HTZ Warfare & HTZ Communications
UPDATES FEBRUARY 2023

BROADCAST + CCTV + PMSE
= CCTV: vertical angle = +-90 deg
= Launch delay assignment faster (algorithm not changed)

PROPAGATION MODELS / CALCULATIONS
= Coverage modification + Tx coverage (oriented antennas)...: 2D Vertical pattern added
= Coverage modification 2D pattern: takes into account electrical or mechanical tilt
= ITU-R M.2412 (report) model added (for UMa and UMi channels)
= Indoor/Tunnel environment: The 3D reflections model has been improved for Indoor environment.
3D reflections won't be computed on pixels:
- with IDR codes <= 0 or >= 10;
- if IDR code <= "Elevation filter"
To perform coverage calculations in Tunnels with 3D reflections:
- draw the walls of the tunnel with IDR code = 10;
- draw along the walls of the tunnel at least a line with IDR code = 9 (or another one not used yet between 1 and 9) and set the Indoor attenuation to 0dB for this code
- inside the tunnel, set IDR code to 0
- outside the tunnel set IDR code to 10.
NB: Do not use a 2D refection model in addition to the 3D reflection model. Ground reflections are also taken into account by the3D model with "Elevation filter" >=-1.

MOBILE
= Improved function on 5G Non-Standalone (NSA) coverage analysis: In a 4G station best server coverage without 5G station associated, there is no 5G coverage.

SATELLITES (the demo video shows this improvement)
= Antenna AP S8 added
= Satellite database: New NGSO calculation modules
Since ICS manager noDB exports: number of satellites per plan and min anomaly, orbit is now computed from min anomaly to 360, the anomaly step is max(MinStepAnomaly, 360. / nb Sats per plan). MinStepAnomaly can be set in DB satellite window.
- Export of satellites from ICSM to HTZ
Only 1 satellite is created per orbit inclination and per beam. The number of satellites following the same orbit but with a different anomaly (starting point of the orbit) is also exported to the SAT file (but is not visible) and is used to compute the anomaly step (see below). In that way, only 1 satellite is created instead of 240 in the UMUTEKANO example.
- Satellite database of HTZ
A min anomaly step has been created (user defined or from satellite database)
The orbits will be derived from the initial parameters (with min anomaly defined in the SRS database) for the different anomalies from min to 360°with the following step: max(Min Anomaly Step, 360/ Number of satellites per plan).
If the step is set to 0, only the anomaly set the in the Satellite parameters will be considered.

= Wifi 6 settings and IRF/CI (tables) added (demo video)

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