1.5 Applicability of SEAMCAT to spectrum engineering problems

SEAMCAT can address virtually all radio interference scenarios on terrestrial[1] paths in both co-channel (sharing) and adjacent frequency (compatibility) interference studies. This flexibility is achieved by the way the system parameters are defined as variable (or constant) through their distribution functions. It is therefore possible to model even very complex situations by relatively simple variations of some elementary functions. A number of various wireless services can be modelled using SEAMCAT, such as:

- Broadcasting: terrestrial systems and Earth stations of satellite systems;
- Fixed Services: Point-to-Point and Point-to-Multipoint fixed systems;
- Mobile Services: Land Mobile Systems, Short Range Devices and Earth based components of satellite systems.

Section 1.9 presents various radio systems that have been simulated in various ECC Reports.

In general, SEAMCAT may be used to address the following spectrum engineering issues:

- Sharing studies between different radio systems operating in the **same** frequency band;
- Compatibility studies between different radio systems operating in **different** frequency bands;
- Evaluation of transmitter and receiver masks;
- Evaluation of limits for certain system parameters, such as transmitter unwanted emissions (spurious and out-of-band), and receiver blocking or intermodulation levels.

SEAMCAT assumes a flat Earth model for calculating path geometries and propagation losses. This limits the range of considered standard interference scenarios to terrestrial configurations and non-path-specific propagation models. Certain aeronautical and space-to-Earth paths can also be modelled if suitable propagation models are used.

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