4.9.3

Applicable User's Manual: GTD 4.9.0

- Fixed a bug on polar diagrams: low dB values were not in the right color.

4.9.2P1

Applicable User's Manual: GTD 4.9.0

No modification

4.9.2

Applicable User's Manual: GTD 4.9.0

No modification

4.9.1

Applicable User's Manual: GTD 4.9.0

Modifications

Far Field module

- Correction of the routine getting the reflected rays on cones
- Improve the robustness of the function getting the reflected rays on antennas
- Correction of the routine getting the diffracted rays (rays impacting on the last part of the edge were missing)

All modules

- Adapt tolerance parameter value to better capture the diffracted rays (some rays were missing on an Antenna defined with focal compared to an Antenna with focus).

4.9.0

Applicable User's Manual: GTD 4.9.0

New feature

- GTD will automatically convert the generated PS files to PDF if a ps2pdf executable is defined in environment variable GTD_PS2PDF.

4.8.3P1

Applicable User's Manual: GTD 4.5.2

Corrections

- Bug fix in the SDS/HDF5 library (h5 close on Windows)

4.8.3

No Change. Applicable User's Manual: GTD 4.5.2

4.8.0

No Change. Applicable User's Manual: GTD 4.5.2

4.7.0

Far-Field results have been consolidated with the optimisation of curved interactions (multiple solution, correction of wrong double solution at 360° of a curved edge, improvement of multiple solutions management)

4.5.2

Major Updates

- Beam management
- **NEW FAR FIELD MODULE:**

  The Far Field Antenna Patterns are now included in the SYSTEMA-GTD package, including Theta / Phi cuts plots and Polar diagrams.

Minor Updates

- New analytical (or semi-analytical) algorithms for path correction

Corrections

- Small error in diffraction coefficients
- Curvatures of diffracted field by curved edges not correct
- Diffraction local frame not always well oriented
- Diffraction edge normal of reflectors not well oriented

4.5.1

First GTD V4 release

Based on the **Systema V4** framework, Astrium has developed an application for solving antenna's decoupling and evaluating the electromagnetism power on specific targets or apertures. Based on the General Theory of Diffraction (GTD), this tool uses a corrected forward ray-tracing technique which is particularly efficient for solving antennas - structure interactions in the high frequency domain.

The main features of Systema - GTD are:

- The GTD tool is able to model all main antennas currently used on satellites by several means. It offers a database of theoretical antennas (standard feeds, cardioids) and the import of custom profiles (Measured or Spherical Wave Expansion formats).
- The GTD tool consists of a complete radio-frequency prediction tool for large structure. It is used to propagate the electromagnetism field from the antenna sources to different points of interests such as:
    - other antennas: to compute the decoupling between them
    - targets: to evaluate the incoming field and decoupling at a specific location
- The rays may undergo single or multiple interactions (reflection, diffraction) before they finally reach their final destination. In this version of the software a maximum of 2 interactions can be processed.
- The can be displayed in several ways:
    - Mapping of field on a surface
    - Ray-path with filtering options
    - Decoupling between antennae

Besides a dedicated module called InCa is available to compute the field inside cavities. The goal is to assess the E-field inside the spacecraft cavity due to external antenna radiation and internal RF unit leakages. The method of computation is based on the Oversized Cavity Theory.