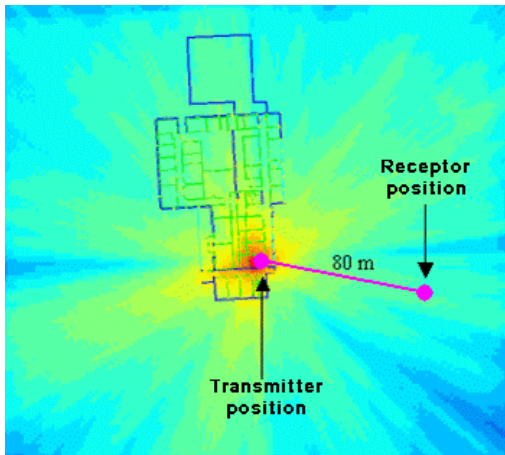
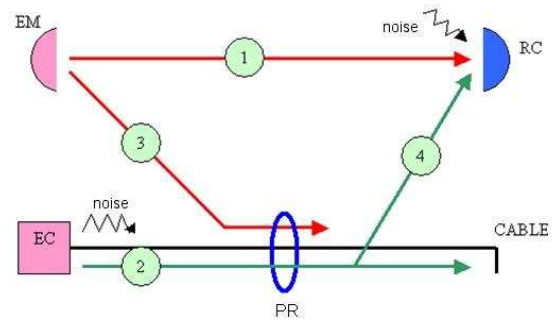


SLC v4.4

Conduction and radiation software

The SLC tool is the SILICOM simulation software for calculating waves propagation prediction relying on the following modes :

1. The **radiation** from a transmitter EM to a receptor RC
2. The **conduction** of the wave generated by a source EC along a cable and measured by a probe PR
3. The **coupling wave** radiated by a transmitter then the conduction of this wave measured by a probe PR
4. The **conduction** of the wave generated by a source EC whose radiation is captured by a receptor RC

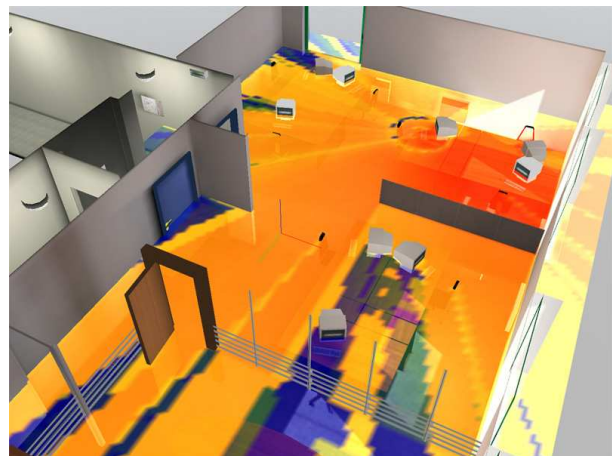


Built-in simulation components are :

- Radiating noise captured by the receptor and dif-fused noise along the cable
- The EM source (radiation) is defined by power, frequency, antenna (radiating pattern), gain vs. frequency, elevation and azimuth angles, and transmitted spectrum
- The EC source (conduction) is defined by voltage-tension, frequency and spectrum
- The cable is defined by its geometry (details of sub-segments), section, impedance, RLC loads...
- The receptor and the probe are defined by the antenna, the tuning frequency and the selectivity

Some applications :

- Base stations and cellular mobile communications (GSM, GPRS, UMTS, DECT...),
- Wireless transmitters (WiFi, 802.11, Bluetooth, RLAN),
- Hardware devices (screens, cables, computers, wireless keyboard and mouse),



Conduction and radiation software

Propagation models included in SLC software simulate phenomena from 50 Hz up to 5 GHz in various environment types :

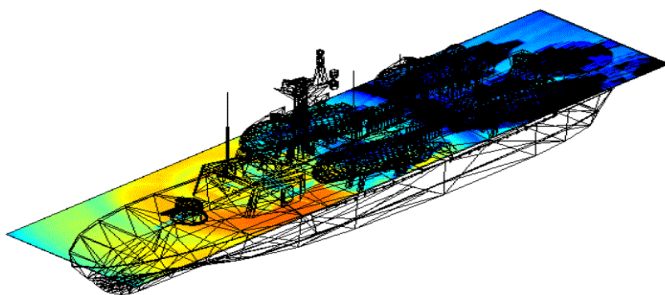
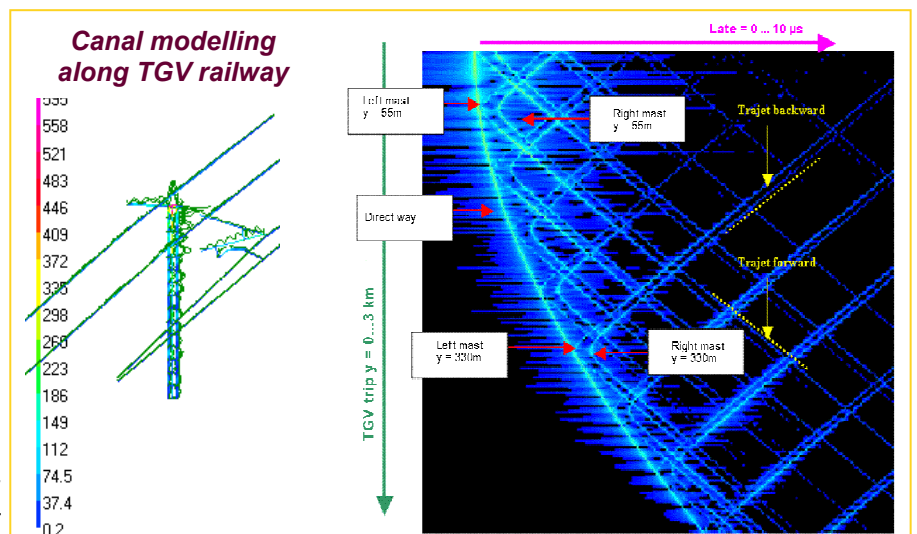
- Indoor
- Outdoor (Urban, Suburban, rural)
- Both

For propagation mode, SLC software uses several radiation models in order to provide field level from a transmitter at a defined location (a receptor location or a point along a cable) :

- Free path losses
- Indoor model : 3D ray tracing
- Deygout model
- Outdoor model : Deygout + 3D ray tracing

For conduction or coupling modes, the SLC software uses :

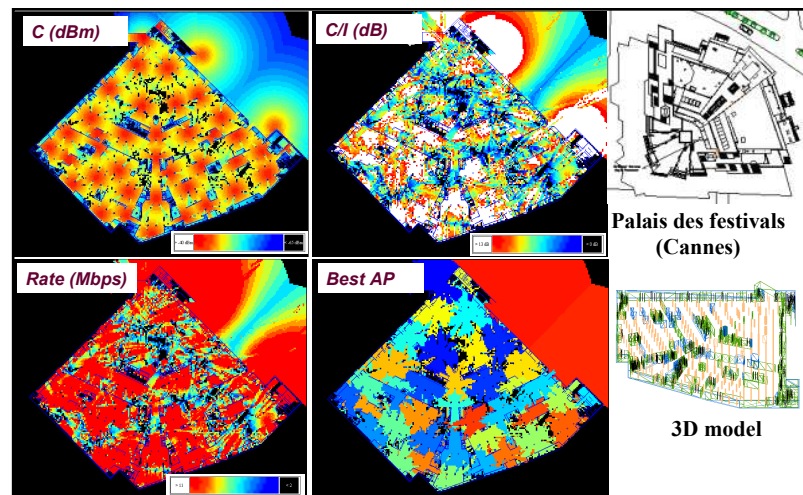
- Simple model from open source
- Built model from electromagnetic software (Method of moments)



SLC software provides various result maps :

- Field level
- C/I level taking with the noise
- Best server positions
- Rate

Optimisation method, based upon image processing, allows to obtain these kind of results (ray tracing in-door, reflexions and transmission) in a time of less than 1'30 per transmitter.



Radiation software GUI

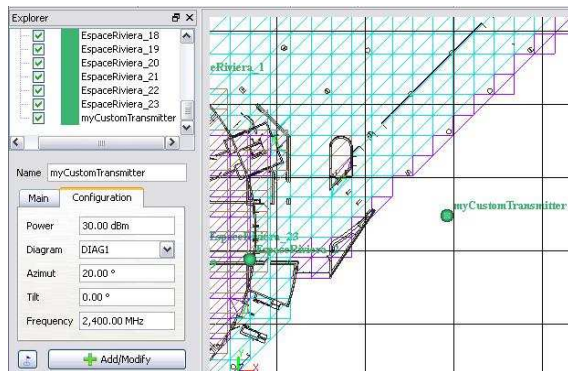
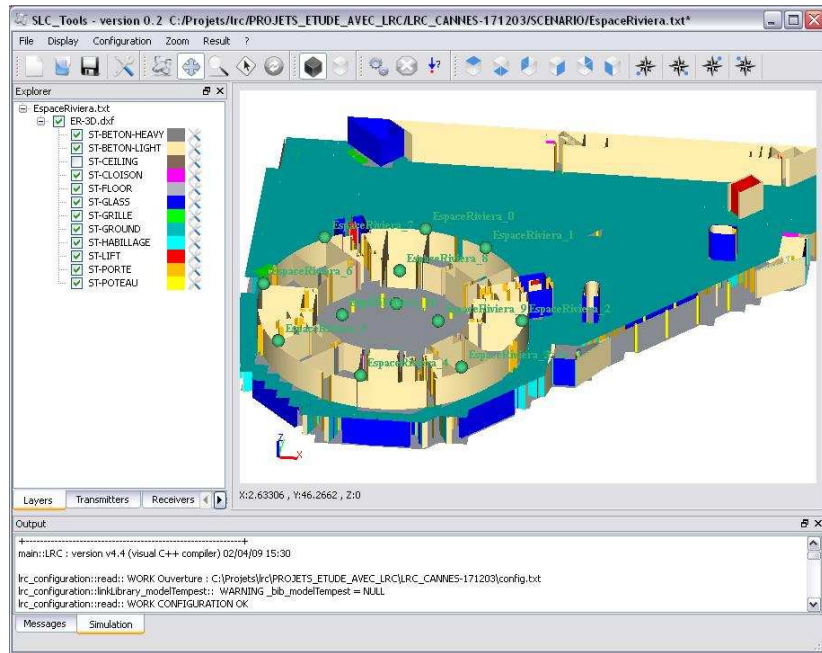
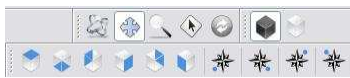
SLC tools GUI is useful to manage Radiation Simulations.

Provided features :

- 3D-Scene modelling in meters from **DXF** format to **Opengl**
- Configuring simulation scenario
- Launch the simulation
- Analyze results

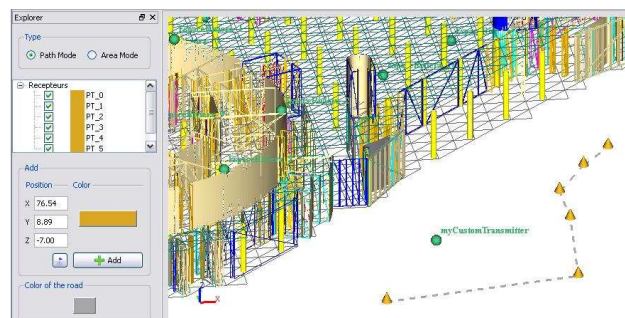
3D-Scene management:

- Multi-layer presentation
- Configure layers
- Import **DXF** Scene
- View (rotate, zoom...)
- Rasterization mode



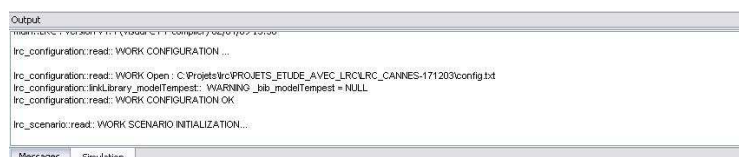
Simulation configuration :

- Configure transmitters, receptors grid or road positions by clicking on the 3D view.
- Select and configure Propagation Models



Simulation :

- Start, cancel simulation process.
- Visualize simulation outputs

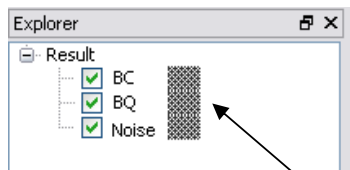
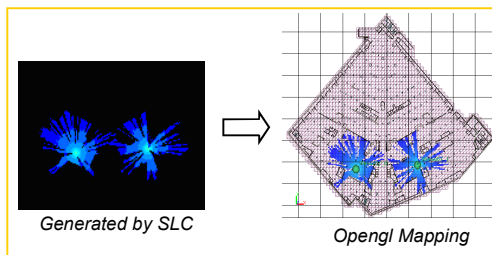


Radiation software GUI

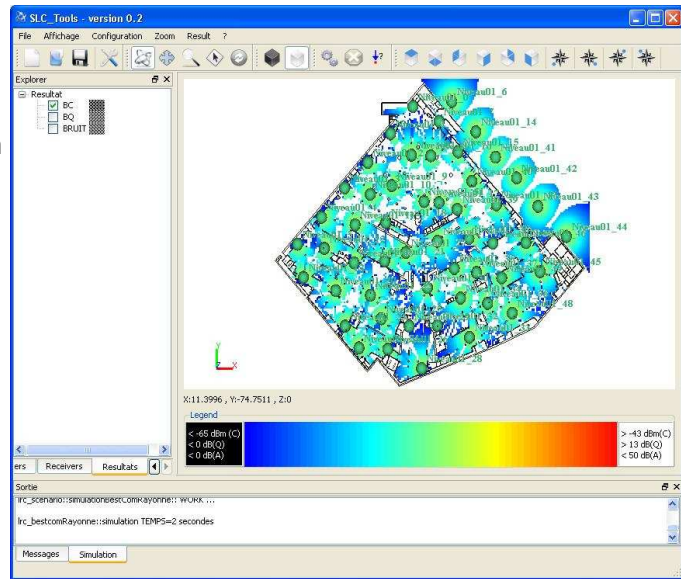
Simulation results management

- View results in the 3D View
- Multi-results display, transparency can be set for each result layer
- Configure legend colors
- Visualize detail results

OpenGL result mapping



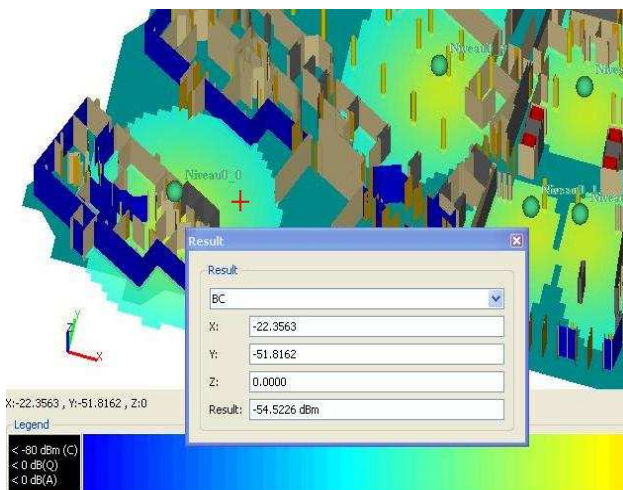
Transparency of each layers



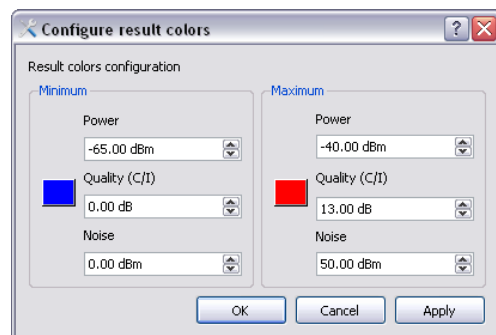
SLC Tools GUI provides various maps :

- Best Coverage (dBm)
- Best Quality (C/I) (dB)
- Noise (dBm)

View the result of a specific area



Configure legend colors



Hardware Requirements

- 2 GHz 32-bit (x86) or faster processor
- Windows XP Professional SP3
- 1 GB of system memory (minimum)
- 128 MB of graphics memory (minimum)
- 1280 x 1024 display resolution with true color