Use Case
NETWORKS Technical Cost Modelling for multiband planning

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Strategic Cost Modeling for Mobile Network Operators

Project Goals

Enable mobile network operators to use frequency spectrum flexibly and efficiently.

NETWORKS Approach

- Import Input data (excel format)
- Planning is done separately for each technology, geographical area (region) and morphology type (dense urban, urban, suburban, rural)
- Automated coverage and capacity planning
- CAPEX and OPEX modeling in NETWORKS

Client Benefits

- Identification of activities required to improve
- Scenario analysis providing cost efficient solutions
- Sensitivity analysis showing reducing risk of investment

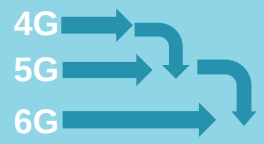
The solution supports mobile operators in the following use cases

Multi Technology – Multiband Planning

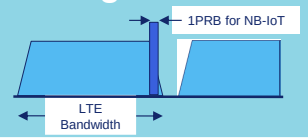
Frequency bands

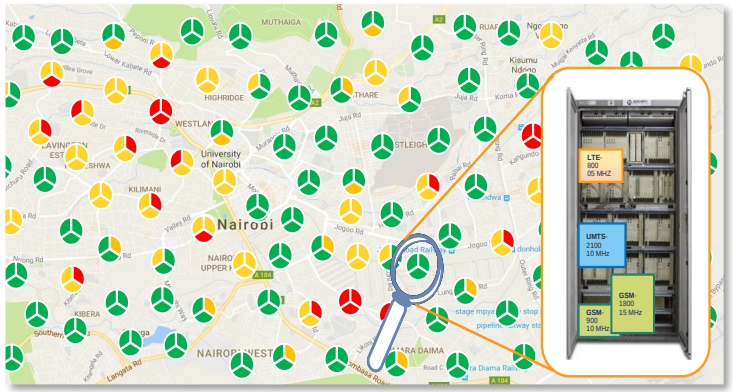
Carrier Aggregation Planning

Refarming Planning



NB-IoT / M2M Planning





Thousands of base stations located in each region considered individually

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NetWorks TCM enables customers to plan network development, calculate costs and evaluate strategic business targets.

Input data (excel format)

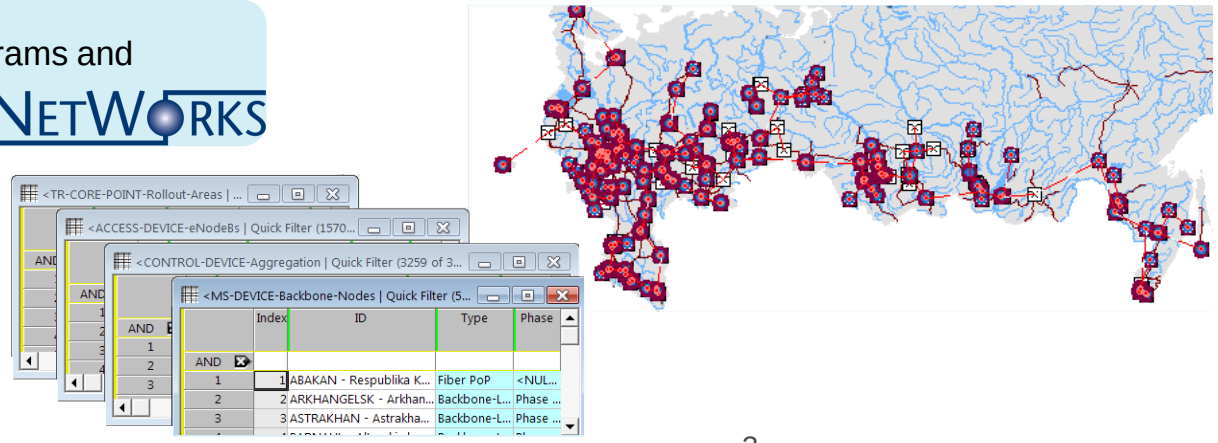
- Geographical Data
- Brownfield Data
- Market Demand Data
- Dimensioning Parameters
- Type of Nodes and Pricebook
- Reference Architecture

Planning process

CAPEX & OPEX modeling in NETWORKS

Output (excel and jpg format)

Network Diagrams and Tables NETWORKS



Raw Table Outputs (CAPEX, OPEX, BoQ) XLS

Application w/out Calculation Functions NETWORKS VIEWER

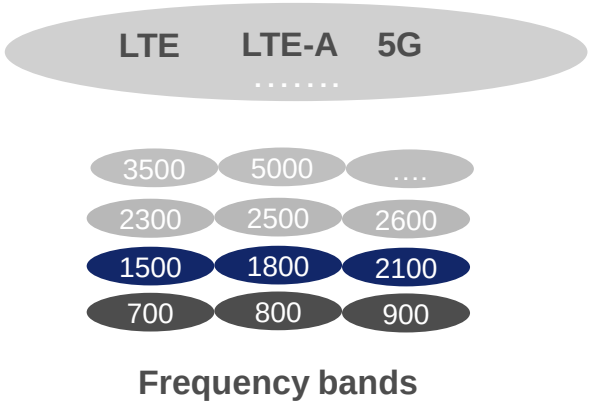
DETECON CONSULTING

NetWorks TCM supports multiband planning to reflect the needs of mobile operators to use frequency spectrum flexibly and efficiently.

Multi Technology – Multiband Planning

Operators have deployed several technologies (3G,4G,5G,Wi-Fi) using variety of frequency spectrum.

- Any technology
- Any frequency
- Any bandwidth

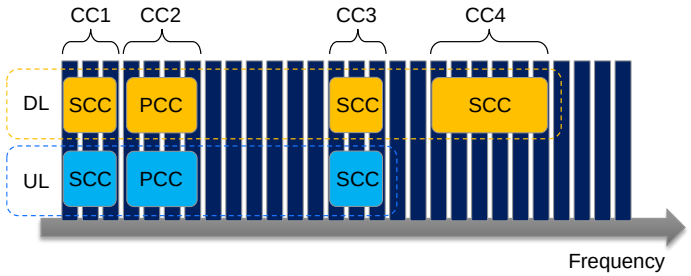


Frequency bands

Carrier Aggregation Planning

To answer demands for higher user peak rates operators deploy 5G LTE in carrier aggregation (2cc,3cc,4cc)

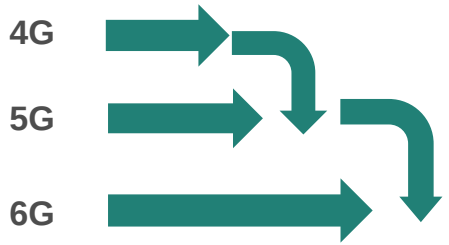
- Flexible planning rules matching operator needs
- Extension of coverage planning with CA



Refarming Planning

Frequency spectrum is vital resource for operators. Flexible use per technology allows to cover traffic demands

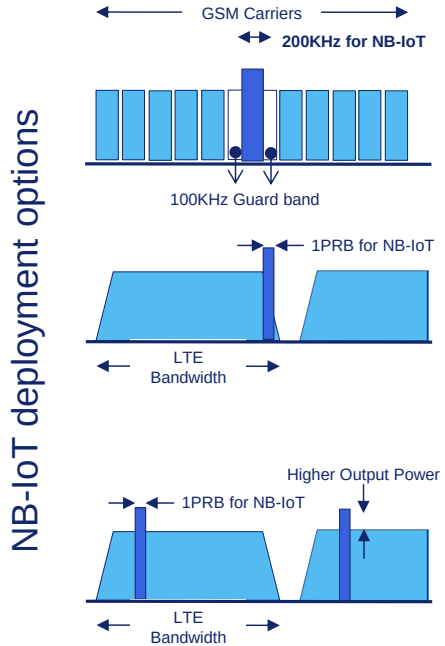
- Plan refarming steps according to operator needs
- Differentiate refarming upgrades regionally



NB-IoT / M2M Planning

IoT strategies are becoming very important to operators.

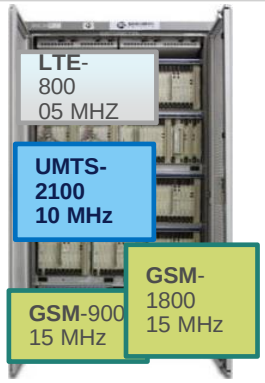
- Introduce NB-IoT technology
- Plan required deployments according to coverage plan and device density



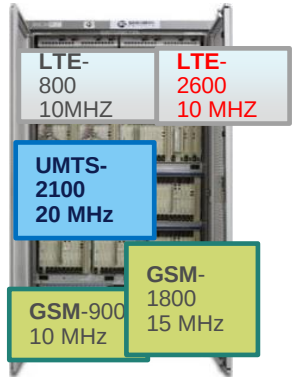
Each technology has a list of bands with specific attributes which can change in time due to capacity demand and refarming strategy.

Year 1

Initial BS configuration

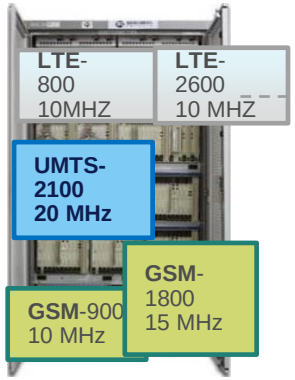


Resulting BS configuration

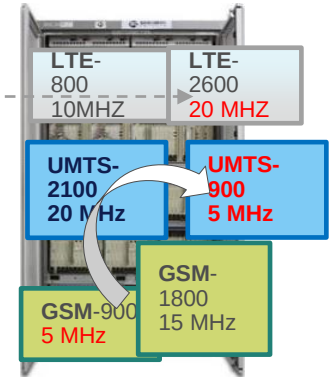


Year 2

Initial BS configuration

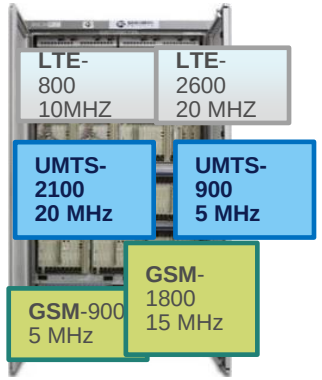


Resulting BS configuration

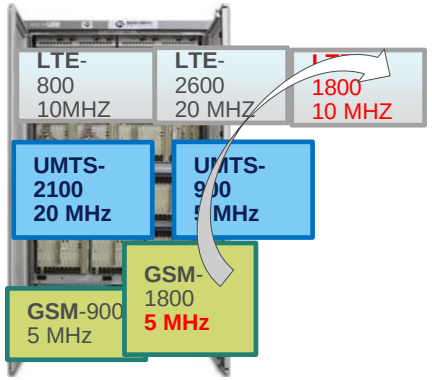


Year 3

Initial BS configuration

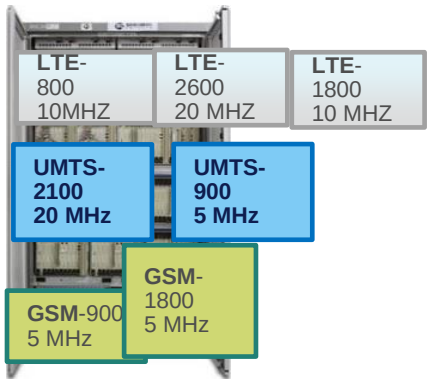


Resulting BS configuration

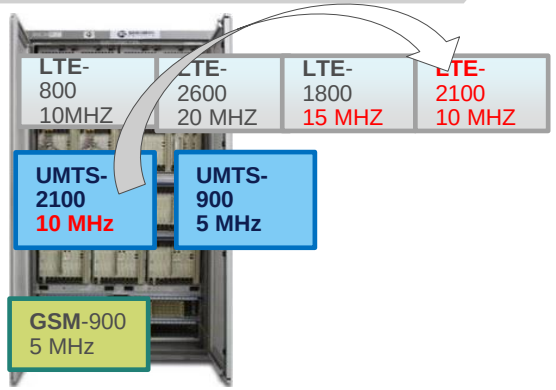


Year 4

Initial BS configuration



Resulting BS configuration



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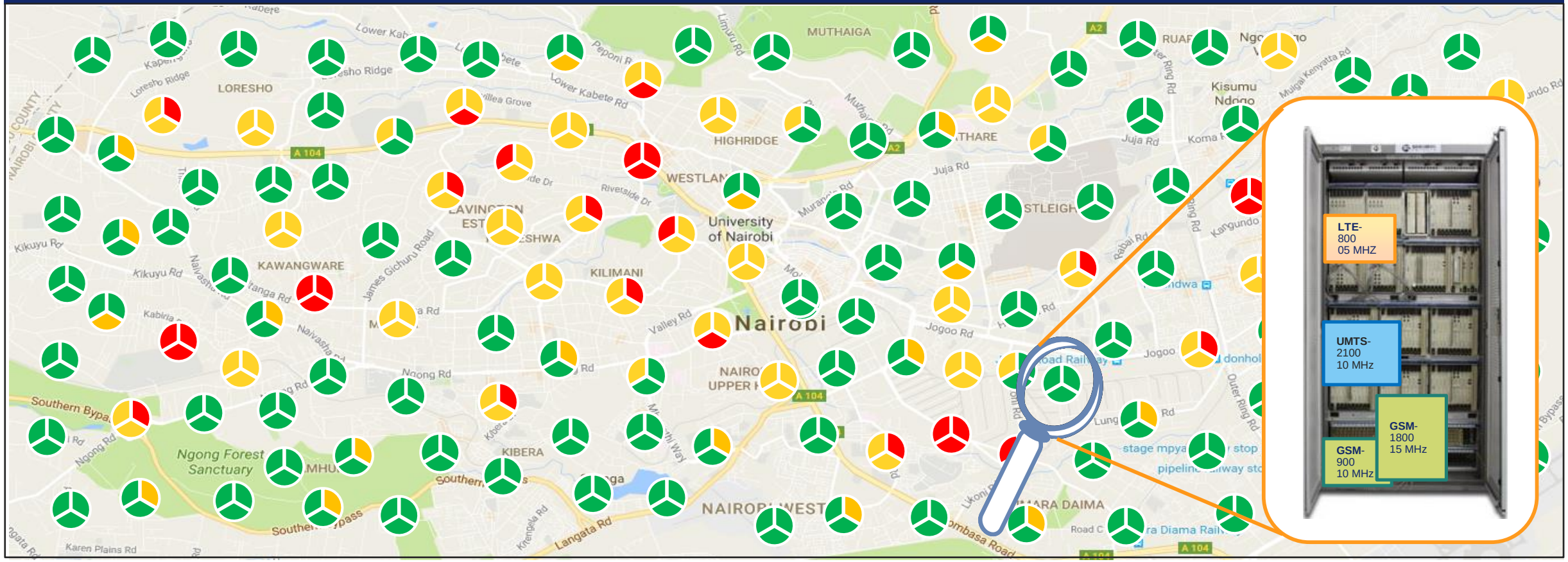
Planning can be done for each single cell of the base stations located in the considered geo region based on cell's individual utilization.

Automated planning allows to consider individual aspects of radio cells.



Thank you.

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