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SUDARSHAN

A GEO-SPATIAL OPTIMIZATION PLATFORM FOR WIRELESS

WHERE DO I DEPLOY MY WIRELESS/IOT ASSETS?

in a complex environment with buildings and vegetation….

when I want to MAXIMIZE Resident Coverage…

MAXIMIZE Vehicle Coverage….

MAXIMIZE ROI

MAXIMIZE Customer Retention

MINIMIZE cost…

CONSTRAINED BY spectrum and regulations…

The challenge:

- Multi-objective
- Multi-constrained
- Multi-dimensional

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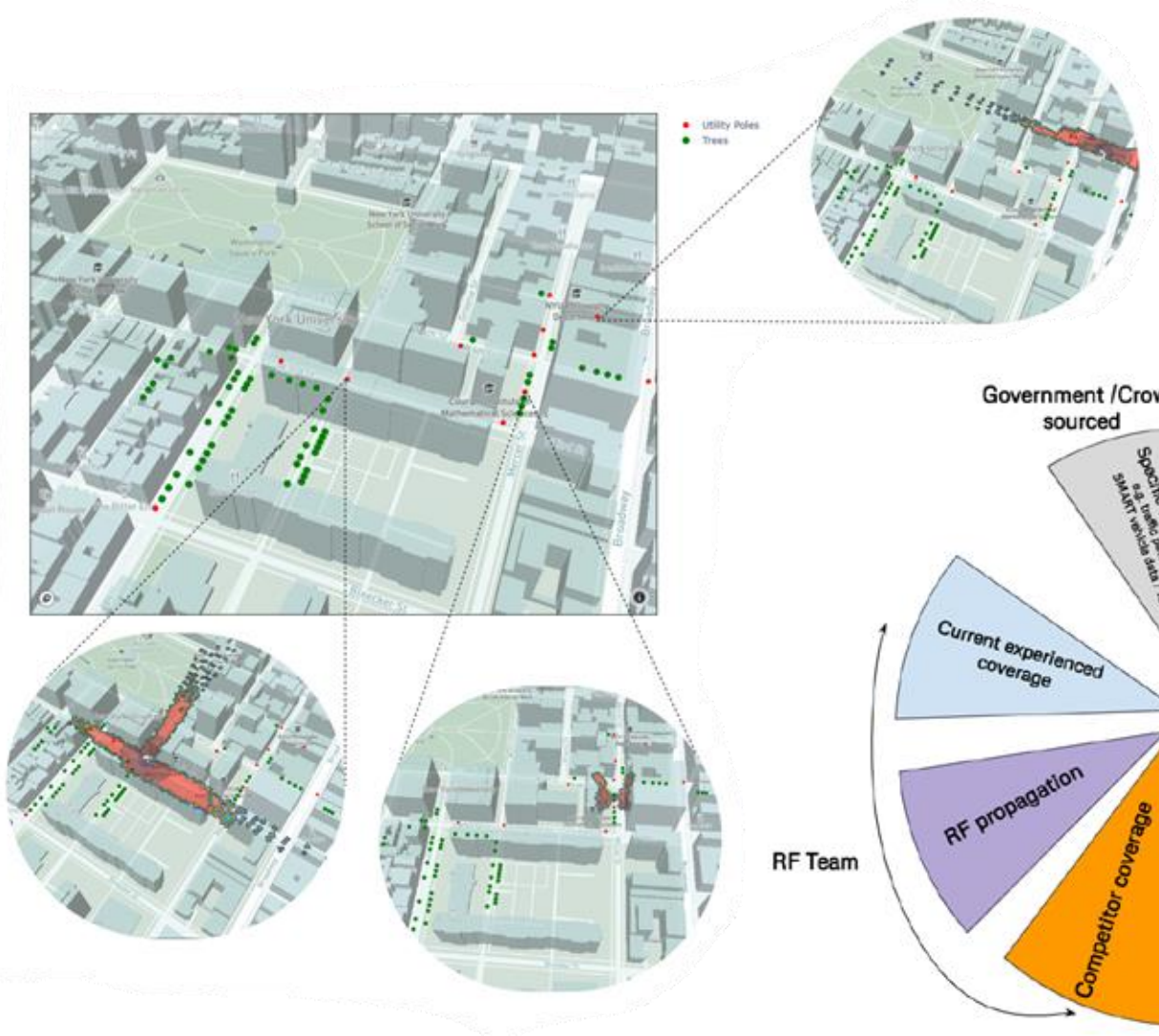
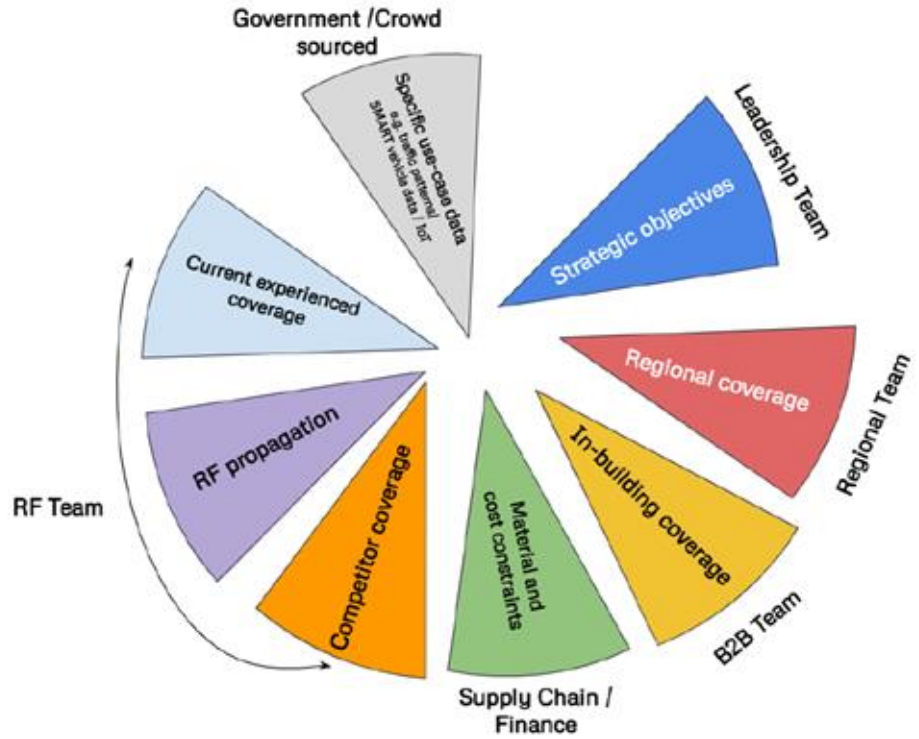
COVERAGE MAPS ARE JUST ONE PIECE OF THE PIE...





- Different stakeholders use different data and different systems or frameworks for analysis
- No integrated analysis and planning platform to capture inter-dependencies and constraints

Outcome - Inefficient CapEx and OpEx planning, missed opportunity of cost savings and quality of service

Our Solution:

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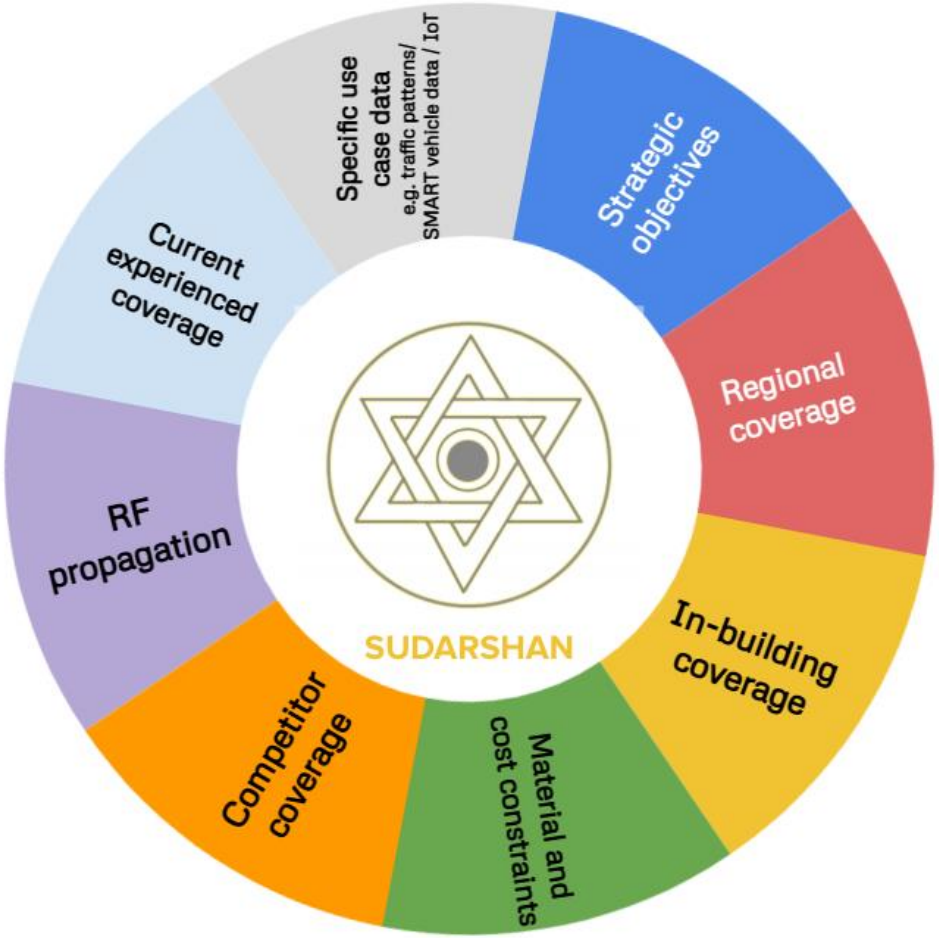
A platform that brings together all data sources to make AI-enabled smart decisions in optimal planning and deployment of wireless infrastructure



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WHAT MAKES US UNIQUE?

CUSTOMIZATION

Train your own ML/AI propagation models to solve your custom 5G deployment problem, e.g., FWA, Private 5G network, mm-Wave deployment, etc.

MULTIPLE OBJECTIVES

Simultaneously optimize multiple business objectives - Ability to “drag and drop” business objectives

FASTER

Near real time ray tracing using massive GPU parallelization - Enables placement of 5G towers anywhere

EASY TO USE

Simple design that gives customers the targeted information they need

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SUDARSHAN ROADMAP

VERSION 1

AVAILABLE NOW

- Lat, Long, Height
- LOS (mmWave)
- Datasets - Buildings, tress/foliage, utility poles, census, fiber backhaul
- Ability to upload custom datasets
- Select metros in the US
- Smart city planning – device placement, optimal utility poles

VERSION 2

COMING SOON

- Azimuth
- NLOS (midband), Repeaters
- Datasets - Road traffic, traffic light poles, towers
- Ability to train ML models
- All metros in the US
- Reporting and Dashboards

VERSION 3

COMING SOON

- Tower KPIs
- Post deployment optimization
- In building support
- Global metros, rural in the US
- Smart city planning
- IOT device placement

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SUDARSHAN - A geo-spatial wireless network optimizer platform that brings together all relevant data sources to make AI-enabled smart decisions to optimize the number and locations of wireless assets subject to constraints such as cost, presence of fiber backhaul, etc.

NO OF OPTIMAL CELLS : **3** NO OF UTILITY POLES : **3**

Pole Id	Latitude	Longitude	No Of Cells	Building Scores
11879	40.7564614	-73.9979209	1	13,218.11
8413	40.7553773	-73.9987295	1	69,582.67
8418	40.7558631	-73.9998412	1	57,991.30

TOTAL AREA
0.12 km²

CURRENT RANGE
0 Ghz (CBRS)

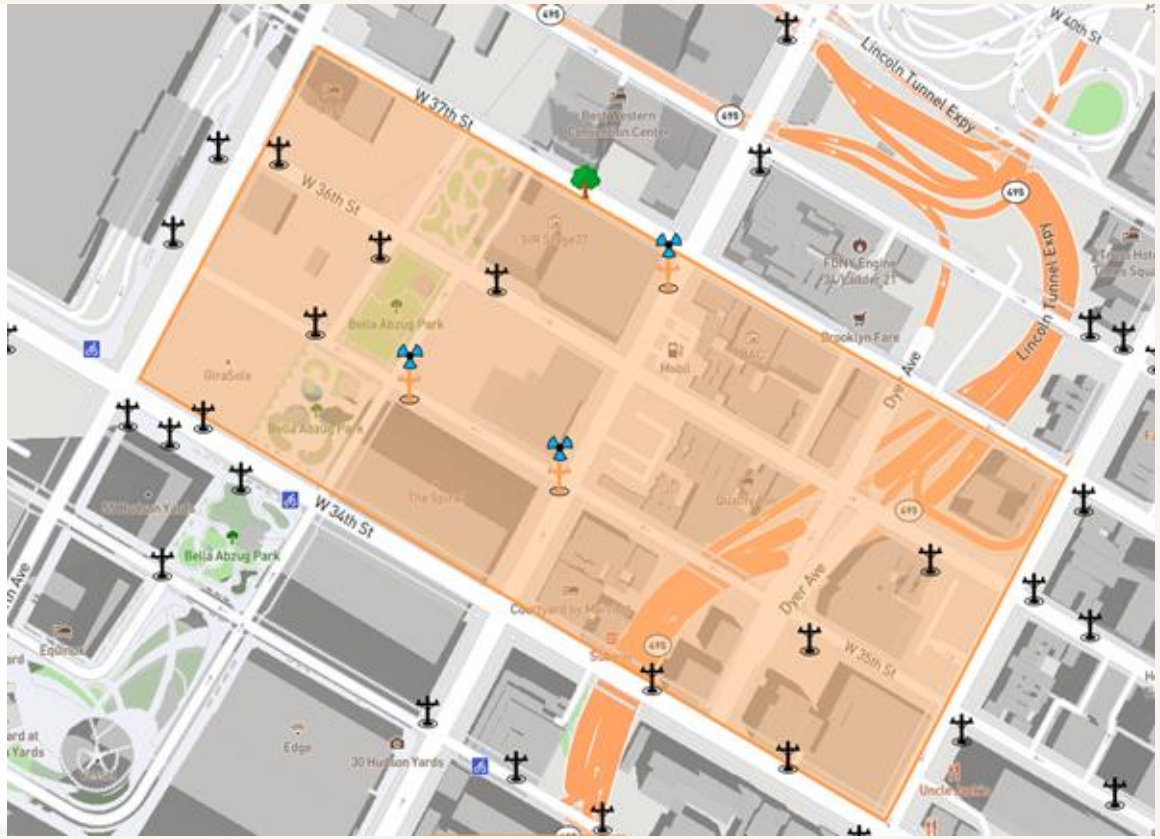
MAP GENERATED ON
03/12/2023 02:59 PM

LAYERS APPLIED

Trees/Vegetation | Fiber Map | Utility Poles

PARAMETERS APPLIED

Census | Min Dist To Fiber



Three optimal utility poles selected to maximize coverage for population in selected area

- Simultaneously optimizes multiple business objectives, allows customers to train their own ML/AI propagation models to solve custom 5G deployment problem.
- Optimization objectives - Maximize coverage for population or buildings Output - Optimal number and location of assets -cellular towers, utility poles or traffic light poles to mount antennas
- Constraints - Total cost of ownership (TCO = CapEx + OpEx), distance from fiber backhaul, etc.
- Factors - impact of foliage, etc.

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