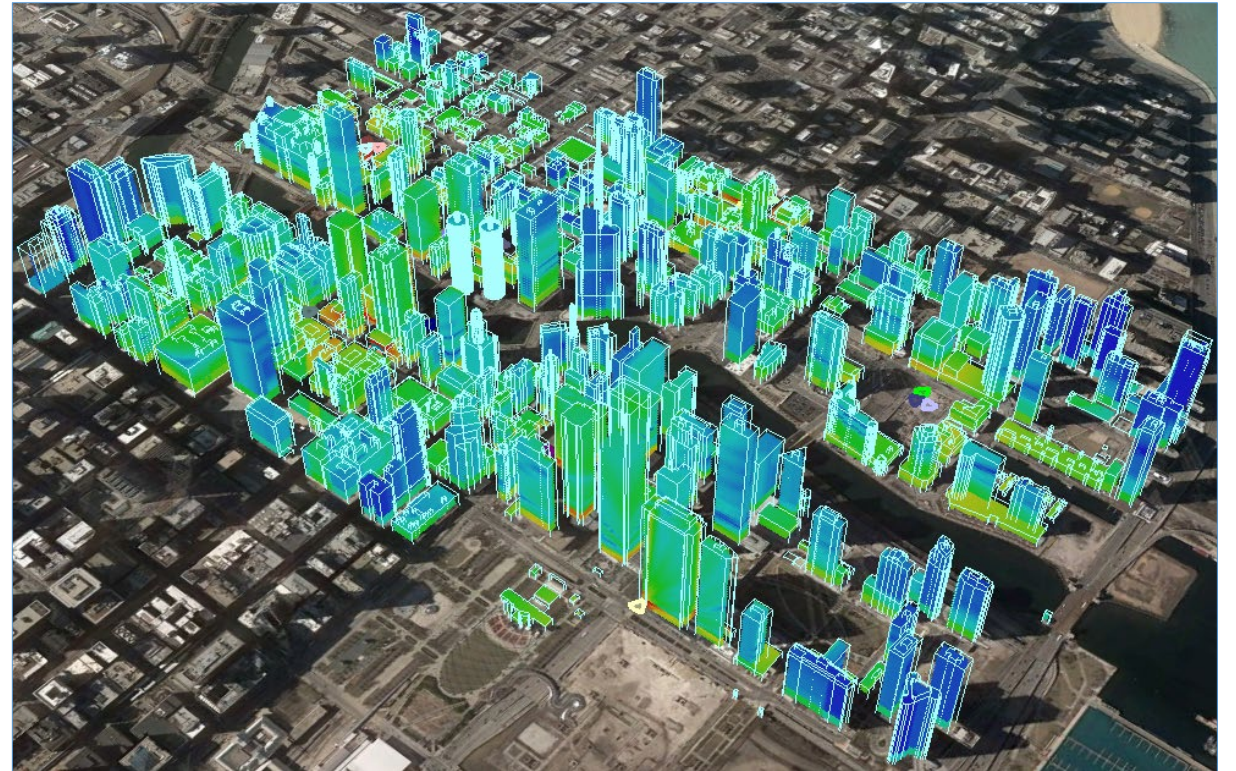
Atoll market share

Supports all major wireless technologies

- 5G NR
- LTE/LTE-Advanced Pro
- UMTS/HSPA
- GSM/GPRS/EDGE
- CDMA2000 1xRTT/EV-DO
- TD-SCDMA
- NB-IoT
- LoRa, Sigfox, and other LPWA IoT technologies
- Wi-Fi
- WiMAX

World leader on the market

- 9000+ licences in use worldwide
- 500+ customers in 140 countries



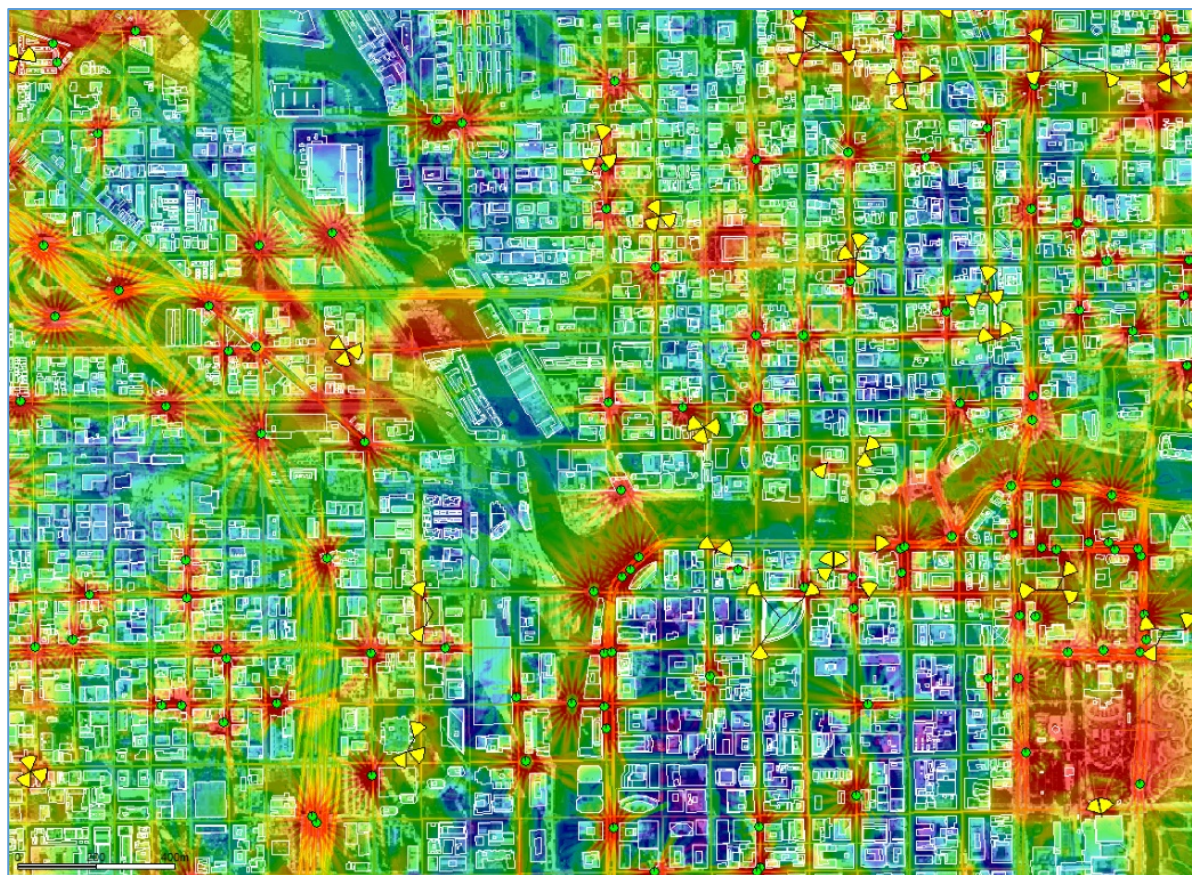
Atoll market share



Atoll market share

➤ By number of subscribers : 17 of the top 20 largest mobile operators worldwide use Atoll

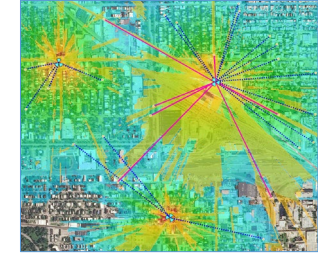
- 1/ China Mobile
- 3/ Reliance JIO
- 4/ China Telecom
- 5/ Vodafone Idea
- 6/ China Unicom
- 7/ America Movil
- 8/ Telefonica
- 9/ MTN Group
- 10/ VEON
- 11/ Orange
- 12/ Vodafone Group
- 13/ Telenor
- 15/ AT&T
- 17/ Axiata Group (3 out of 6 networks)
- 18/ Etisalat
- 19/ BSNL
- 20/ Verizon Wireless



Case Study : Automatic 5G deployment

- What is the optimised plan to reach the maximum area/population covered by 5G
- Less number of sites as possible (cost optimisation)
- Maximum benefit for users (throughput + KPI optimisation)
- No downgrade of the quality of the existing 2G/3G/4G networks
- No human actions, 24/7 calculation

Case Study : Automatic 5G deployment



4G network analysis

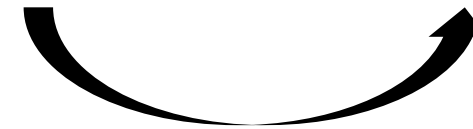
- ✓ 4G users location
- ✓ Network quality
- ✓ Sites location
- ✓ Equipments audit

Sites selection from 4G

- ✓ Population coverage
- ✓ Area coverage
- ✓ 4G Downgrade assessment
- ✓ Fulfil Technical criteria

Deployment plan

- ✓ Coverage prediction
- ✓ Report and Statistics
- ✓ Bill of Material
- ✓ Estimated cost



Thank you

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