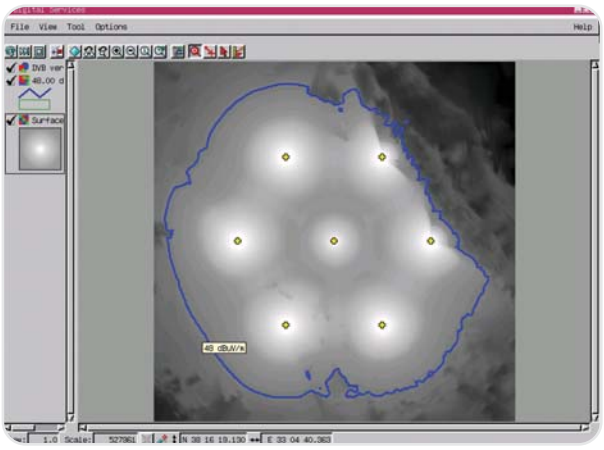
broadcasting module

SES – Broadcasting Module is an excellent tool which is specially designed for applications consisting of analog and digital broadcasting services. Just as in other SES products, this module provides comfort during your network studies besides achieving cost reductions.



Useful signal levels for an SFN in DVB-T analysis

SES-Broadcasting Module focuses on the following features:

- Terrestrial Digital Audio/Video Broadcasting analysis
- Interference analysis between various services:
  - FM Sound Broadcasting/Analog TV
  - Digital Broadcasting – Analog TV
  - FM Sound Broadcasting – Aeronautical Services
  - Broadcasting – Fixed/Mobile Services
- Desensitization

FM SOUND BROADCASTING / ANALOG TV

In analog systems, the interference between radio stations is unavoidable. This is also an unwanted situation between TV stations. SES – Broadcasting Module lets you identify your stations suffering from interference. Study results showing the most interfered areas and the amount of interference in your service area are generated. You can find out the districts and total population in the interference-free coverage area in order to make rearrangements for providing a good quality broadcasting service. SES – Broadcasting Module gives you the most realistic picture of your market land.

During the analysis of analog broadcasting services, the following ITU Recommendations are followed:

- Rec. ITU-R BS.412
- Rec. ITU-R BT.417
- Rec. ITU-R BT.655

In order to perform analog broadcasting analysis, this module makes use of the SES – Basic Module for defining your station parameters and finding their coverage areas. Both, one percent and fifty percent time percentage propagation prediction results are used in the interference analysis. You

are able to select the interference type as continuous or tropospheric interference. The minimum required field strength and protection ratio values are user definable.

TERRESTRIAL DIGITAL AUDIO / VIDEO BROADCASTING

New technologies such as T-DAB (Terrestrial-Digital Audio Broadcasting) and DVB-T (Digital Video Broadcasting-Terrestrial) are also major interests of SES – Broadcasting Module. You can make T-DAB analysis both in VHF band and L-band as well as DVB-T analysis in UHF band.

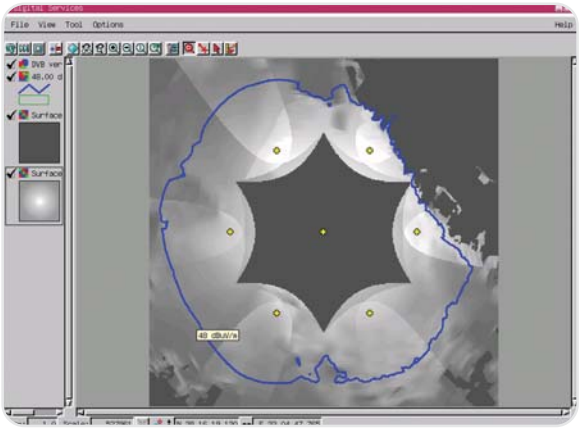
With SES – Broadcasting Module, DVB-T studies can be done in any rectangular area defined by the user. Your T-DAB studies can also be made in any rectangular area or along a route of which the coordinates are defined. You can analyze either a Single Frequency Network (SFN) or a Multi Frequency Network (MFN) both in T-DAB and DVB-T services. Before making an analysis in these services, coverage area studies for stations are carried out by means of SES - Basic Module.

With T-DAB or DVB-T analyses, you can find out the interference-free coverage areas of your networks. SES – Broadcasting Module also calculates the total useful and interfering signal levels, network gain, protection ratio and coverage probability. Coverage probability calculations are done in accordance with the EBU recommendations.

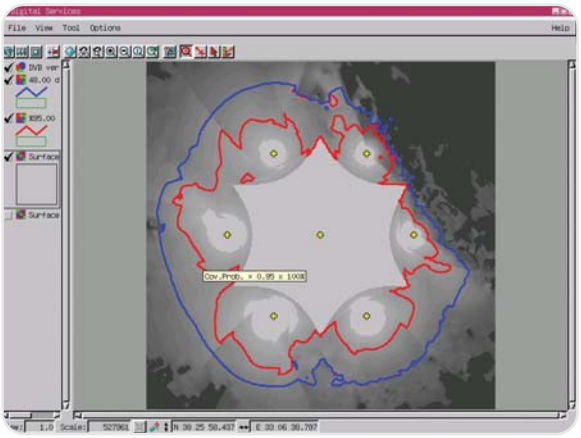
Another aspect of SES – Broadcasting Module is its displaying feature. This feature lets you see your study results graphically. You can display the contours of various levels on the map background. Multiple images or contours can be viewed on the map, simultaneously. You can view the subscriber population inside any contour you select.

T-DAB - ANALOG TV and DVB - ANALOG TV

Terrestrial digital audio/video broadcasting and analog TV broadcasting services may produce interference to each other. SES – Broadcasting Module helps you analyze this kind of interference as well. You can identify the stations suffering from interference and find out the percentage of interference in your service area.



Interfering signal levels for an SFN in DVB-T analysis



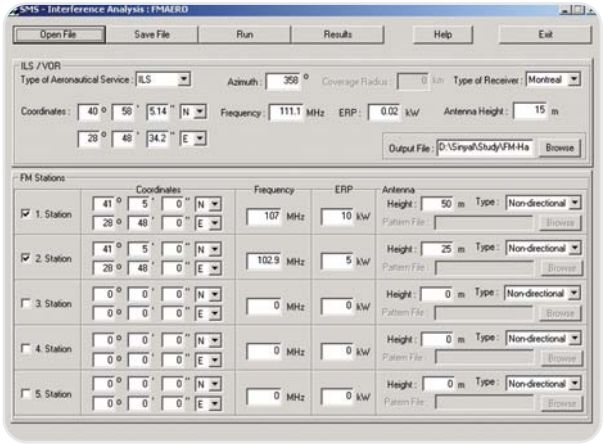
Coverage probability and coverage area plot for an SFN in DVB-T analysis

FM SOUND BROADCASTING – AERONAUTICAL SERVICES

SES – Broadcasting Module gives you the opportunity to analyze the interference between FM sound broadcasting and aeronautical services. For this purpose, it uses the electromagnetic compatibility analysis method described in the Rec. ITU-R SM.1009.

ILS (Instrumented Landing System) and VOR (VHF Omnidirectional Range) systems are used

for communication between airplanes and airports. With SES – Broadcasting Module you are able to select between ILS and VOR. You can determine on the type of interference (A1, A2, B1 or B2) that may occur between these systems and FM sound broadcasting stations. You are also able to define the azimuth for an ILS service or the coverage area for a VOR service during your analysis.



Compatibility analysis between FM Sound Broadcasting and Aeronautical Services

SES – Broadcasting Module allows you to specify the frequency, coordinates, antenna height above ground level and ERP (Effective Radiated Power) for ILS/VOR systems. The existing FM radio stations in your study area are automatically taken into account for calculations. However, you are also able to include the new or proposed FM radio stations that do not exist in your frequency assignment database. Antenna types are available and user selectable.

With the FM sound broadcasting – Aeronautical services analysis, you can find out the type of interference between FM radio stations and aeronautical systems. The ground level and geographical coordinates for an interference situation are also calculated.

DESENSITIZATION ANALYSIS

SES – Broadcasting Module provides you with desensitization analysis. It is important for you to find out the distance where you should locate your receiving stations, in order to prevent the desensitization effect of very high power transmitting stations.