

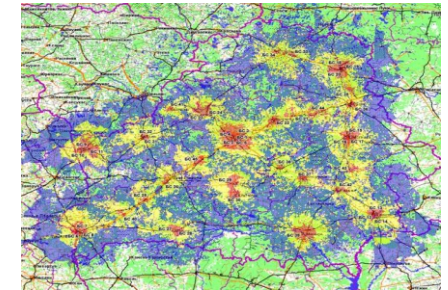
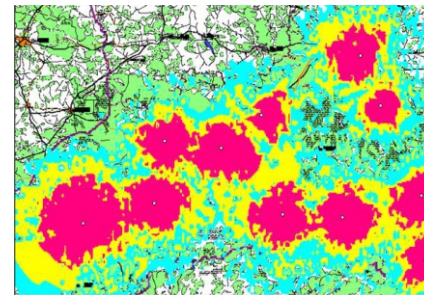
GIS-RF Software Practical Usage

Since 1995, various versions of GIS-RF tools (GeoMap, NFPS, HOP-Designer, etc.) have been used by many customers for system design, EMC analysis and EMC simulation of radio networks and systems. Over 1000 projects have been implemented in Belarus, Russia and other countries and regions, including frequency planning and system design of NMT, AMPS, GSM, CDMA, UMTS & LTE cellular networks, MPT-1327 and TETRA trunking systems, radar and radio navigation networks, fixed service systems in 0.4, 2.0, 10, 14, 17, and 24 GHz bands, Wi-MAX systems in 2.4, 2,7, 3.5, and 5.3 GHz bands, corporate radio communication systems, TV and UHF FM broadcasting systems.

 BELARUSIAN STATE UNIVERSITY
OF INFORMATICS AND RADIOELECTRONICS
tel.: +375 17 293 89 94, +375 17 293 84 38
www.emc.bsuir.by
emc@bsuir.by
BSUIR, 6, P. Brovka Str., Minsk, 220013, Republic of Belarus

GIS-RF

*Specialized Geo Information Technology and Software
for Radio Frequency Development and Design*




BSUIR

www.emc.bsuir.by

Time-tested
RF design tools!

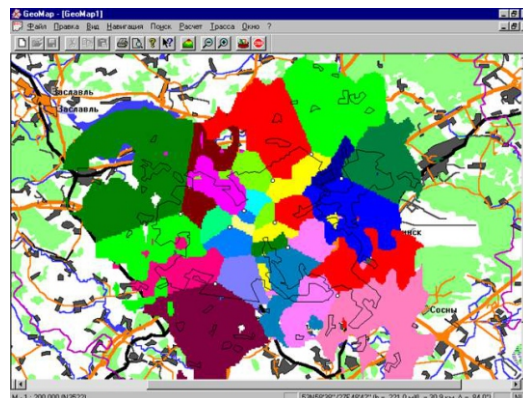
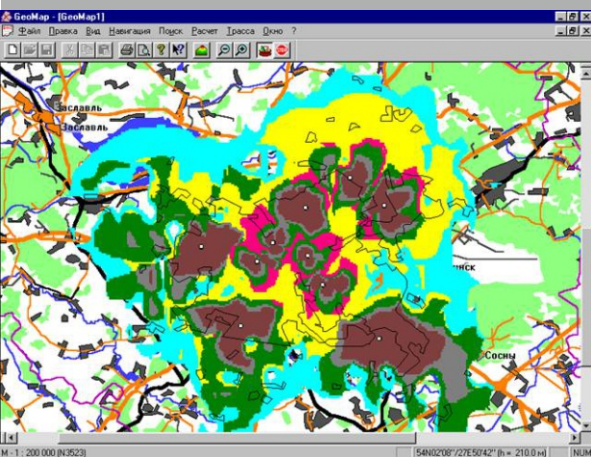


GIS-RF

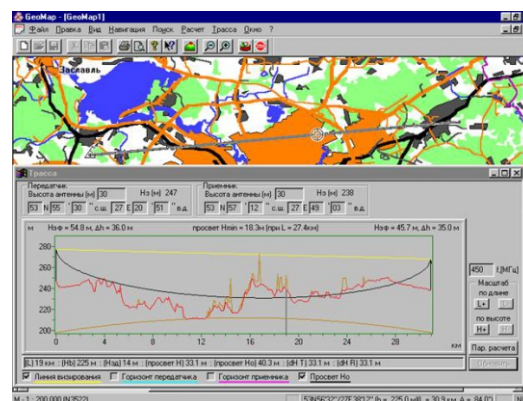
Application Area

• Radio systems' frequency planning and system design, system-level EMC analysis and simulation using geo-information technologies and digital area maps.

• GIS-RF software tools are used for development of complex terrestrially distributed and local ground radio systems of different radio services (fixed and mobile communication, radar, navigation, broadcasting, etc.) in 30 MHz – 40 GHz frequency range using EMC criteria



Specialized Geo Information Technology and Software for Radio Frequency Development and Design



GIS-RF Features that make it attractive

- GIS-RF is a time-tested facility for radio network design & frequency planning and radio systems' EMC analysis & simulation
- GIS-RF is based on the widespread GIS tools and platforms (MapInfo, Panorama, etc.)
- GIS-RF is based on the use of fully tested RWP models and EMC criteria recommended by ITU-R
- GIS-RF is a basis of the technology of “EMC Virtual Testing Area” (EMC VTA) intended for solving EMC problems in severe EME
- GIS-RF is developed for operation on standard PC under Windows solving EMC problems in severe EME

GIS-RF Structure

- Subsystem for radio wave propagation (RWP) computation and Electromagnetic Environment (EME) simulation using ITU-R Recommendations (P - series).
- Subsystem for computation of coverage areas, responsibility areas, interference / destruction areas and radio visibility areas for radio transmitters and receivers.
- Subsystem for EMC analysis and design in space-scattered radio networks.
- Subsystem for frequency planning and optimization of frequency assignments for space-scattered radio networks.
- Subsystem for results visualization, registration and storage.
- Digital Area Map database.
- Database of Radio Equipment parameters and positioning.
- Database of Radio Monitoring Results.

GIS-RF Basic Functionality

- Computation of base RWP losses and levels of radio signals and of SIR (signal-to-interference) ratios.
- Computation and visualization of coverage areas, responsibility areas, interference / destruction areas, and radio visibility areas.
- Frequency planning and optimization of frequency assignments for space-scattered networks and non-homogeneous radio fields.
- EMC analysis and design in space-scattered radio networks.

