
TEMS™ CellPlanner 9.0

Release Note

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1 About the 9.0 Release

TEMS CellPlanner is an advanced tool for designing, planning, and optimizing 2G, 2.5G, 2.75G and 3G networks. Developed by Ascom, TEMS CellPlanner provides superior planning and optimization capabilities to save time and money during network deployment.

TEMS CellPlanner provides full support for voice and data services in WCDMA, GSM, and WiMAX and meets the needs of today's complex radio networks. It features open interfaces and a flexible architecture. TEMS CellPlanner can be used in all phases of a radio network's life cycle, from early planning to the most complex optimization.

A key concern for the experienced RF network planner is the accuracy of the network design, since accuracy reduces the number of sites and increases capacity in the network. Ascom understands this concern and has focused on developing algorithms that generate accurate and proven results.

For more information about TEMS CellPlanner, please see TEMS CellPlanner 9.0 Technical Product Description. For information about previous releases, please refer to the corresponding Release Notes.

1.1 TEMS Technical Support web pages

Please visit our Support web site, www.ascom.com/networktesting, Tech Support, for the latest technical information, FAQs and downloads of patch releases.

1.2 Major changes in the 9.0 release

- Automatic LTE Cell ID planning
- Extended LTE neighbor analysis
- Enhanced LTE analysis
- LTE Fixed Subscribers
- Evolved HSDPA support with combined DL MIMO and 64QAM and UL 16QAM, 2ms TTI
- EDGE Evolution support
- Database model Zero Admin
- Support for TEMS Investigation 10.0 logfiles and LTE scanner measurements
- Advanced plot display

1.3 Major changes in the 9.0.1 release

- New Ericsson OSS-RC functionality for GSM.

2 TEMS CellPlanner 9.0.1 upgrade matrix

The table below indicates if new licenses are needed and if planning data must be migrated when upgrading to TEMS CellPlanner 9.0.1.

| INSTALLED PRODUCTS | LICENSING | MIGRATION OF PROJECTS |
|----------------------------------|----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TEMS Cellplanner 9.0.0 | Existing license file can be used. | No action needed with the exception of the following: If “SDCCH not hopping” was selected in the Channel group editor and the project has been migrated from an earlier version to 9.0.0, please contact TEMS Support. |
| TEMS CellPlanner 8.1.x and 8.0.0 | New license file needed. Note that a separate license is needed for the database. Please contact TEMS Support. | Projects must be exported with the TEMS CellPlanner XML export and imported in TEMS CellPlanner 9.0. Projects stored in a TEMS CellPlanner database can also be migrated by using the “Server Export”. In this case follow the instructions in the Database Migration chapter in the Installation Guide. |
| TEMS CellPlanner 8.0.1 and 8.0.2 | New license file needed. Note that a separate license is needed for the database. Please contact TEMS Support. | Projects must be exported with the TEMS CellPlanner XML export and imported in TEMS CellPlanner 9.0. The database server export does not work properly when exporting from 8.0.1 and 8.0.2. Please contact TEMS Support if migrating from those versions. |

| | | |
|---------------------------------------------|----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TEMS CellPlanner 7.x | New license file needed. Note that a separate license is needed for the database. Please contact TEMS Support. | Projects must be exported with the TEMS CellPlanner XML export and imported in TEMS CellPlanner 8.1. <i>Note: Simplified information model in 7.0 and later releases, some attributes from earlier releases are not migrated by the XML export and import.</i> |
| TEMS CellPlanner Universal 6.2.0 and 6.3.0i | New license file needed. Note that a separate license is needed for the database. Please contact TEMS Support. | Projects must be exported with the TEMS CellPlanner Universal XML export and imported in TEMS CellPlanner 8.1. |
| TEMS CellPlanner Universal 6.1.x and 6.0.x | New license file needed. Note that a separate license is needed for the database. Please contact TEMS Support. | Projects must be exported with the TEMS CellPlanner Universal XML export and imported in TEMS CellPlanner 8.1. <i>Note: Scenarios are not supported in releases after 6.1.</i> |
| Earlier releases of TEMS CellPlanner | Please contact TEMS Sales. | Please contact TEMS Sales. |
| Other cell-planning tools | Please contact TEMS Sales. | Please contact TEMS Sales. |

3 Hardware and Software Requirements

The following are minimum and recommended configurations for TEMS CellPlanner 9.0.

3.1 Minimum requirements

Client or standalone PC: Small projects, up to 500 sites

OS: Windows® XP Professional
 Processor: Pentium III 1.4 GHz
 Memory: 512 MB of RAM

Server PC: Small projects, up to 500 sites

O/S: Windows® XP Professional
 or Windows® 2003/2008 Server x86 (32bit)
 Processor: Pentium III 1.4 GHz
 Memory: 512 MB of RAM
 Database: Oracle 11g

Client or standalone PC: Medium projects, 500 - 3000 sites

OS: Windows® XP Professional
 Processor: Pentium IV 2.5GHz or higher processor
 Memory: 1 GB of RAM or higher

Server PC: Medium projects, 500 - 3000 sites

OS: Windows® XP Professional
 or Windows® 2003/2008 Server x86 (32bit)
 Processor: Pentium IV 2.5 GHz
 Memory: 2 GB of RAM
 Database: Oracle 11g

DVD reader is required for all configurations.

3.2 Recommended configuration

Client or standalone PC: Large projects, more than 3,000 sites

OS: Windows® XP Professional x86/x64 (32 or 64 bit)
or Windows® Vista Enterprise/Ultimate/Business
x86/x64 (32 or 64 bit)
Processor: Intel Core 2 Duo or similar processor
Memory: 2 GB of RAM

Server PC: Small projects, less than 1,000 sites or less than 5 users

OS: Windows® 2003/2008 Server x86/x64 (32 or
64bit)
Processor: Intel XEON or similar processor
Memory: 2 GB of RAM
Database: Oracle 11g

Server PC: Medium projects, 1,000 – 3,000 sites or 5 - 10 users

OS: Windows® 2003/2008 Server x64 (64bit)
Processor: Intel XEON or similar processor
Memory: 4 GB of RAM
Database: Oracle 11g

Server PC: Large projects, more than 5,000 sites or more than 10 users

OS: Windows® 2003/2008 Server x64 (64bit)
Processor: Intel XEON or similar processor
Memory: 8 GB of RAM
Database: Oracle 11g

DVD reader is required for all configurations.

4 Product Compatibility

4.1 TEMS Investigation / TEMS Automatic / TEMS Pocket

TEMS log-files

TEMS CellPlanner supports direct import of TEMS log-files (drive test data).

TEMS CellPlanner supports TEMS Investigation versions 6.0 to 10.0. Log files from TEMS Pocket 7.0 and TEMS Automatic 7.x are supported as well. The following types of measurements can be imported:

- GSM: UE mode, CW scan (UE or dedicated scanner)
- WCDMA: UE mode, CPICH scan (UE or dedicated scanner)
- LTE: scanner mode (dedicated scanner only)

Log files from TEMS Pocket and TEMS Automatic are imported through the same procedure as log files from TEMS Investigation.

4.2 TEMS LinkPlanner

TEMS LinkPlanner supports import of site data from TEMS CellPlanner. Import the TEMS CellPlanner XML export file with the import functionality in TEMS LinkPlanner.

5 New Features in TEMS CellPlanner Release 9.0

5.1 LTE Automatic Cell ID Planning - PCI -

Automatic LTE Cell ID planning function assigns the 504 available physical cell IDs in order to avoid using the same ID for two cells close to each other.

The assignment procedure uses an interference matrix and neighbor lists, allowing the user to control how the function shall handle the 168 cell ID groups.

Automatic LTE Cell ID Planning is a Stop and Go function which means the users can stop it any time and check the progress. Users can display the current lowest total cost for the PCI plan, and the parameter settings are saved and restored every time LTE PCI planning is performed.

Automatic LTE Cell ID Planning is a Lock/Penalty Cost function. It enables the users to lock an existing CID assignment and specify a CID unlock cost, select a Use Neighbor List and specify Neighbor Cost and Second-order Neighbor Cost as well as a Minimum re-use cell distance and a Distance cost.

5.2 LTE Extended Neighbor Analysis

TEMS CellPlanner Neighbor analysis function has been extended to create IRAT Neighbors between:

LTE to GSM, LTE to WCDMA, GSM to LTE, and WCDMA to LTE

TEMS CellPlanner automatically generates a Neighbor List.

Another new feature is "Black List" generation, which allows users to turn on or off the "blacklisted" attribute, which is determined based on distance. This enables users to block IRAT Neighbors and block intra-LTE neighbors.

TEMS CellPlanner provides a graphic display of neighbor relations and an Export/Import neighbor function from/to text or Excel file.

5.3 Enhanced LTE Analysis

Monte Carlo simulator performs now downlink and uplink analysis and the control channels' resources are modeled on a detailed level.

The users have now the possibility to select different scheduling methods: Round Robin, Channel dependent, or QoS aware.

The analysis enhancements bring the possibility to deploy LTE Fixed Subscribers.

5.4 Support for Evolved HSPA

Evolved HSDPA now includes combined 64QAM and MIMO features increasing throughputs up to 42 Mbps peak.

16QAM is available in UL, increasing throughput up to 11.8 Mbps. Support for 2ms TTI has also been introduced.

Evolved HSPA in TEMS CellPlanner supports the new HSDPA terminals.

These implementations cover functionality in Ericsson WCDMA RAN P7FP, 3GPP R7.

5.5 EDGE Evolution

TEMS CellPlanner introduces EDGE Evolution support, approaching data rates of 100 kbps per timeslot. There is a new EDGE Evolution bearer type, and a possibility to define terminals with multiple Rx antennas.

EDGE Evolution can be configured on individual channel groups and analyzed for data rate, throughput and capacity.

The EDGE Evolution functionality includes traffic support with live traffic import, live traffic distribution, and traffic analysis. It is also possible to export/import EDGE Evolution parameters from/to text or Excel files.

The GSM traffic analysis has been improved with general usability enhancements, drastically decreasing the need to specify parameters manually for packet-switched analysis.

5.6 OSS-RC GSM (CNAI Interface)

The new Ericsson OSS-RC GSM interface is now available in TEMS CellPlanner 9.0.1. The old CNAI interface was removed in 9.0.0.

OSS-RC GSM Import can be used to create a new TEMS CellPlanner project from live network data, or to update an existing TEMS CellPlanner project with changes that happened in the network (new sites/cells added or cell parameters changed).

The live network data can be compared with the TEMS CellPlanner project, and the user can select to import or disregard changes.

OSS-RC GSM Export can be used to export a cell plan created in TEMS CellPlanner to the live network (frequency plan, neighbors, power, HCS parameters, etc.). New cells can be created and existing cells can be updated in the BSCs.

The file format used is the "new" CNAI format, which is not compatible with the "old" CNAI format used in earlier versions of TEMS CellPlanner.

5.7 Server Models

TEMS CellPlanner introduces Zero Admin, the new database model focusing on smaller user groups (1-10 planners), small planning projects (no IS-department) and short roll-out projects.

The main difference from the other server model, Enterprise, is that no Oracle database is needed; therefore the installation procedure is simplified and less maintenance is needed.

5.8 Updated support for TEMS logfiles

TEMS CellPlanner now supports the latest releases of logfiles from TEMS Investigation, TEMS Automatic and TEMS Pocket. For detailed information see chapter Product Compatibility, page 13.

5.9 Edit Demographic Data

TEMS CellPlanner has been enhanced with the possibility to edit demographic data in MRR format.

5.10 Advanced Plot Display

TEMS CellPlanner provides a new plot display with the following enhancements:

Support for multiple plot configurations, multiple threshold tables and/or continuous display, possibility to efficiently copy plot configurations between PCs, plot configuration presets and histogram display.

A plot statistics function with reports available for all plots is now available. The plot statistics function is available for all plots and operates on the plot source data resolution.

Plot snapshots and plot compare is now available on all plots in all radio technologies.

Plot compare is available for all combination of plots and plot snapshots. Both quantitative (for example Signal strength plots) and qualitative plots (for example By cell plots) can be compared.

Fast drawing function with direct plot display skipping OK and Apply buttons.

Plot flip function providing fast switch between selected plots enabling a quick plot differences spot.

Other enhancements including improved color scale handling, improved by cell plots, adjustable amount of colors, legend per cell or per color, improved thresholds and continuous plot display.

5.11 Cell Polygon - Enhanced WCDMA LSA

LSA (Location Service Area) has been renamed to Cell polygon to conform with UTRAN terminology. The cell polygons have also been enhanced with the following:

Select bearer for which cell polygons should be created, automatic expansion of polygon as a percentage of its original size and possibility to select maximum allowed number of vertices for the cell polygons. (Now it is possible to generate polygons with more vertices than the original 15 (3GPP)).

Cell Polygon has now flexible solutions for multiple areas:

It automatically weights areas inversely according to distance to the cell and its size to decide in which area to generate the cell polygon or to enclose all areas (user define the size) in a single polygon.

Other enhancements include automatic polygon coloring, which can display the polygons as filled or partly transparent, and a powerful graphic editor allowing it to select polygons directly on the map by clicking the corresponding cell antenna.

A new Cell Polygon editor is included:

- Undo/redo functionality
- Expand polygon
- Select individual vertices
- Delete selected vertices
- Advanced transformation of neighbouring vertices when moving a selected vertex.

Cell polygons can also be exported to OSS system.

5.12 Traffic per Area

TEMS CellPlanner now has a function to spread a given amount of traffic over a polygon when specifying the traffic demand.

5.13 New Filter Panel

The old filter panel has been replaced by a new in all applications, explorers and analysis windows, where filter can be applied. This new filter panel will enhance usability of filter by reducing the number of mouse clicks required to apply, create and edit filters.

- The active filter is selected from a drop down list.
- A shortcut is provided to filter editor. A new filter can be created and the active filter can be changed or deleted directly from the filter panel.
- A new site or cell filter can be created in filter panel from a selection made in map window.

5.14 Graphical Azimuth editing

It is now possible to graphically edit antenna azimuth by a click and drag functionality, enabling the users to point the desired antennas direction directly on the map window.

5.15 ASMT parameters visible in Cell

ASMT Parameters can be viewed in the cell, enabling prediction model parameters to be displayed.

5.16 Enhanced Path profile

The TEMS CellPlanner path profile tool has been improved at the following points:

- The line showing the path in map window is now persistent.
- The far end of the path may be dragged around.
- The path's end points may be forced to snap to an antenna.
- The profile's antenna height may be automatically fetched from the snapped antenna.
- The profile's frequency may be automatically fetched from the snapped antenna.
- A marker in the map showing cursor's position in profile window.
- A marker in the profile showing cursor's position in the map.
- Status bar showing sight line's inclination.

5.17 Distance Tool

TEMS CellPlanner brings a new distance tool with graphical representation of the measured distance, settings displayed in a dialog box, distance measurement in steps with accumulated mode, and total distance along a polygon. A step back to partial mode is also possible, one step at a time.

The new distance tool also brings an optional indication of azimuth and bearing, several measurement units (meters, kilometers, yards, miles, nautical miles, and degrees), the ability for the user to select the line color, and parameters settings that are automatically stored.

6 Improvements and changes in release 9.0.0

6.1 General

6.1.1 Support for absolute traffic amounts in Traffic Demand editor

When specifying the traffic demand using the Traffic Demand editor, it is now possible to spread a given amount of traffic (e.g. "100 voice users") over a user-defined area. Previously, traffic was always defined in terms of *density* rather than *amount*. TEMS CellPlanner 9.0 offers both options.

6.1.2 Improved database performance

The performance of Partial Publish/Refresh in large projects has been improved.

6.1.3 No support for CNAI import/export

The old CNAI import/export has been removed. It will be replaced by the OSS-RC GSM interface in TEMS CellPlanner 9.0.1.

6.2 Installation

6.2.1 Default parameters for TEMS CellPlanner Server have been changed

In TEMS CellPlanner 9.0, there are two variants of the server: the Enterprise version and the Zero Admin server. The installation procedure has been updated to provide default values for both. When installing the client, it is recommended to be careful regarding the database connection setup, as the parameters may be different than in previous releases of TEMS CellPlanner. For example, if the new Zero Admin server is used, the default port number will be different.

Default values for the Enterprise server:

Nickname = <Server nickname>
 Server name = Enterprise_9.0
 Host = //<host>:28574

Default values for the Zero Admin server:

Nickname = <Server nickname>
 Server name = ZeroAdmin_9.0
 Host = //<host>:28575

6.2.2 Citrix support separate option in the installation wizard

Citrix support is now a separate option during the installation process. Previously, it was listed as a type of radio technology, which could be confusing.

6.3 Map functionality

6.3.1 Possible to combine vector data in different coordinate systems, MRV format

Previously, the tool for preprocessing vector data could not handle updates from data with coordinate systems different from the original MRV data. This is now possible.

6.3.2 Changed behavior of "noname" coordinate system

In TEMS CellPlanner 9.0, it is no longer possible to create or update a map database with a coordinate system using the default name "noname". Instead, users will have to specify a name. This is also true for the Ellipsoid and Datum shift components.

Similarly, when adding a new coordinate system in the "Coordinate systems" dialog (File-> Map data-> Coordinate systems-> EriMap), the name used to be automatically set to "noname". This is now changed; the user has to input a new, unique name.

6.3.3 Text map layers supporting different levels of details

Map data of text type (city names, street names etc.) can now be classified in different level of details, where text can be suppressed depending on map zoom scale factor.

6.4 Editors and information model

6.4.1 Min Tx power can be set below 0 dBm

The UTRAN cell attributes "Min Tx power per TCH" and "Max Tx power per TCH" can now be set below 0 dBm. The lower limit has been adjusted from 0 dBm to -100 dBm.

6.4.2 Multiple demands allowed for WiMAX bearers

Previously, it was not possible to define more than one traffic demand for a single WiMAX bearer in the traffic demand editor. This is now allowed.

6.4.3 Removed superfluous terminal height definition

The pathloss calculation uses a terminal height defined by the prediction model parameters. However, there is also a height attribute on the terminal, which was confusing. To avoid any misunderstandings, the superfluous height attribute is now removed from the terminal editor.

6.4.4 Removed superfluous checkboxes in GSM BSC

The "BCCH in OL cell" checkbox has been removed from the GSM BSC editor. TEMS CellPlanner has never supported this and will never do, since this is an obsolete feature that is no longer used in the GSM network.

Similarly, the checkbox "HSCSD" has been removed from the BSC editor, since TEMS CellPlanner does not support analysis of the HSCSD feature.

6.4.5 Removed superfluous checkbox in Channel Group editor

In Ericsson GSM systems older than R10, there used to be five hopping types:

- No hopping
- Baseband hopping, both TCH and SDCCH
- Synthesizer hopping, both TCH and SDCCH
- Baseband hopping, TCH only
- Synthesizer hopping, TCH only

The "TCH only" options have since been removed from the GSM system and are no longer available in R10 and later system versions. Therefore, the checkbox "SDCCH not hopping" in the Channel Group editor is no longer needed, and has been removed.

6.4.6 Removed superfluous field from LTE terminal editor

In the LTE terminal editor, the field "Max number of UL RBs" has been removed, since the field is not used in the analysis functions.

6.4.7 Removed superfluous Indoor/Tunnel selection in antenna branch

The antenna branch power windows for all technologies (LTE, WCDMA, GSM, and WiMAX) – used to include an unselectable option and parameter to configure the relative load of an indoor/tunnel repeater. As this is not implemented, these parameters have now been removed from the user interface.

6.4.8 Changed name for HSDPA cell parameter "Max. no. of orthogonal codes"

The UTRAN cell parameter name "Max. no. of orthogonal codes", found among the HSDPA parameters, has been changed to "Reserved orthogonal codes". This change was needed since the old name was misleading. The sole purpose with the parameter is to put a constraint on the available orthogonal codes for R99 traffic. That is, the value of "No. of orthogonal codes" (for R99) may not exceed 256 minus the value of "Reserved orthogonal codes" (for HSDPA). Furthermore, it should be noted that the "Reserved orthogonal codes" value is not used in the WCDMA analysis, only for error checking in the editor.

6.5 Analysis functionality

6.5.1 New channel models for LTE

New LTE channel models are used in TEMS CellPlanner 9.0. If you import a project from TEMS CellPlanner 8.1, the data rate mappings of the terminal types will automatically be replaced by a default mapping (Channel model EPA, doppler frequency 5 Hz, open-loop MIMO). To use a project created in TEMS CellPlanner 8.1 you must manually assign a new mapping wherever the default value is not appropriate.

6.5.2 Possibility to define own data rate mapping tables for LTE removed

The possibility to define your own data rate mapping tables has been removed in this release.

6.5.3 Clarified label and value for UL interference in LTE analysis report

In the LTE analysis report, there was a column labelled "Interf." which showed uplink interference per RB. The column is now labelled "UL interference", and shows uplink interference on the whole carrier.

6.5.4 LTE Analysis considers max data rate of terminals

The LTE analysis now takes the max data rate of the terminals into account, not only the max rate of the bearer.

6.5.5 Noise term added in Ec/No plot

A noise term (thermal noise and receiver noise) is now included in the Ec/No plot of the WCDMA analysis.

6.5.6 Clarified warning message in AFP

It is possible to run the AFP without having an interference table. The optimization will then only consider separation requirements (cocell, site, and neighbor). This will normally result in zero cost for the resulting plan.

This is a possible use case, but it could also occur because the user simply forgot to calculate the interference table. For that reason, a warning is given in this situation. In TEMS CellPlanner 9.0, the wording of that warning has been made sharper, to clarify that running without an interference table will result in a frequency plan that does not explicitly take interference into account.

6.6 Plots

6.6.1 Improved Plot statistics

A new Plot statistics function has been added, which has the ability to cross-correlate plots against other plots or against the landuse map. For example, it is possible to have signal strength categories on one axis and clutter codes on the other axis.

The new Plot statistics function replaces the Screen statistics function, available in earlier releases.

6.6.2 Line of Sight Plot Export

It is now possible to export the plot created by the Line of Sight map tool.

7 Improvements and changes in release 9.0.1

7.1 General

7.1.1 Support for landuse statistics

In TEMS Cellplanner 9.0.0 it was not possible to create landuse statistics. In release 9.0.1 this possibility has been reintroduced.

7.2 Analysis functionality

7.2.1 With Analysis area selected the WCDMA analysis performance is improved

The performance of the plot generation in WCDMA analysis has been improved when having an Analysis area selected.

7.2.2 Improved performance when calculating WCDMA composite pathloss

The performance when running WCDMA composite pathloss is now improved. For a large network the time has been reduced from several minutes to a few seconds.

8 Corrections in release 9.0.0

This chapter includes corrections made in the 9.0.0 release.

8.1 Map functionality

8.1.1 Duplicate map favorites

Under certain circumstances, items could be duplicated in the map favorites selection list box. This is now corrected.

8.1.2 Could not export Network layer as vector file

There used to be error messages when exporting the network layer as a vector file, such as MapInfo. This has been corrected in TEMS CellPlanner 9.0.

8.1.3 Path loss in plot sometimes different from Bin Query

In former TEMS CellPlanner releases, the Bin Query sometimes did not display exactly the same values as the plot status bars, due to different raster sampling algorithms. (Both were correct in relation to the calculation precision, however.) Bin query and plot status bar displays have now been aligned to display the exact same values.

8.1.4 Problem with vector layer properties

External vector files, e.g. MapInfo, were sometimes displayed with incorrect colors or not at all due to a bug, which is now corrected.

8.1.5 Print dialog freeze

While the Print dialog was open, it could sometimes freeze if other actions were carried out at the same time (such as zooming in the map window). To avoid this problem, other parts of the user interface are now disabled while the Print dialog is open.

8.1.6 Print preview window occasionally distorted

The print preview window could be drawn incorrectly when drawing in the normal map window interfered. To avoid this problem, other parts of the user interface are now disabled while the Print dialog is open.

8.1.7 Survey plot layer: Transparency, brightness and saturation did not work

The transparency, brightness, and saturation sliders in the survey plot layer property dialog now work as expected.

8.1.8 Polygons drawn incorrectly at detailed zoom

Polygons in the polygon layer could be drawn incorrectly at detailed zoom levels. This is now corrected.

8.1.9 TAB file sometimes not correctly converted to MRV format

When importing a MapInfo TAB file with the Preprocess vector data tool, the last object in the input file was not used. This is now corrected.

8.1.10 Preprocess vector data - the window does not open

After preprocessing Planet vector data to MRV, the Preprocess vector data window could not be opened again. This has been corrected.

8.1.11 Wrong classification of new text MRV file

When creating a new MRV-file containing text data, it would sometimes be marked as containing vector data. This is now corrected.

8.1.12 Cannot assign new value to demographic map category

Occasionally, changed values for demographic map categories did not take effect (when reopening the Edit dialog, the old value remained). This is now corrected.

8.1.13 No way to see progress of LSA polygon generation

In previous TEMS CellPlanner releases, no status information was given while generating LSA polygons. Therefore, it was hard for the user to know how long the operation would take to finish. There is now a progress bar for this function.

8.1.14 Internal error in LSA polygon generation

Under certain circumstances, an error message ("An internal error occurred") could be shown in the LSA polygon generation. This problem has now been corrected.

8.2 Import/export

8.2.1 Information mismatch in GSM carrier import

The import is divided into two phases: validation and import. Some behavior that generates warnings is detected in both phases, and thus the total number of warnings seems to be up to twice as much as it should be. This has been adjusted so that errors detected in both validation and import are only counted in the first case.

8.2.2 XML import 6.0, 6.1 to 8.0 missed some attributes

When migrating projects in XML format from TEMS CellPlanner Universal 6.0 or 6.1 to TEMS CellPlanner 8.x, some filters and flag settings could be lost. This is now fixed, so projects can be migrated from version 6.0 or 6.1 to version 9.0 without losing these settings.

8.2.3 TI logfiles sometimes not readable from network drive

The TEMS Investigation import function used to give an error message for log files located on network shares. This is now corrected. However, for performance reasons it is still recommended to store log files on local drives, if possible.

8.2.4 Cancel BulkCM import not possible

Pressing cancel during BulkCM import has no effect if done during the final phase of the import (after the user has made the selection of what to import). It is not possible to cancel the import in this stage for safety reasons: the project would most likely not be consistent after canceling. The cancel button has now been disabled in these cases, to make it clear that cancellation is not possible.

8.2.5 Problems importing empty neighbor lists

If empty neighbor lists were imported, or neighbor lists with all lines invalid, the Evaluate Neighbor function would not behave correctly. This has been adjusted.

8.2.6 BulkCM interface imported too much data

When importing BulkCM files, the user is asked to make a selection of what to import. Sometimes more information was imported than the user expected. A number of bugs related to the problem have now been fixed, and the selection is now better reflected in the imported result.

8.2.7 Export/import of the same GSM carrier text file incorrectly reassigns frequency groups

When exporting and then re-importing a GSM carrier text file, the frequency group assignments would sometimes be changed to inappropriate values. This is now corrected.

8.2.8 LTE neighbor import fails for frequency 0

There used to be an error when importing LTE neighbor cells with frequency 0. This has now been corrected.

8.2.9 Wrong area sometimes exported in vector map export

When exporting a vector map layer from a visible map layer, the result could be affected by coordinate shift (i.e. the exported area was not exactly the same as the specified area). This is now fixed.

8.3 Database

8.3.1 Site permissions modified without user interaction

Due to several limitations in the "Setting permission on sites" functions in the Admin tool, the function has been replaced with the new function "Edit site permission" in the client installation. It is located under Utilities> Edit site permission in the Start menu. This function is only valid when using TEMS CellPlanner in a client-server setup with the TEMS CellPlanner Server, and only users with administrator privileges (in the TEMS CellPlanner permissions system) can open and use the function.

The new function handles filters, selections etc. and there are also utility functions (select all, clear all and invert selection) to simplify editing. The old, corresponding function in the Admin tool ("Edit user group") remains, but will be removed in a future release.

8.3.2 Superfluous attributes when publishing

When doing Partial Publish/Refresh or Workspace Diff towards the database, some superfluous internal attributes (Area, ReferenceSystemPar, and UserProfile) were visible in the diff tree. These are not relevant for the user, and are now not displayed.

8.3.3 Sites incorrectly marked as not modifiable

There was a problem with sites in the Site Explorer being marked as not modifiable (red cross). This could happen for newly created sites (not yet published to the main workspace). This has been fixed, and they are now displayed correctly.

This correction is only applicable when working in a TEMS CellPlanner server environment.

8.3.4 Cancel button did not work properly when creating project on server

When creating a project on the database server, there used to be a Cancel button, but pressing it had no effect. The Cancel button has now been removed, since there is no way to cancel the create operation.

8.3.5 Offline save function may give inconsistent project

Offline save sometimes produce corrupt offline files. When creating an offline file from a large project, the offline file would sometimes be incorrect. This was due to faulty memory handling which made some information unavailable for saving. The file was still produced but was unusable to some degree (although the database project was not affected by the corruption). There could also be problems when checking in the offline project, such as neighbor relations to deleted sites remaining, causing an inconsistent project. These problems have been corrected.

8.3.6 Possible project inconsistency in partial publish/refresh for new repeaters, sites, and neighbors

Partial publish/refresh could make the project inconsistent when new radio repeaters, sites and neighbor relations were created, since it was possible to leave out some mandatory objects. This has been corrected by making mandatory objects pre-selected.

8.3.7 Superfluous change reports in Antenna branch editor

When the user pressed Apply in the antenna branch editor, some attributes would always be indicated as changed in the database difference viewer, even though the actual values were the same. This applied for example to ASC/TMA uplink compensation, and is now fixed.

8.4 Editors and explorers

8.4.1 Drag and drop of radio repeaters for GSM, LTE and WCDMA

It was previously not possible to drag and drop radio repeaters for GSM, LTE, and WCDMA. Now, this works as intended.

8.4.2 Reference points in antenna branch editor were incorrectly illustrated

The antenna branch window includes a picture showing an antenna contact, ASC/TMA, and RBS, with text about extra attenuation (for jumper loss). Ref point A should be placed at the antenna contact, and the extra attenuation between the ASC/TMA and Ref point A, but Ref point A was incorrectly placed on the ASC/TMA, and the extra attenuation between Ref point A and the antenna contact. This picture has now been corrected.

8.4.3 GSM cell attribute qRxLevMin had wrong name in cell editor

The incorrect parameter name "Min quality RX level" in the GSM cell editor has been changed to "Min RX level".

8.4.4 Inconsistent project when changing Overlaid sub-cell flag in channel group

The "Overlaid cell" check box in the Channel group editor is now read-only. A channel group always belongs to the same subcell; it is not possible to move an existing channel group from OL to UL or vice versa. The purpose of the checkbox is simply to provide an indication whether the channel group belongs to the OL or UL cell.

8.4.5 HS-DSCH power parameter descriptions mixed up

In the WCDMA User's Guide, the UTRAN cell HSPA parameter "HS-DSCH cell power" was described with the text aimed for parameter "Average HS-DSCH cell power", and the description of the latter parameter was not correct. Both those parameters are now correctly described.

8.5 Analysis functionality

8.5.1 Extreme WiMAX utilization % values shown as negative

In the previous release of TEMS CellPlanner, using a WiMAX traffic demand mix with extremely high traffic density and/or scale factor values (above 30x full normal load) could result in overflow in the utilization for a cell, which was seen as a negative value in the status bar. This has been corrected (bins with overflow are now shown as undefined).

8.5.2 Neighbor analysis parameter check insufficient

It used to be possible to set invalid values for the parameters of the neighbor analysis. This is now verified before the analysis starts, and an error message is shown if the values are not within limits.

8.5.3 LTE – Inconsistent initial values for resource blocks and carrier bandwidth

When adding an LTE frequency band, the initial value for the Carrier bandwidth is 5 MHz, while the default carrier mapping setup corresponded to a carrier bandwidth of 1.25 MHz (six resource blocks). The default value is now changed to 25 resource blocks, consistent with the 5 MHz default bandwidth.

8.5.4 Wrong interference for staggered 1/3 synth hopping cells

The GSM interference analysis would in some situations report adjacent channel interference for synth hopping cells, even there should have been no interference at all. This is now corrected.

8.5.5 HSDPA power margin not applied in HSDPA SIR plot

The HSDPA power margin was not applied in the own-cell interference calculation for the HSDPA SIR calculation. This error affected the plot calculation only, not the Monte Carlo calculation. In TEMS CellPlanner 9.0, the HSDPA power margin is applied correctly.

8.5.6 Confusing error message if creating WCDMA cell polygons without first running WCDMA analysis

Attempting to select creation of WCDMA cell polygons without first running the WCDMA analysis used to give a confusing error message. This has been changed so that the error message explains that the WCDMA analysis result is missing.

8.5.7 Missing P values in Bin Query when CPICH plots are Service independent

If service independent plots were selected in the WCDMA analysis, the Bin Query function would not display the power value (only "N/A"). This has now been corrected, so the power value is shown.

8.5.8 Pessimistic LTE data rates for MIMO cells in some cases

The LTE Best Server did not consider the TX diversity data rate for MIMO enabled cells. This caused data rates to be too low in low SINR areas. The problem only applies to non-aggregated rate mappings (i.e. with separate tables for MIMO and TxDiv). For the mappings provided with TEMS CellPlanner, this means that only rate mappings whose names started with "UE speed..." were affected, while others worked as expected.

In TEMS CellPlanner 9.0, this problem is fixed: TX diversity is assumed to be used if it gives higher data rate than MIMO.

8.6 Plots

8.6.1 Deleting more than one snapshot simultaneously did not work properly

When selecting multiple snapshots in the Plot Explorer and selecting delete, an error message was displayed and the delete partially failed. This has been fixed.

8.6.2 Autorange for continuous plots did not work if default was threshold

The autorange function in the plot property dialog did not work properly for continuous renderers if the plot by default had a threshold renderer.

8.6.3 Continuous renderer in certain plots did not respond to an edited value

Plots based on floating point data, for example GSM/Interference analysis/Average connection, did not work properly when adjusting the range. For example, when setting a large interval such as 0..1000000, the rendering did not change at all. This problem is now solved.

8.6.4 Screen statistics with threshold renderer did not work

In previous versions of TEMS CellPlanner, it was not possible to use the Screen Statistics function for threshold plots, including Custom attribute plots.

The function has been superseded by the new function Plot Statistics, which does handle threshold plots. (Custom attribute plots are still not supported by this function, however, as they are not accessible through the Plot Manager.)

8.6.5 "Pilot polluters count" plot exhibited strange behavior

The WCDMA plot "Pilot polluters count" used to have problems with the default color scale (only a single color, corresponding to value 0). The plot now has a more reasonable default color scale.

8.6.6 Saturation was not functional for certain color scales

The handling of changes in brightness and saturation for elevation maps and most plots has been improved.

8.7 General

8.7.1 Memory leak when closing project

When the user closed and reopened a project, a considerable amount of memory was leaked (about 20 MB for the GSM demo project). If projects were opened and closed many times, without closing TEMS CellPlanner in between, this would finally give an error message to the effect that no free memory remained. This memory leak is now fixed.

8.7.2 Script antenna_type_util did not work

The JPython script antenna_type_util.py did not work in TEMS CellPlanner 8.1. This script is normally used to merge several antenna types with one electrical tilt lobe each into one antenna type with multiple electrical tilt lobes. The script has now been corrected. Also note that tilt lobes can also be merged in the antenna pattern import function.

8.7.3 Project consistency check reported error for negative values of pathloss table fade margins

In the pathloss fading table, it is possible to define negative fade margins. However, the Project consistency check reported errors for those values. This has been corrected; now values down to -10 are allowed.

8.7.4 Save to file could fail when deleting objects in combination with work area filter

If a new project was saved to file for the first time with a working area filter applied, it would sometimes not be possible to save the project again. This was caused by certain information not being stored in the first save operation due to the filter. This is now corrected. Applied filters in the first save for a new project will no longer cause mandatory information to be skipped.

8.7.5 User documentation updated

The manuals have been updated with, among others, the following:

- WCDMA User's Guide clarifications about HSDPA codes

The name of UTRAN cell HSPA parameter "Max no. of orthogonal codes" was misleading as this parameter rather shows how many codes are allocated to HSDPA. The parameter has been renamed to "Reserved orthogonal codes". The description of the plot "Number of assigned codes for HSDPA" now tells that the number of codes of SF 16 is shown in the plot.

- Clarification on Power offset cell parameter

The use of parameter "Power offset" in the GSM cell data was not clearly documented. The GSM User's Guide has been updated to clarify that "Power offset" is not used for any calculations, but mapped to SSOFFSETDL at import/export of OSS-RC GSM network data. Updates were made in parameter for GSM cells as well as overlaid sub-cells, with corresponding templates.

- Apply imported neighbor lists to cell data

Generated neighbor lists in the Analysis menu are applied to the cell data in the project only after clicking "Apply" in the "Evaluate neighbor lists" window. This is also the case when importing neighbor lists via the Analysis menu. This is now clarified in the user guides.

- RSCP plots do not consider fading margin

WCDMA User's Guide erroneously claimed that fading margin is considered in the Received Signal Code Power (RSCP) plots. This is however not the case, and the manual has been corrected to state that fading margins are NOT considered in RSCP plots.

9 Corrections in release 9.0.1

This chapter includes corrections made in the 9.0.1 release.

9.1 Map functionality

9.1.1 Incorrect results when Landuse map reference system differed from the project reference system

Plot statistics, WCDMA analysis and Traffic spreading (all technologies) could not correctly handle when the Landuse map had a different reference system than the project. This has now been corrected.

9.1.2 Problem exporting certain type of plots to vector format

Exporting certain type of plots (e.g. composite coverage) to a vector format (e.g. MapInfo), sometimes produced a result that looked different from the original plot. This happened when there is coverage holes present in the plot in TEMS CellPlanner.

TEMS CellPlanner 9.0.1 handles holes when exporting value based plots to any MapInfo vector format. If comparing the TEMS CellPlanner plot with the exported plot to MapInfo format there will in most cases not be any missing areas any longer. In some special cases when exporting continuous plots the result might still look slightly different from the original plot.

Following prerequisites are needed: It is only the TEMS CellPlanner Value based plots that will create the holes in the MapInfo plot result. (Export of Non value based plots will not create any holes.) Export of plots is possible with both threshold and continuous renderer. It is recommended to use the threshold renderer which is based on a number of predefined colors. The export will also go faster with a limited number of colors. When using threshold or continuous renderer, both the parameter transparent beyond top and bottom has to be selected. Also, if using the continuous renderer the Automatic ranging must be unchecked and the top and bottom values must be set to include the total range of plot values.

9.1.3 Changing the map while exporting a map layer may caused errors

In previous version of TEMS Cellplanner it was possible to change the map display while exporting a map layer. Changing the map while exporting could cause problem in the export.

In TEMS Cellplanner 9.0.1 the exported map layer will be removed from the map when exporting to file to prevent problems.

9.2 Import/Export

9.2.1 Problem with the parameters `antenna_tilt` and `bstxpwr` in the OSS-RC GSM import

The OSS-RC GSM Import/export function has been completely redesigned in TEMS CellPlanner 9.0.

The problems regarding `antenna_tilt` and `bstxpwr` are solved in the new version.

NOTE: The new OSS-RC GSM import/export uses a new CNAI format which is completely different from the old CNAI format used in previous versions of TEMS CellPlanner. Therefore old CNAI files cannot be used with TEMS CellPlanner 9.0.

New CNAI files must be generated from OSS-RC, using the shell command for CNAI, which is different from the shell command for old CNAI. The command has the following syntax:

```
cnaï export valid -i > filename
```

9.2.2 Export of repeaters with the Cell text export did not work when Selection was chosen

When exporting repeaters, the choice of what to export can be done with a filter or by a selection in the network layer. In the latter case, the repeaters would not be exported in earlier releases.

This has been corrected and the repeaters are now included in the export.

9.2.3 In the ICDM import there was no message saying if the import failed

In previous TEMS CellPlanner versions there was no message saying if the import of the ICDM file failed. This has been improved so there is now an error message in the status field if the import fails. The cells which could not be imported are also reported in the details messages.

9.2.4 Problem in the feature to import a Terminal from another project

A problem in the feature to import a Terminal (from another project) in the Equipment explorer caused the import to fail. This problem is now corrected.

9.2.5 Column "FrequencyGroupSet" added to GSM carrier text export

Frequency Groups were not exported correctly in the GSM carrier text export in earlier versions. When importing these files the GSM Carrier text import could not import the Frequency Groups in a proper way. The column FrequencyGroupSet has now been added to the GSM carrier export file to be able to sort the frequency groups correctly at import.

9.2.6 Not possible to import vector data in Mif-format from files that contains both vector and text data

In earlier versions it was not possible to import a MapInfo vector file that also contained text data. This has been corrected in TEMS CellPlanner 9.0.1 and the vector data is now imported correctly.

9.2.7 Inconsistent projects due to removal of checkbox "SDCCH not hopping"

The hopping types "TCH only" have been removed from the Ericsson GSM system and are no longer available in R10 and later system versions. Because of this the checkbox "SDCCH not hopping" in the Channel Group editor is no longer needed and it was removed in release 9.0.0. However, projects using this parameter were incorrectly imported in 9.0.0. This has been corrected in 9.0.1.

If "SDCCH not hopping" was selected and the project has been migrated to 9.0.0, the hopping type was incorrectly set to "Fixed" although the hopping parameters were correctly imported.

To solve the problem and make the project consistent, it is recommended to run the consistency check to identify where the inconsistencies are. Based on this information it is possible to make the necessary corrections. If further assistance is needed, please contact TEMS support.

9.3 Analysis functionality

9.3.1 Incorrect HS-SCCH power in WCDMA analysis

HS-SCCH power was assigned a much lower value in the WCDMA analysis than defined in the UTRAN cell editor. This is now corrected.

9.3.2 HSDPA data rate was too optimistic for Evolved HSPA

The HSDPA data rate calculation for Evolved HSPA contained an error which caused the data rate value to be too optimistic. The incorrect data rate corresponded to approx 3 dB higher SIR. This is now corrected.

9.4 Plots

9.4.1 AMI and ASMT plots changed the color scale unexpectedly

In previous TEMS CellPlanner release the AMI and ASMT plots changed the color scale after the Edit panel was closed. This also happened when there was no change in the Edit panel and Apply was selected.

Now, when the user opens the edit window for AMI/ASMT plots the color scale is shown correctly and apply works as it should. The value formatting is unchanged as expected.

9.4.2 Comparison plot with EUL noise rise snapshot plots was not possible to create

In previous version of TEMS CellPlanner it was not possible to make a Comparison plot between snapshot plots of EUL noise rise in WCDMA analysis. This is now corrected.

9.4.3 HSDPA data rate plot showed zero rate in non-iterative WCDMA analysis with code multiplexing enabled

The HSDPA data rate plot showed incorrectly zero rate when running the non-iterative WCDMA analysis with Code multiplexing enabled. This problem is now corrected.

9.5 General

9.5.1 Function Configuration recall did not update editors and network layer properly

The function Configuration recall failed to update editors and network layer when applying a configuration to the project.

The views of the project are now updated correctly when applying a configuration.

9.5.2 Some Evolved HSDPA terminals were incorrectly assigned MIMO capabilities

HSDPA terminals with category numbers 13 and 14 were incorrectly assigned MIMO capabilities. This has now been corrected.

Furthermore, the terminal editor now displays the MIMO max data rate for all MIMO capable terminals (category 15 to 20).

10 Known bugs and limitations in release 9.0.1

- **Clock tampering problem**

On some Windows Vista installations, the licensing system incorrectly detects clock tampering ("Error code: VLS_CLK_TAMP_FOUND"). If this occurs, a workaround is to disable UAC and run TEMS CellPlanner as administrator.

- **Problem exporting non value based plots to vector format**

Exporting non value based plots to a vector format (e.g. MapInfo), sometimes produces a result that looks different from the original plot. This happens when there is coverage holes present in the plot in TEMS CellPlanner.

- **Incorrect conversion of TAB files in Preprocess vector tool**

There are two ways to import TAB vector map files: through File> Map data> Preprocess vector data, or through File> Map data> Import wizard. For vector maps in TAB format, the wizard should be used. If the other method is used, vectors may be missing in the converted map.

- **Antennas not included when exporting the network layer to MapInfo TAB format**

When exporting the Network layer to MapInfo TAB format the antennas are not included.

Workaround: Export the Network layer using the MapInfo Mid/Mif format.

- **No changes reported in neighbor import**

There are two functions that can be used to import neighbor lists: File> Import> Cell neighbors text file, and Analysis> Neighbor list> Import to neighbor list. The former alternative is more user-friendly and is generally recommended.

If the latter option is used anyway, the following problem should be noted: After the import there is a message that tells the number of created/deleted neighbor relations. These numbers will sometimes incorrectly be stated as 0, even though relations were actually updated.

- **OSS-RC import sometimes finds too many differences when comparing import file and the TEMS CellPlanner project**

The comparison between objects in the Compare Workspaces and OSS-RC import can sometimes report differences between objects because of precision differences in floating point attributes like power setting for channels. This means that too many decimal digits are considered when comparing these kinds of values this will be addressed in a future release.

- **Custom attributes incorrectly reported as modified in OSS-RC import**

The OSS-RC Import assumes that custom flag attributes always have both a Type and a Name assigned. Attributes that have only a Type (but no Name) may show up as modified in the Import Comparison dialog, even if they have not been modified.

Workaround: make sure that all Custom flags have a Name defined. Proceed as follows:

1. Open System Explorer.
2. Under Custom attributes and flag types, select the affected attribute folder (for example Site attributes, GSM RBS attributes, UTRAN cell attributes, etc).
3. In the right panel: check the entries in the Flags table. Make sure that the Name column contains a unique name for each entry.
4. Fill in missing names, if any, and press Apply.
5. Repeat steps 2-4 for each affected attribute folder.

- **OSS-RC GSM Import does not currently support re-parenting of RBSs that is moving an existing RBS from one BSC to another**

Before importing OSS-RC data into an existing project, the user must make sure that each GSM RBS in the project is associated with the correct BSC (i.e. the BSC it is actually connected to in real network), or no BSC at all.

RBSs connected with wrong BSCs in the project may result in the creation of duplicates during OSS-RC GSM Import.

- **OSS-RC GSM Export function does not yet support export of GSM-->UTRAN neighbor relations**

The OSS-RC GSM Export function does not yet support export of GSM-->UTRAN neighbor relations. Support for this will be added in the next release.

If your project has GSM-->UTRAN neighbor relations, you might get some errors messages like the ones below from OSS-RC when importing the TEMS CellPlanner export file into OSS-RC:

```
domain UTRAN_EXTERNAL_CELL
```

```
mo BSC029:UCCELL1 (new) (parent is BSC029) Failed creating mo due to "The required corresponding cell does not exist."
```

```
Line:430: Import failed, continuing...
```

```
domain UTRAN_NREL
```

```
mo BSC029:180A:BSC029:UCCELL1 (new) (parent is BSC029:180A) Failed creating mo due to "The required corresponding cell does not exist."
```

```
Line:449: Import failed, continuing...
```

These error messages should be ignored for the time being, until the support for GSM-->UTRAN neighbors is implemented.

In order to disable the error messages above you can do as follows in TEMS CellPlanner when using OSS-RC GSM Export:

1. File-->Export-->OSS-RC GSM
2. On General tab: unselect option External UTRAN cells
3. On Neighbors tab: unselect UTRAN neighbors
4. Proceed with export as usual.

- **Missing attributes in Report editor**

When loading an existing report template into the Report Editor, it is sometimes not possible to select new attributes from a folder that already has some attributes selected. The folder simply does not appear in the tree with available attributes.

Workaround: temporarily unselect the selected attributes of the affected folder. All attributes of that folder will then be available, and a new selection can be made.

- **Database migration**

Database users must read the **Database migration** chapter in the Installation guide before starting the new installation to avoid losing data.

The database server export from the User Administration tool does not work properly when exporting from TEMS CellPlanner 8.0.1 or 8.0.2. If you are going to migrate from any of those versions please contact TEMS support for further instructions.

If you are going to migrate from 8.0.0 or 8.1.x the database server export works as it should and the description in the Database migration chapter in the Installation guide can be followed.

- **Drag and drop objects between RBSs with different technologies and in different sites does not work properly when using the Zero admin server**

When using the Zero admin server do not drag and drop objects in the explorers between RBSs in different sites and of different technologies such as an antenna branch from an LTE cell to a GSM cell. If you do this it might not be possible to publish and/or refresh the workspace to/from the database.

If this happens you will have to create a new workspace and any unpublished changes from the old workspace will have to be added manually or by using cell text export/import.

- **Partial publish fails when interfered by another user when using the Enterprise server**

If one user has modified an object, another user has deleted the same object and both of them are doing a partial publish at the same time, the partial publish for the first user will fail with a "NullPointerException".

Workaround: The first user has to restart the partial publish.

- **Change of project filter may cause problem**

A consistency check is now performed behind the scenes when saving to the database. However, this check only applies to objects, which are visible through the current project filter. If the project filter is changed, without first saving changes in the workspace to the database, inconsistency might go undetected and possibly causing problems in the server later.

Workaround: Avoid changing the project filter while having unsaved changes.

- **Misleading error message in Zero Admin server**

If one user is in the process of creating a very large project on the server, and another user tries to load a project from the server at the same time, the server will respond with the error message "ServerOperationException: Unexpected error in ZapClientSession.getProjects". This message should be read as "Server is busy, try again later". The problem will only occur on servers having limited hardware resources in relation to the project size.

When the large project has finished creation, other projects can be loaded normally.

- **Offline is not supported by the Zero admin server**

Offline is not supported when using the Zero admin server.

- **Out of memory during WCDMA analysis**

When running WCDMA analysis on a very large network (more than 10 000 cells), the WCDMA analysis could crash with an "Out of memory" error even when a filter is applied, which limits the number of cells included in the WCDMA analysis. The memory problem occurs only if the CPLM was created for the whole network without the filter.

Workaround: Re-run CPLM analysis with a smaller number of cells using the same filter as for the WCDMA analysis.

- **Coverage holes close to sites in multi-carrier WCDMA networks**

In multi-carrier WCDMA networks, the coverage plot for a particular frequency has holes around sites not using that frequency. The reason is that CPLM discards cells with high pathloss relative to the cell with the least pathloss.

Workaround: The CPLM parameters "Max delta pathloss" and "Max number of cells" should be increased.

- **WCDMA Statistics is only counted for best-serving cell**

Statistics only counts admitted users and blocking reason on a cell for those users having that cell as best cell, while congestion control, in some cases, apply blocking for users in handover also. This can give inconsistency between connected and blocked users in statistics.

- **WCDMA Analysis: The number of blocked multi-rate users can be too high in some cases**

The number of blocked multi-rate users can be too high if the number of multirate users is higher than the admission SF threshold for lowest bit rate.

Workaround: Set a higher SF threshold for SF used in lowest bit rate for multirate bearers.

- **HS-DSCH power in the statistics report is not correct in spite of low/high traffic demand mix**

The HS-DSCH power shown in the HSPA statistics report is the power transmitted while the HSDPA channel is switched on. The channel is switched on only when there is data to transmit, and the fraction of the time while this is the case is reported as the Activity factor. Hence, to calculate the average power (in W) used by the HS-DSCH, you must multiply the reported HS-DSCH power (converted to W) by the Activity factor.

- **Service independent mismatch**

MBMS plots in WCDMA analysis uses the Service independent bearer and terminal configuration. Therefore, when MBMS is analyzed, Service independent plots will always be generated. This will happen even if Service independent plots were not selected in the Calculation result tab of the WCDMA analysis.

- **RSRP signal strength offset must be specified when using LTE measurements for tuning**

When importing LTE Scanner data from TEMS Investigation, note that scanned RSRP values are not directly comparable to raw signal strength needed for model tuning. The reason is that RSRP is not transmitted over all resource elements/RBs, which makes the signal weaker and gives a constant offset as compared to raw signal strength. This offset must be specified in the "Signal strength offset" field in the TEMS Investigation import dialog. The size of this offset depends on the LTE network and band configuration.

- **No support for repeaters in LTE Fixed subscriber calculations**

TEMS CellPlanner does not support repeaters in LTE Fixed subscriber calculations.

- **4 RX antennas handled as 2**

In the Analysis tab of the LTE cell editor, it is possible to configure 1, 2, or 4 RX antennas. A setting of four RX antennas is not supported in the analysis; it is handled in the same way as two RX antennas.

- **No write-permission check in traffic spreading**

The live traffic spreading functions create new map files. This implies that the user running TEMS CellPlanner must have write access to the map directory, as defined in Project Settings. Otherwise the new map files can not be created. The log will contain the message:

TrafficDensityMapGenerator.generate Failed to close traffic density writer

Workaround: allow write access for the user in the map directory.

Alternatively, copy the maps to a directory where the user has write access and change map directory in Project Settings.

- **WiMAX Spider cursor - choice of frequency to display is out of control for the user**

In WiMAX projects with multiple frequencies, the spider cursor does not work correctly in some cases. Specifically, if the Received power raster contains more than one frequency, the cursor shows only one of the frequencies, and the choice of displayed frequency cannot be modified.

- **AMI plots showing measurements not aligned with actual measurements**

AMI plots displaying locations for measurements are deliberately displaced by half a bin. This is needed in order for the AMI plots to align with pathloss plots.

- **Result plots window sometimes not updated correctly**

Normally, the selected plots in the Result plots window correspond directly with the displayed plots in the map window. For example, if a plot is unselected in the Result plots window, it should disappear from the map window, and vice versa. However, there are some cases where this does not work correctly. Specifically:

- When a plot is removed as the result of a Map favorite being loaded, it will still be selected in the Result plots window.

- When removing a plot through the Map properties window, it will still be selected in the Result plots window.

Workaround: Click anywhere in Result plots window.

- **Plots with renderer Continuous and low variety of values get superfluous scale entries**

If a plot is shown with a Continuous color scale, and the plot data contains just a few different values, the scale will contain more entries than the number of different values. This is confusing since the same value will have more than one entry in the legend.

Workaround: If this happens use the threshold renderer instead.

- **Changed map settings when editing survey plot affects main map view settings**

If the map settings are changed when editing a survey plot, the main map view will be drawn incorrectly. For example, if zooming while editing the survey plot, the main map window will then be drawn incorrectly, with different zoom levels for different layers.

Workaround: Force a redrawing of the main map by for example zooming in and out again.

11 TEMS CellPlanner product packages

The TEMS CellPlanner product consists of different modules to meet different customers' needs. Combine the Base module with Technology, Optional modules and Optimization modules.

Database server options:

- Enterprise server
- Zero admin server
- No database

Base module:

- Single user license
- Floating network license

Technology modules:

- GSM
- WCDMA
- LTE
- WiMAX

Optional modules:

- HSPA for WCDMA

Optimization modules:

- AFP - Automatic Frequency Planning
- ACP – Automatic Cell Planning
- AMI & ASMT – Automatic Measurement Integrator & Automatic Sector Model Tuning

A standard TEMS CellPlanner product package consists of the following:

- TEMS CellPlanner installation DVD including soft copy of User manuals
- Installation Note
- Demonstration Project and demonstration Map data
- Release Note

12 Contact information

Please visit our web site at www.ascom.com/networktesting.

You will also find the latest technical information, FAQs and downloads of patch release on the Technical Support web pages at our web site.

To receive product updates and patch release information, sign up for the TEMS Subscription Service at TEMS web site.

Appendix I -

Addendum

Additions to the TEMS CellPlanner 9.0

User documentation

1 Additions and clarifications to different parts of the TEMS CellPlanner 9.0 User documentation

1.1 Administrator rights is needed when running scripts

It is not possible to execute Jython scripts unless the user running TEMS CellPlanner has administrator rights.

1.2 How to allocate licenses, on a license server, to a limited group of users

Suppose you have:

- 3 licenses of INTERNAL, version TCP_LI_2
- 4 users called user1, user2, user3, user4

These 4 users, and no other, should be able to use the 3 licenses

1. At the license server, activate the Services panel, in W2000 via Programs-Administrative Tools-Services in Vista via Control Panel-Administrative Tools-Services
2. In the Services panel, open the SentinelLM service, (rightClick-properties). Check where the service was installed, "Path to executable"
3. Go to this directory
4. Create a file, called lsreserv, with following content:

```
# Created By SentinelLM Group Manager ::: 7.2.0 ::: 1.0
INTERNAL,TCP_LI_2:OUR_GROUP:3:user1 user2 user3 user4
```
5. Restart the service SentinelLM (right-click and order this)
6. Start the WlmAdmin.exe program, i.e. from the bin folder in TCP
7. Choose the license server machine
8. In WlmAdmin, check the license INTERNAL version TCP_LI_2. 3 licenses should be reserved

1.3 TEMS CellPlanner supports single-byte character sets.

TEMS CellPlanner does not fully support multi-byte character sets.

1.4 PlaNet backdrop data shall be imported through the Import Wizard

It is recommended to always import PlaNet backdrop data through the Import Wizard.

In some cases the PlaNet backdrop data contains data that the PreProcess raster tool can not handle automatically. Therefore it is better to use the Import Wizard where you have the possibility to manually adjust how the data shall be imported. Note that the backdrop data should be imported as files, not as database.

1.5 Interpretation of ground height

The ground height of an antenna branch is typically set to zero, which implies that the pathloss algorithm uses the height specified by the elevation map at the geographical position of the antenna.

However, the elevation map is re-sampled to the same resolution used in the pathloss calculation, which means that the effective antenna height may be different in different resolutions.

When a **coarse pathloss resolution is used in hilly terrain**, this may give a large difference in effective antenna height. In such cases, it is recommended to either **use the full map resolution when running pathloss**, or explicitly **set the antenna height to the correct value** in the Antenna branch editor.

1.6 Option "Sites modifiable" overrides individual Site permissions

In the TEMS CellPlanner administration window, there is a project option named "Sites modifiable". Selecting this option will override the individual site permissions set by the administrator in the Edit site permissions window. If the administrator selects to select Site modifiable for a project it is still possible to view and edit the individual site permissions, but the settings will not take effect until the option Sites modifiable is unselected.

1.7 What could happen if a user takes long time to resolve conflicts in the TEMS CellPlanner Enterprise Server environment?

First a short description of this situation, with a scenario of two users updating the same parameter in the database:

1. Users A and B both change the same object in their private workspaces.
2. User A publishes his/her change. The database is updated with the new value (for example X).
3. User B now publishes his/her change. The conflict is displayed in the Resolve Conflicts window. Here user B shall take a decision to publish his/her value or accept the one published by user A, but for some reason he/she waits with the decision.
4. In the meanwhile, user A has set a new value of the object in his/her private workspace and now publishes the change. The database is updated with the new value (Y).
5. User A is now ready to take a decision about the conflict in the still open Resolve Conflicts window. As TEMS CellPlanner does not support updating the window with changes done after the first conflict was presented, user A does not see that the object in the database has changed to value Y. User A can only select to publish his/her private workspace value, or accept the value in the database (which he/she thinks is X, but in reality it is Y).

To minimize the risk for lost updates minimize the time spent deciding on conflicts.

It is always safe to cancel the publish i.e. restart the conflict resolution with the latest changes. Since Publish is performed on the stored data in your private workspace and the stored data in the main projects nothing will be lost if you cancel Publish.

1.8 The permissions system is enforced when you make changes that affect other people i.e. you publish your changes to the main project

You are allowed to change your private workspace regardless of permission.

This is allowed in order to be able to make changes that you never intend to publish. When you publish changes the permissions are checked to make sure that you only change things that you are allowed to change.

When a user tries to publish a change in conflict with the user's permissions in the project, the publishing fails.

As all permission violations must be resolved before a change in the project can be published, a change requiring special permissions blocks the entire publishing if the user does not have these permissions.

You can use the partial publish to publish a part of the project and partial refresh to refresh a part of the project.

1.9 OSS-RC WCDMA: Importing large files to a large project

In 32-bit version of TEMS CellPlanner, the OSS-RC WCDMA import may run out of memory, if both the import file and the target project are relatively large (a couple of thousand sites each).

Before running OSS-RC WCDMA import, start the Application Preferences utility and make sure that “Max Memory Allocation” for the Client Application is set to the maximum possible (1200 MB for 32-bit TEMS CellPlanner). Note that TEMS CellPlanner must be restarted for the change to take effect.

If the OSS-RC WCDMA import still runs out of memory, the solution is to run TEMS CellPlanner on a 64-bit operating system with sufficient amount of memory.

Importing a large OSS-RC file into a new (empty) project does not require as much memory as if both the import file and the target project are relatively large and it can be sufficient with the 32-bit version of TEMS CellPlanner.

1.10 Rules for OSS-RC WCDMA Import into an existing TEMS CellPlanner project

The easiest way to use OSS-RC WCDMA Import is to start a new project from scratch and import the entire network from OSS-RC. In that way all objects in the projects (Subnetwork, RNCs, RBSs, Sectors, cells, etc.) are guaranteed to have the correct OSS-RC ids from the beginning and subsequent OSS-RC exports and imports will work smoothly.

The situation is a bit more complicated if you are using OSS-RC WCDMA

Import to update an *existing* TEMS CellPlanner project that has not been created with OSS-RC Import. In this case the objects in the project don't have any OSS-RC ids, yet, which makes it more difficult for the OSS-RC WCDMA Import function to figure out which TEMS CellPlanner object corresponds to a certain OSS-RC object. In order for the import to succeed, your project must comply with the rules listed below. Not following the rules below may result in creation of duplicate objects in the project, or the OSS-RC objects being mapped to the wrong TEMS CellPlanner objects.

Rules to follow when performing first time OSS-RC WCDMA Import into an existing WCDMA project:

Subnetwork (Optional)

- If present in the project, it must have the same name as the root Subnetwork in OSS-RC. Optionally the name may be prefixed with the Subnetwork name

prefix from Project settings->Object names.

- If not present, the Subnetwork will be created by the Import.

Rnc (Optional)

- If present in the project, it must have the same name as the corresponding RNC in OSS-RC. Optionally the name may be prefixed with the Rnc name prefix from Project settings->Object names.

- If not present, the Rnc will be created by the Import.

Rbs

The RBS objects must have the same name as the corresponding RBS in OSS-RC. Optionally the name may be prefixed with the Rbs name prefix from Project settings->Object names.

Sector

There are three alternative ways to match Sectors. The alternatives are tested in the order below, i.e. try (1) first, if that fails, try (2), if that fails try (3).

(1) Using azimuth: For this to work, Sector->AntennaBranch->Antenna->beamDirection must be the same as the beamDirection of the corresponding Sector in OSS-RC. Furthermore, the beamDirection of each Sector must be unique within the Rbs.

(2) Using RBS name+letter suffix: For this to work, the Sectors in OSS-RC must be named "1","2","3",.... and the corresponding Sectors in TEMS CellPlanner must be called *RBS_nameA*, *RBS_nameB*, *RBS_nameC*, ...

(3) Using any name: Each Sector in TEMS CellPlanner must have the same name as the corresponding Sector in OSS-RC.

UtranCell

There are two alternative ways to match UtranCells. The alternatives are tested in the order below, i.e. we try (1) first, if that fails, we try (2).

(1) Using Sector name+carrier number: For this to work, the UtranCell on carrier 1 must be called *Sector_name1*, and the UtranCell on carrier 2 must be called *Sector_name2* in the TEMS CellPlanner project.

NOTE: The UtranCell names and RbsLocalCell names from OSS-RC are not used for matching, they are only stored as Custom Attributes.

(2) Using localCellId: For this to work, the localCellId in TEMS CellPlanner must be set to the same value as the localCellId of the corresponding UtranCell and RbsLocalCell in OSS-RC.

AntennaBranch

Only one AntennaBranch per Sector is imported from OSS-RC: the "A" branch, since TEMS CellPlanner does not model antenna diversity.

Therefore, it is recommended to have only one AntennaBranch per Sector also in the TEMS CellPlanner project. If a Sector has more than one AntennaBranch nevertheless, then the relevant one should be given the default name, which consists of *AntennaBranch prefix* (from Project settings) + *Sector name*.

1.11 Bulk CM bug in OSS-RC R4 affecting import of Feeder cables

There is a known bug in OSS-RC R4 regarding the Bulk CM interface: the AntennaBranch reference attribute of Feeder cable is missing from the Bulk CM file. This means that when importing a Bulk CM file from OSS-RC R4, we cannot know for certain which AntennaBranch each FeederCable belongs to, since the FeederCables are listed on RBS level.

As a work-around, the OSS-RC WCDMA Import makes an assumption that the feeder cables are listed in the same order as the AntennaBranches in the Bulk CM file. This usually works; however, there is no guarantee. Getting the wrong Feeder cable for an AntennaBranch may result in getting incorrect "Override attenuation" values for the AntennaBranch.

To avoid this problem, you can *unselect* the "Feeder cable attenuations" parameter when importing from OSS-RC. (See File->Import->OSS-RC WCDMA->Antenna equipment tab).

NOTE that this problem only exists in OSS-RC R4. The bug is fixed in OSSRC R5.2 and higher versions.