

"CellSens helped us to become "Best in Test" and achieve a world highest score in the Drive Test P3 Benchmark. It delivers network issues straight to my engineers and enables fast and efficient troubleshooting."

-Radio Access Manager, T-Mobile Netherlands

**WE'RE
HERE TO
HELP YOU**



WE UNDERSTAND THE NEEDS OF YOUR ENGINEERS

Since Cellsens was founded in 2010, we've come to work each day with one objective: **taking the guesswork out of network optimization.**

Our passion goes beyond just delivering data. We work tirelessly to turn complicated network data into actionable insights – giving network providers the tools needed to make informed decisions that ultimately lead to improved network performance.

Our success is not only due to the quality of our work; it's down to attitude, our approach, and the way we treat our clients.

CellSens clients are typically mobile network operators in various countries and continents, predominantly Europe, Middle East and Africa. Even network equipment vendors such as Nokia and Huawei like to use CellSens tooling for its ease of use.

OUR PLATFORMS



CIOS

The CellSens Integrated Optimization Suite is a single CM/PM/GIS Platform for RAN Engineers.

Correlating a broad range of indicators from PM, CM, FM, GIS, Drive Test & CEM, the Application produces a concise message to users indicating specifically what is going right and what is going wrong in the network.

It then transforms this data into actionable tasks to help engineers focus on the things that matter.



DATAMART

The CellSens DataMart Software Client (CDM) lets you quickly visualize all available information from any NE's, not just the RAN.

It is suitable to query any counter, raw or aggregate data in the database.

Build detailed performance reports and dashboards from any technology, network element or network vendor.

Task scheduling, Dashboarding and mixing data from different Network elements is all possible with DataMart



WEB REPORT

The CellSens Web Client offers quick access to advanced reporting.

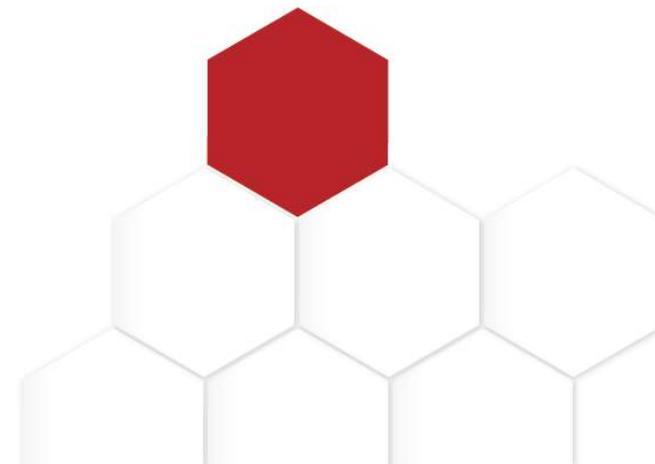
You are able to consolidate, search, visualize and analyze all of your data for unprecedented insight.

Customized web reports can be accessed from anywhere, with ease.

The Web Client is suitable for high level Dashboarding but also for data mining or ad hoc analysis on any data source.



GET TO KNOW YOUR NETWORK





CELLENS INTEGRATED OPTIMIZATION SUITE

NETWORK OPTIMIZATION

Correlating a broad range of indicators from PM, CM, FM, GIS , Drive Test & CEM, the Application produces a concise message to users indicating specifically what is going right and what is going wrong in the network. It then transforms this data into actionable tasks to help engineers focus on the things that matter.

CONFIGURATION MANAGEMENT

CellSens Advanced Configuration Mapping offers neighbor definition mapping to/from any technology including handover statistics and settings. Additionally, this tool features graduated theme enhancing visualization of statistics on multiple selectable KPs, ranged theme on cells on multiple selectable KPIs, Top X filtering, and missing neighbor detection and plotting.

PERFORMANCE MANAGEMENT

Predefined Reports, KPI's, Top N lists , inconsistency checks and more -> Straight out of the box.

We believe the end user should be able to start working straight away and not waste time defining reports and KPI.

One click and a few seconds brings about hundreds of KPIs and charts in a pre-organized manner.

CUSTOMER EXPERIENCE MANAGEMENT

Monitor and analyze the customer experience and correlate this with Network element performance data.

Drill from PLMN to individual IMSI's or handset showing key usage and performance metrics.

Make customer complaints a starting point for investigating. Visualizing it's activity in multiple domains enhances problem solving and decreases the amount of time needed to fix any issues that may arise .

KEY FEATURES

27629	20161012	Open	HUAWEI 3G	HUAWEI 0	Albina_UMTS	510	0	1	0
27630	20161012	Open	HUAWEI 3G	HUAWEI 0	Alkmaar_UMTS	455	0	1	0
27634	20161012	Open	HUAWEI 3G	HUAWEI 0	Moengo_UMTS	255	0	1	0
27631	20161012	Open	HUAWEI 3G	HUAWEI 0	De_Hulp_UMTS	175	0	1	0
27633	20161012	Open	HUAWEI 3G	HUAWEI 0	Kawehamkan_UMTS	165	0	1	0
27490	20160820	Open	HUAWEI 3G	HUAWEI 0	ZUID_UMTS	155	0	1	0
27637	20161012	Open	HUAWEI 3G	HUAWEI 0	Zonnebloemstraat_UMTS	135	0	1	0
27593	20160923	Open	HUAWEI 3G	HUAWEI 0	Nason_UMTS	125	0	1	0
27599	20160926	Open	HUAWEI 3G	HUAWEI 0	Hannaslust_UMTS	125	0	1	0
27627	20161011	Open	HUAWEI 3G	HUAWEI 0	Ellenweg_UMTS	125	0	1	0
27628	20161011	Open	HUAWEI 3G	HUAWEI 0	Vabi_UMTS	115	0	1	0
27521	20160829	Open	HUAWEI 3G	HUAWEI 0	Albina_Heuvel_UMTS	115	0	1	0
27636	20161012	Open	HUAWEI 3G	HUAWEI 0	Winston_Churchillweg1_UMTS	110	0	1	0
27635	20161012	Open	HUAWEI 3G	HUAWEI 0	Pakira_UMTS	105	0	1	0
27632	20161012	Open	HUAWEI 3G	HUAWEI 0	Gonini_Molo_UMTS	105	0	1	0



Ticket History Ticket Details **Site History**

HUAWEI 3G	Site Score - History
600	Objects: Albina_UMTS
500	

Ticket Root Cause

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SMART WORST SITE LIST

PROMOTING VALUE-BASED OPTIMIZATION

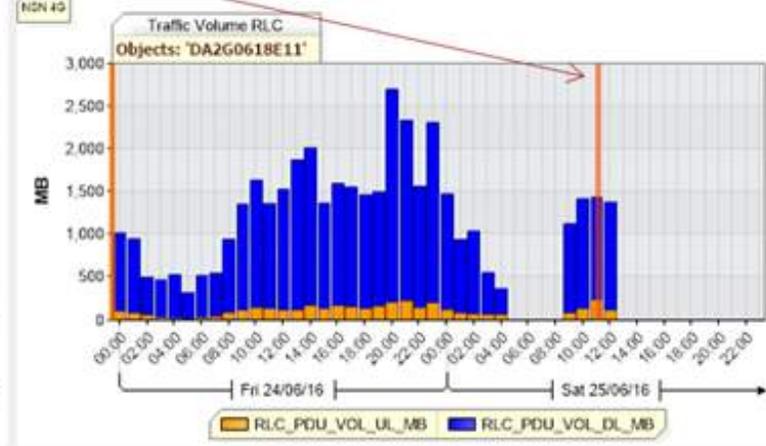
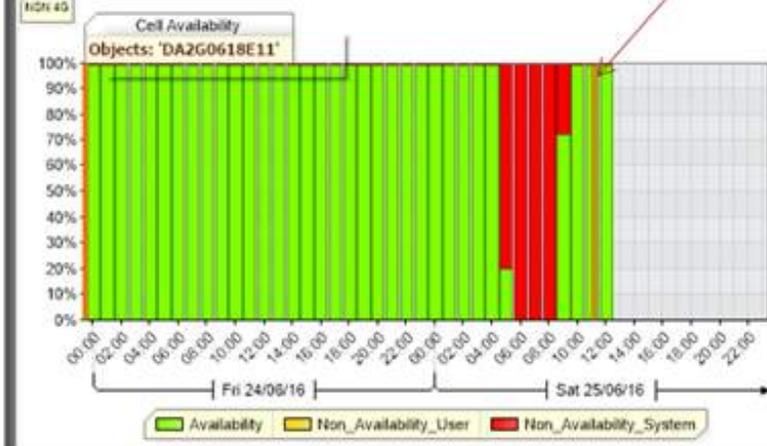
CellSens analytics features a daily worst site list that combines multi-vendor, multi KPI, 2G, 3G and 4G into a single “Worst Site” list. The score based system eliminates the need to sift through data and delivers only the issues that matter to you. In addition to identifying issues, CellSens analytics assists in determining the root cause of issues (Radio, Transport, etc.). This allows you to spend less time identifying issues, and more time addressing them.



DRIVE TEST ANALYSIS

MEASURE AND ASSESS THE COVERAGE, CAPACITY AND (QOS) OF YOUR NETWORK

CellSens Optimization platform can be augmented with drive test data from either raw drive test files or existing customer databases. Radio information of specific drive tests or even entire campaigns are loaded quickly due to geo-aggregated storage. Failure events are automatically detected, presented and made ready for analysis.



DataGrid Notes Tickets Alarms Changes

Get Tickets Clear Charts

Tickets for LA2G0618E

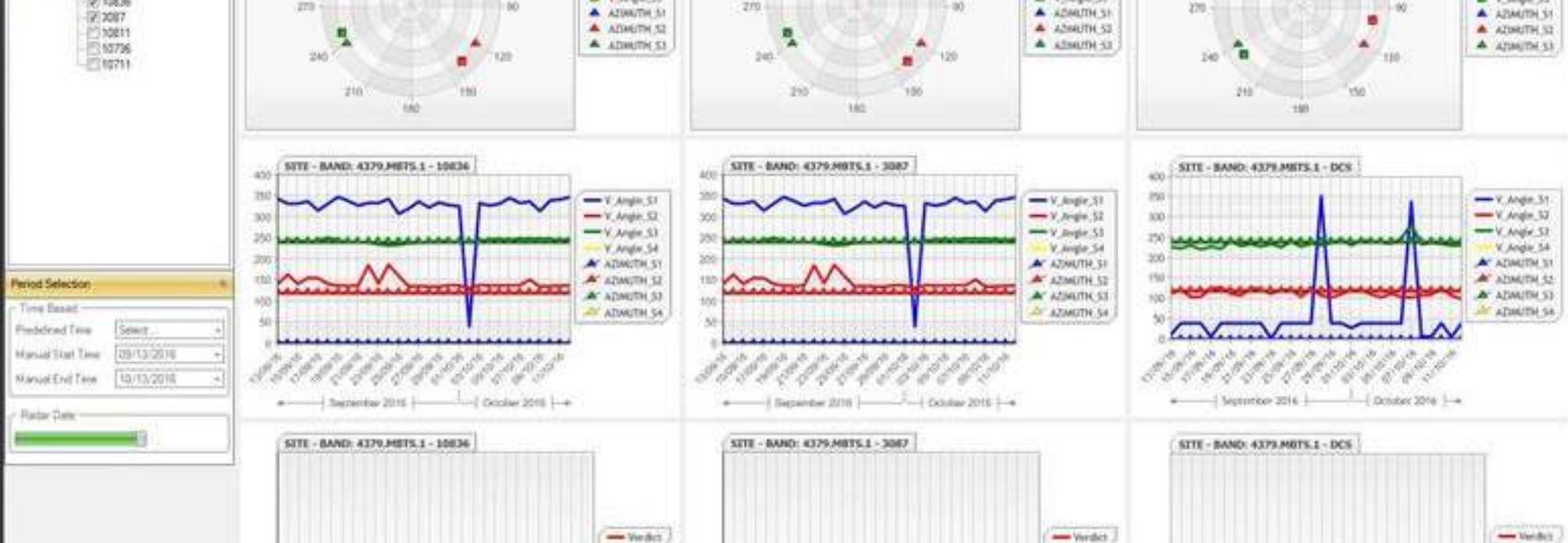
TTID	TTWO	SteInfo	ITENAMEOSS	MARKET	CICLASS	PRIO	SYMPTOM	TECHNOLOGIES	CAUSE	DESCRIPTION
1243600	A2G0618E	A2G0618E	L2G0618E	TP	BTS	2	Service Impacting	LTE	HARDWARE; Other	A2G0618E_Nokia_eNodeB Site or Sector Down with no Trouble Ticket
12436368	A2G0618E	A2G0618E	L2G0618E	TP	BTS	2	Service Impacting	LTE	Refer Master Cause	A2G0618E_Nokia_eNodeB Site or Sector Down with no Trouble Ticket

ALARM CORRELATION

CORRELATE MULTIPLE NETWORK ALARMS TO IMPROVE NETWORK SURVEILLANCE AND FAULT MANAGEMENT

Integrating a Network element alarm feed into CellSens gives users direct insight of the network status on the map, as well as on the objects being queried. Quicklinks allow fast visualization of the detailed alarm data.

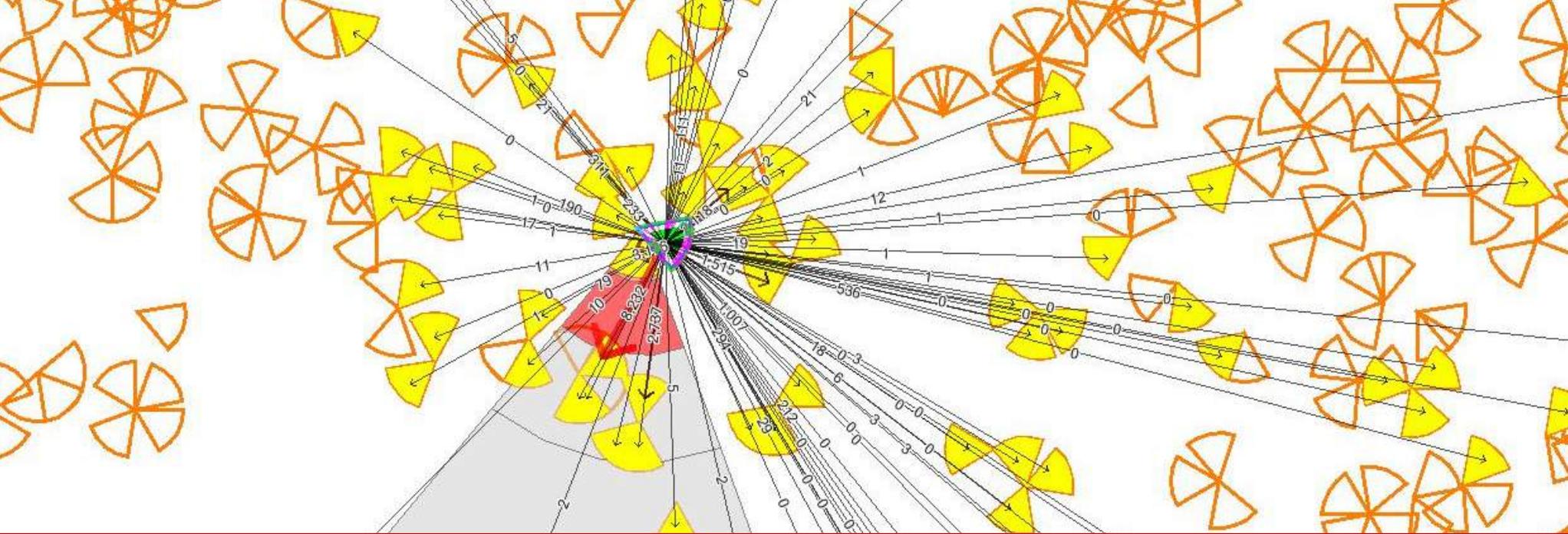
To maximize efficiency it's possible to interface to external Trouble Ticket solutions giving direct insight into status of objects of interest, including possible Quicklinks for detailed ticket data.



CROSS FEEDER DETECTION

POINTED IN THE RIGHT DIRECTION

Cross Feeder Detection uses measurement data to determine if a sector might be installed incorrectly. It is common that sectors swapped or rotated. With Cross Feeder Detection users can ensure sectors are pointed in the correct direction for optimal performance

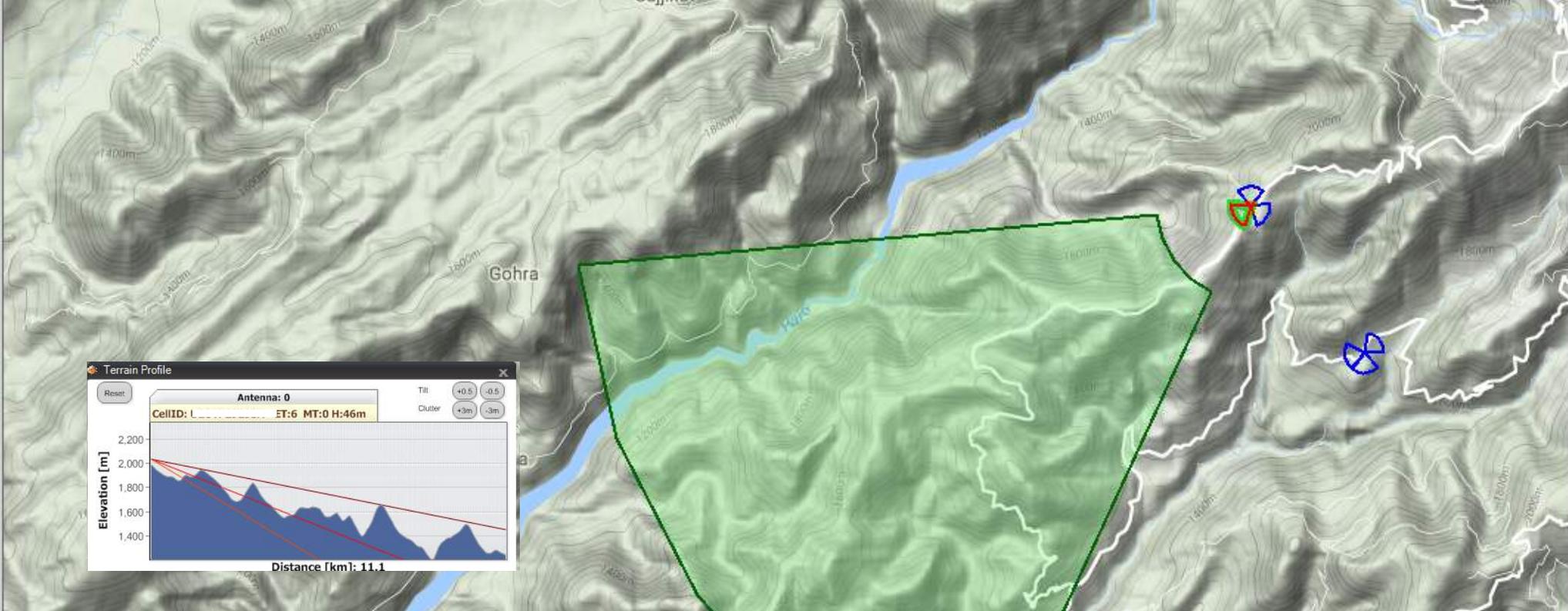


ADVANCED CONFIGURATION MAPPING

MULTI-VENDOR OSS CM DATA PROCESSING

CellSens Advanced Configuration Mapping offers neighbor definition mapping to/from any technology including handover statistics and settings.

Automated inconsistency reports highlighting issues to network engineers and single click configuration data of cell objects showing customizable templates.

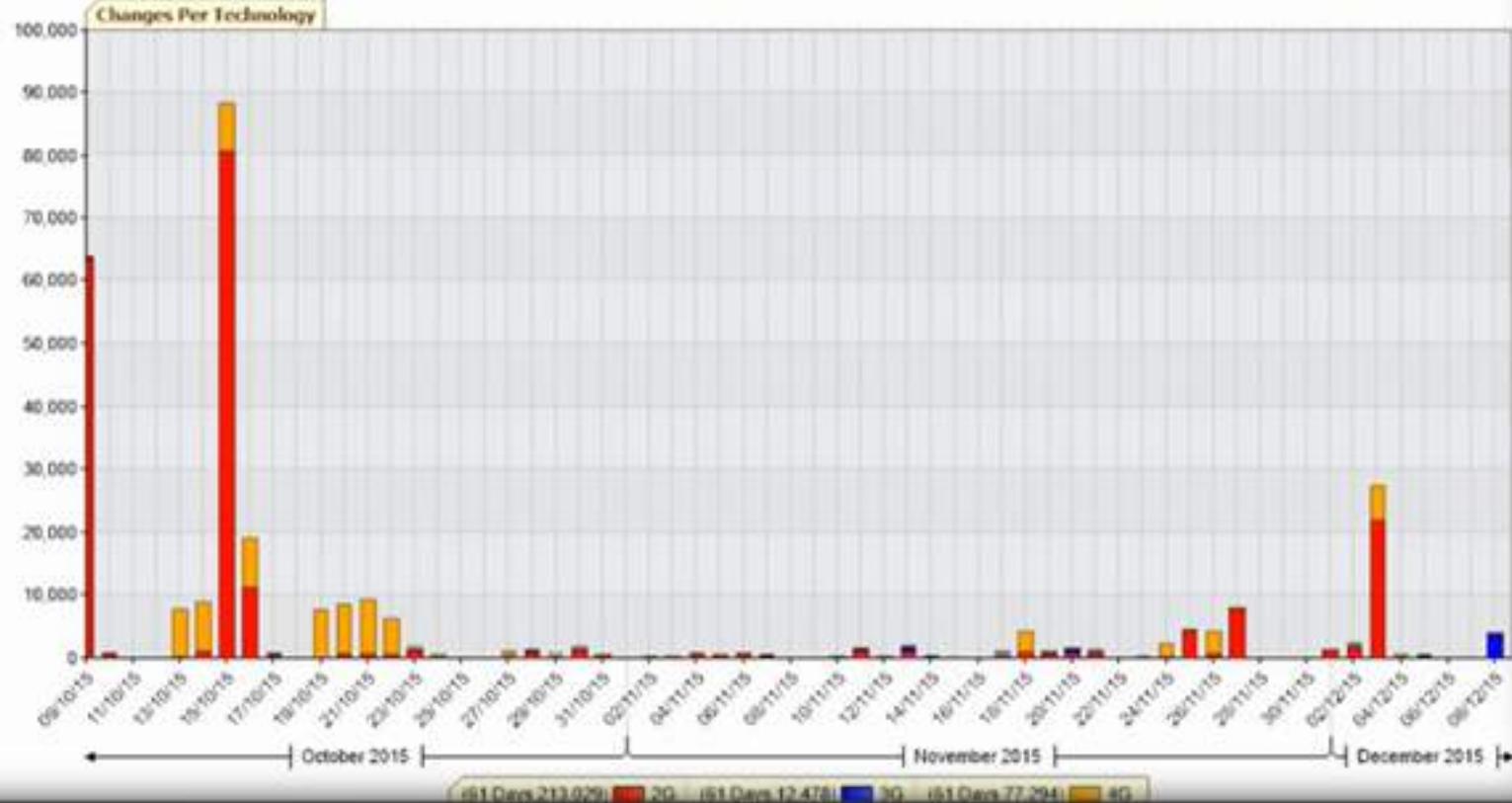


ANTENNA FOOTPRINT AND TILT

DETERMINE OPTIMAL TILT CONFIGURATIONS

Create a visual approximation of the main beam coverage footprint based on Antenna height, tilt and terrain profile.

Continually review tilts, determine logical neighbors, introduce new sites with correct initial configuration and neighbor settings, as well as determine focused areas for capacity and coverage optimization saving engineering teams time and money.



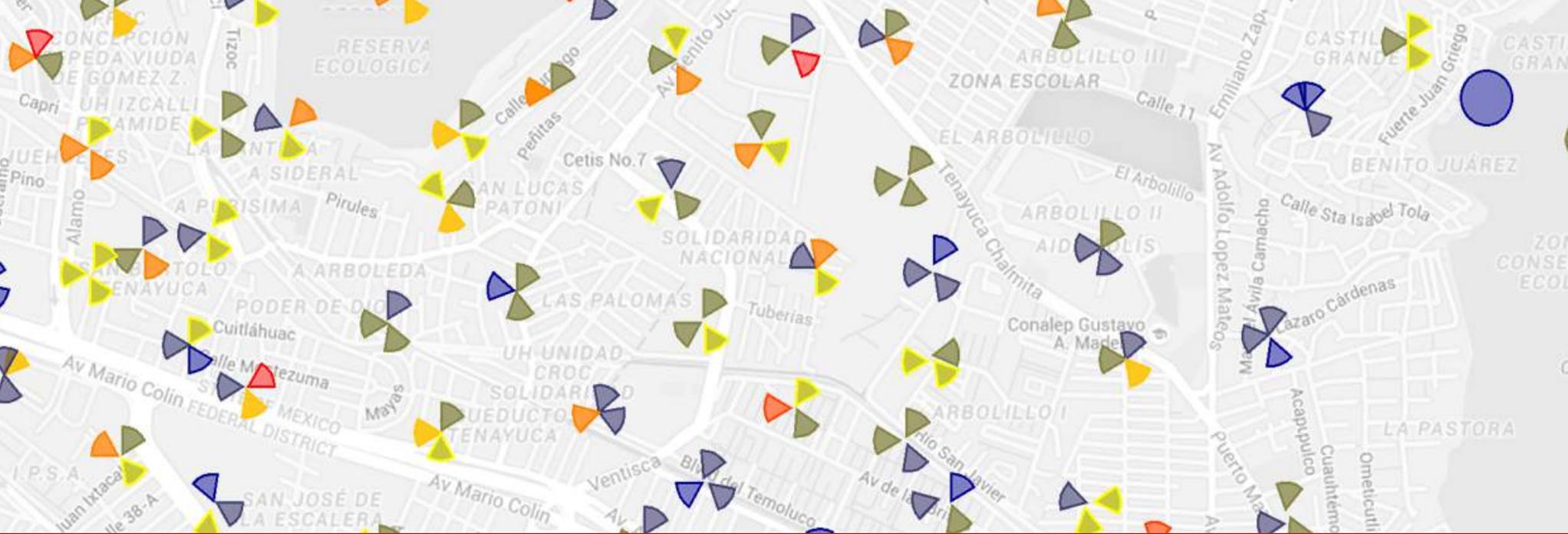
PARAMETER HISTORY

LOG EACH PARAMETER CHANGE ON EACH CELL ON A DAILY LEVEL

The CellSens Parameter History feature registers the changes of any cell related parameter for any Vendor, on a daily basis. This module visualizes the changes from charts, quickly fetching statistics based on changes for easy before/after analysis. It has the ability to filter on time, parameter(s) and objects.

“We found that more than 80 percent of mobile operators worldwide are using SON for 3G/HSPA/HSPA+ optimization.”

-Stéphane Téral, Senior Research Director, Mobile Infrastructure and Carrier Economics, IHS Markit



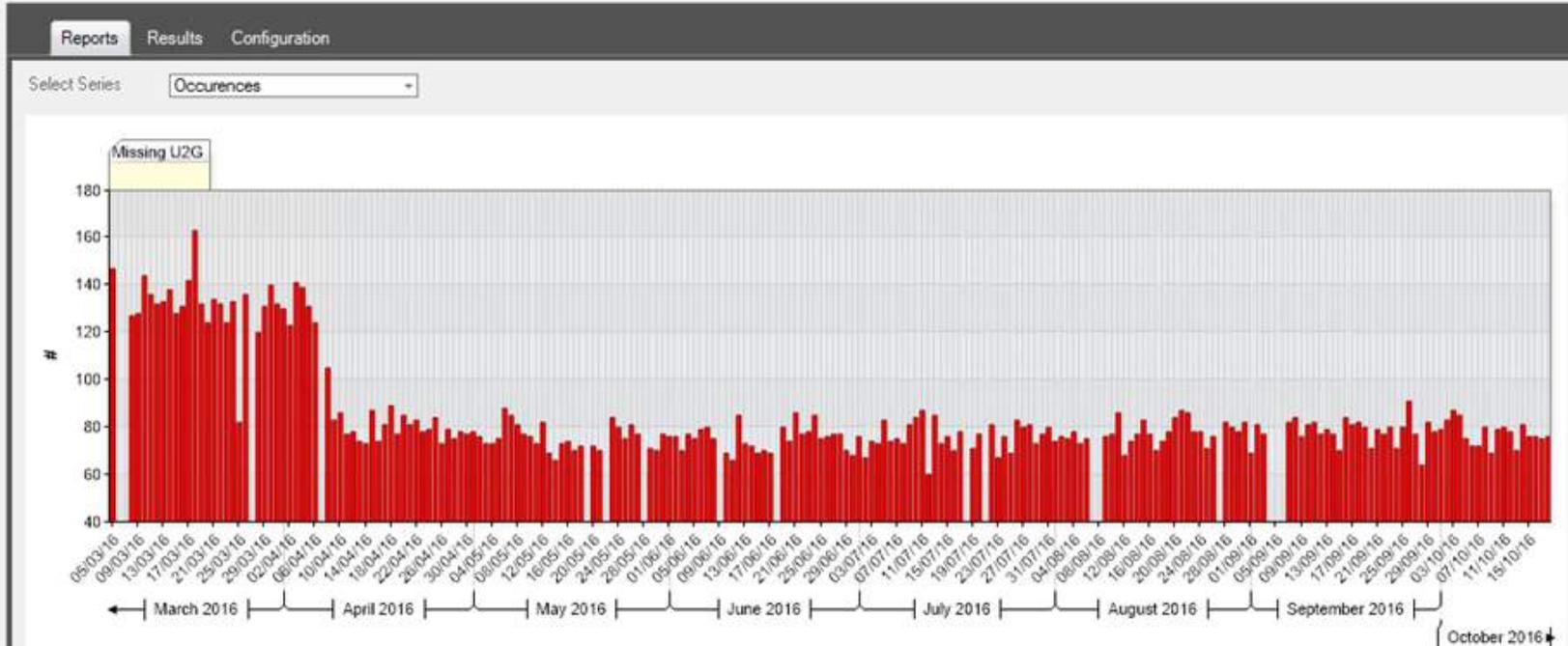
SON - NEIGHBOUR MANAGEMENT

QUICKLY IDENTIFY MISSING NEIGHBORS

One of the more labor-intensive areas in existing radio technologies is the handling of neighbor relations for handover. The CellSens platform simplifies the process by automatically identifying missing neighbours and generating weekly lists to add/delete.

Based on an “optimized layer” like the 3GF1-3Gf1, the platform can “copy” this neighbor grid to any other technology layer. For example, the user can copy 3GF1-3Gf1 to LTE-F2.

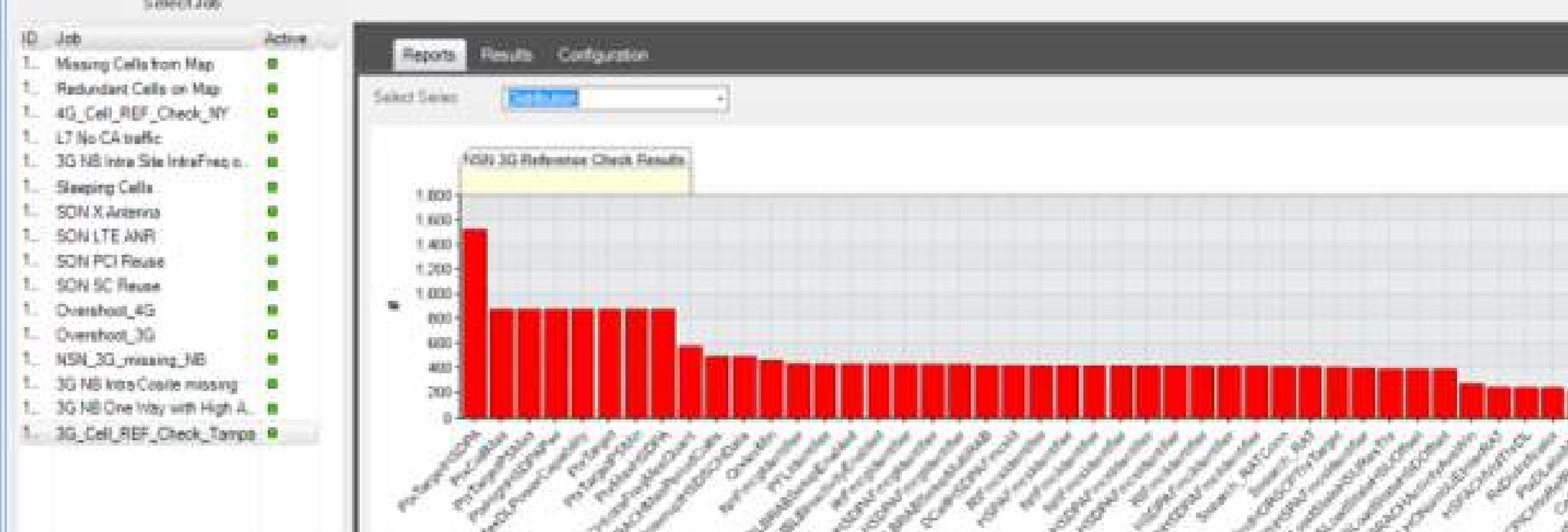
ID	Job	Active
11	HO 3G UINTRA 1 Way	●
12	HO 3G UINTRA Missing	●
14	CM 3G UINTRA NB cosecto...	●
16	CM 3G UINTRA NB cosite...	●
17	CM 3G UINTRA NB count	●
18	Cells in OSS but not on Map	●
22	CM 3G U2GNCELL count	●
36	3G_UINTRA_Missing	●
37	3G_U2G_Missing	●



SON - INCONSISTENCIES

A DAILY CHECKUP FOR YOUR NETWORK

The SON-Inconsistencies feature performs daily checks for parameter inconsistencies such as PSC collisions, intra site missing neighbors, parameter reference checking. It can also detect sleeping cells and cells without traffic.



SON - REFERENCE CHECKING

TEMPLATE PARAMETER CHECKING

SON—Reference Checking is one of the reports inside the SON Inconsistency Module. It runs each day and checks each cell against a national parameter template. This template (or a reference cell) must be provided by the operator.

A grayscale photograph of a person in a business suit holding a smartphone. The person's hands are visible, and the phone is held in a way that suggests they are using it. The background is dark and out of focus. The text 'DATAMART' is overlaid in a bold, red, sans-serif font, centered over the phone. Below it, the tagline 'INSIGHTS AT YOUR FINGERTIPS' is written in a smaller, white, sans-serif font.

DATAMART

INSIGHTS AT YOUR FINGERTIPS

PERFORMANCE MANAGEMENT

Independent of vendor, technology layer or data format, our DataMart software client (CDM) lets you quickly visualize all available information from your NE's.

Unlike the CIOS platform its focus lies not in the RAN but can query counters for any element

A single dashboard allows users to mix and match vendors and technologies for a comprehensive overview.

The DataMart platform is able to query any counter, raw or aggregated data in the database.

It features drag and drop report building, multi-technology dashboards, easy scheduling and KPI building.

It also enables users to schedule and export automated reports.

DATAMART PLATFORM





WEB CLIENT

QUICK ACCESS TO ADVANCED REPORTING

WEB-BASED MANAGEMENT DASHBOARDS

The CellSens Web Client platform generates web dashboards displaying easy to comprehend, high-level network data.

Advanced BI reporting (using YellowFin BI tool) allows users to consolidate, search, visualize, and analyze all data sources for unprecedented insight.

Access data and generate reports from anywhere, with ease.

Automate business processes and increase the efficiency of operations.

Suitable for high level dashboarding but also data mining and ad hoc analysis on any data source.

WEB CLIENT



"What I like about CellSens as a company is the support. They are thinking together with the Operator to solve problems, streamline processes and customize reporting needs."

-Team Leader, Telesur



CELLSENS

GET TO KNOW YOUR NETWORK

THANK YOU

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