POS5.3.01 RELEASE NOTE

POS5.3.01 introduces support for parallel computing on Linux clusters as well as several bug fixes. The Linux-cluster version of POS5 is available at no additional costs for all users with at least one floating license for Linux. The implementation is based on MPI and allows the optimisation of surface variables to be performed in parallel, thus reducing the optimisation run time significantly. Three versions of MPI are supported: 32-bit MPICH1, 64-bit MPICH2, and 64-bit Open MPI. The former two supports Ethernet networks only, whereas the latter supports various network hardware, including Infiniband. Please contact TICRA if your Linux cluster configuration is not compatible with the options mentioned above. The MPI version of POS5 is described in details in the POS5 MPI manual that can be found in the POS installation directory.

POS5.3.01 has been tested on Windows 7. Two minor issues are listed in the known problems section.

Please consult the list below for further information on this release.

Contents:

New features in POS5

Ticket No.	Description of new feature
39	**MPI Linux cluster support** The ``optimise'' command involving surface variables is the most time consuming part of a POS5 simulation, and is therefore the only POS5 command which is parallelised with MPI. In each iteration performed in this command, POS5 compares the obtained residuals with the specified goals and suitable derivatives are calculated to determine a new set of variables to be used in the next iteration. When using MPI the serial update task of determining this new set of variables is performed by the master only, whereas the calculation of the currents and fields in each task, as well as the derivatives, is parallelised. PTD calculations, however, are not parallelised, but perfomed only by the master. It is always beneficial if the master is the fastest computer in the Linux cluster.
1121	**License queuing for command-line POS running on a counted license** The default behavior of POS is to abort immediately if the maximum number of users is reached on a counted license. This is not always convenient since a specific user that receives a license denial needs to manually restart the job later when the license is freed by other users. POS5.3.01 now offers a possibility for placing the job in a queue until the license is granted. This functionality is enabled by setting the environment variable POS_LICENSE_QUEUE=1 which will force a POS job invoked on the command line to wait until a license is available. The GUI version of POS always needs a free license to run and it is therefore not affected by this environment variable.

Bug fixes in POS5

Ticket No.	Bug fix description
964	**Renaming of object to resolve missing reference does not work** If a ghost object is present, i.e., when a non-existing object is referenced by other objects, it is not possible to use the right-click and "rename" option to resolve the situation. If this is attempted, POS is left in an inconsistent state.
1143	**Error when optimising arrays using more than one processor** The optimisation of array excitation coefficients produced erroneous results when using more than one processor of a mutli-core PC and when the allowed number of iterations being set considerable higher than necessary for convergence.
1233	**Wrong far-field calculation** The calculation of far fields was wrong, resulting in a non-converging optimisation, if one of the following conditions were fulfilled: 1. The far-field attribute of the optimisation_task object contains at least one reference to a po-calculation object, and the first is a reference to a feed object. 2. The far-field attribute of the optimisation_task object contains references to at least two po-calculation objects, and the last reference if one to a feed object. 3. The far-field attribute of the optimisation_task object contains references to po-calculation objects for a main reflector and at least one subreflector, and only the surface variables for the main reflector are optimised.
1243	**New coordinate systems not working** The two new coordinate system classes coor_sys_grasp_angles and coor_sys_euler_angles, introduced in POS5.2.01, could not be used.
1265	**Crash when using non-initialised PO-currents** If PO-currents are used that are not previously calculated, POS5 now issues an error message instead of crashing.
1276	**Factor attribute not working** The factor attribute in the standard_po class had no effect.

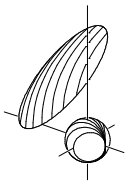| Ticket No.	Bug fix description
1303	**Optimisation of material grid orientation not working** Optimisation of the material grid orientation did not work if the corresponding reflector was not optimised.
1370	**Slow convergence when optimising subreflectors with materials** The numerical calculation of derivatives was wrong when optimising subreflectors containing special surface materials, resulting in slow convergence.
830	(Linux platform only:) **OK button disabled** The error message window displayed in the Linux GUI can only be closed by closing the window in the upper corner. The OK button is not active.
834	(Windows platform only:) **GUI crashes if active directory is deleted** The POS GUI may crash if the current working directory is deleted by the user. This can only happen if the files are stored on a drive without file locking (e.g. a NFS share on a Linux machine).
1168	(Linux platform only:) **GUI crashes when plotting an empty project** The POS GUI may crash if the OpenGL plot is activated and there are no objects to be plotted.
1247	(Linux platform only:) **POS crashes on newer Redhat systems if the user is authenticated via LDAP** The POS analysis core crashes on newer Redhat systems if the user is authenticated via LDAP and a floating network license is used. Nodelocked licenses, as well as local user accounts, are not affected.

Bug fixes in the Post Processor

Ticket No.	Bug fix description
1218	**Input field step does not finish** On some computers, for specific combinations of service packs, the "Input field" step of the contour plot never finished.
1232	**Menu items associated to G/T add-on do not appear** Customers with the G/T add-on license were not able to see the associated menu entries despite of a correct license installation.
1266	**Antenna repointing using theta-phi values** If the antenna is repointed in the "Satellite/Antenna pointing data" dialog the mode "Antenna repointing in theta-phi" showed the theta and phi values interchanged.
1352	**Crash when reading a project file with wrong path to all cut files** The post processor crashed in the case where no valid cut files were found. The correct error message is now displayed.
1354	**Crash when reading project file** If the project file path was exactly 80 characters long the post processor crashed. A path longer than 80 characters resulted in the project file not being read and no error message was issued. The post processor now works with longer paths.
1372	**Wrong colour for zero field in raster plot** If the field level in some areas of the raster plot was very low (or zero if no field info was given) the colour could sometimes be displayed wrong.

Known problems in POS5

Ticket No.	Bug fix description
	(Windows Vista and Windows 7 platforms only:) **Warning during installation of dongle drivers** When POS is installed on a node-locked license with a USB dongle, Windows Vista/7 might report a potential problem during the final steps of the POS installation. The warning message is "This program might not have installed correctly" which should simply be ignored by clicking "Program installed correctly".
	(Windows Vista and Windows 7 platform only:) **POS help file cannot be displayed** The POS help file accessed via the "Help" menu requires a Windows component that Microsoft no longer includes in the default installation packages. This missing component can be downloaded from Microsoft's site by following the on-screen instructions.