

Telecommunications Analysis Services

Outputs

- Internet access for U.S. industry and Government agencies to the latest ITS engineering models and databases.
- Contributions to the design and evaluation of broadcast, mobile, and radar systems, personal communications services (PCS), and local multipoint distribution systems (LMDS).
- Standardized models and methods of system analysis for comparing competing designs for proposed telecommunication services.

Telecommunications Analysis Services (TA Services) gives industry and Government agencies access to the latest ITS research and engineering on

a cost reimbursable basis. It uses a series of computer programs designed for users with minimal computer expertise or in-depth knowledge of radio propagation. The services are updated as new data and methodologies are developed by the Institute's engineering and research programs.

Currently available are: on-line terrain data with 1-arc-second (30 m) for CONUS and 3-arc-second (90 m) resolution for much of the world and GLOBE (Global One-km Base Elevation) data for the entire world; the US Census data for 2000, 1997 update, and 1990; and Federal Communications Commission (FCC) databases. For more information on available programs see the Tools and Facilities section (pp. 74-75) or call the contact listed below.

TA Services is currently assisting broadcast television providers with their transition to digital

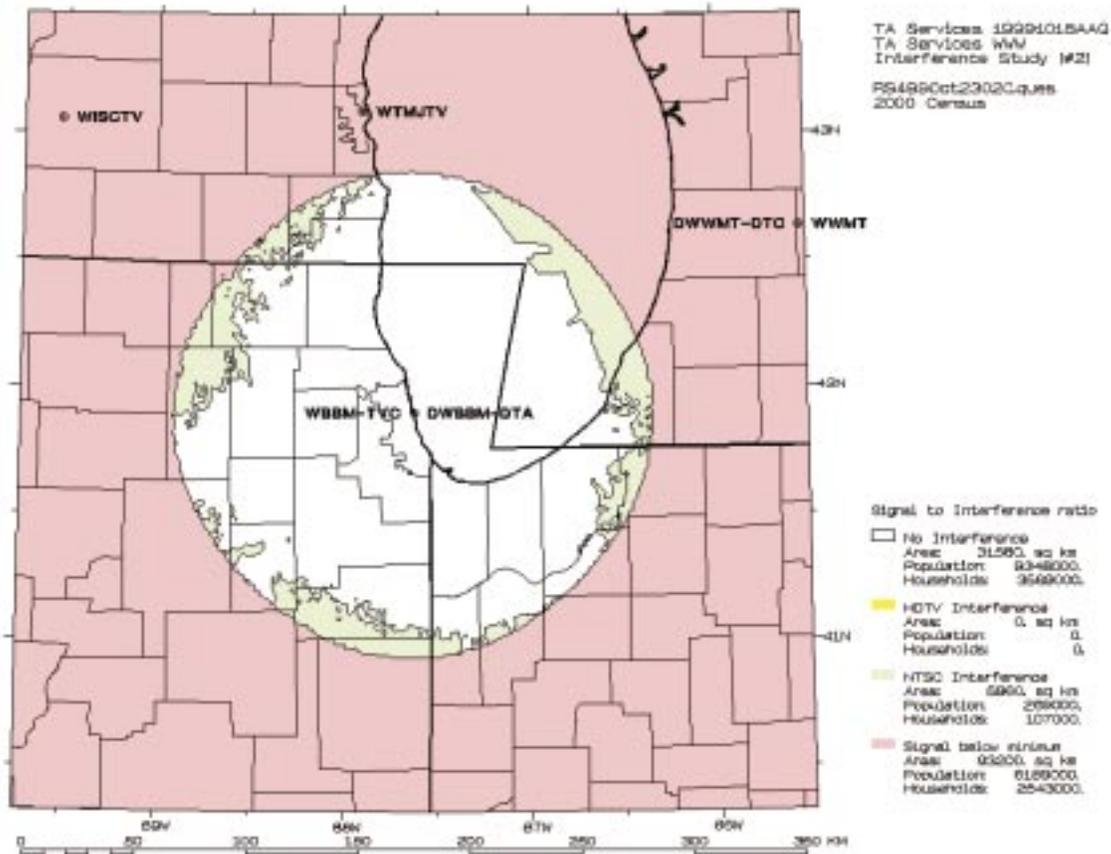


Figure 1. Interference analysis for proposed digital station in Chicago.

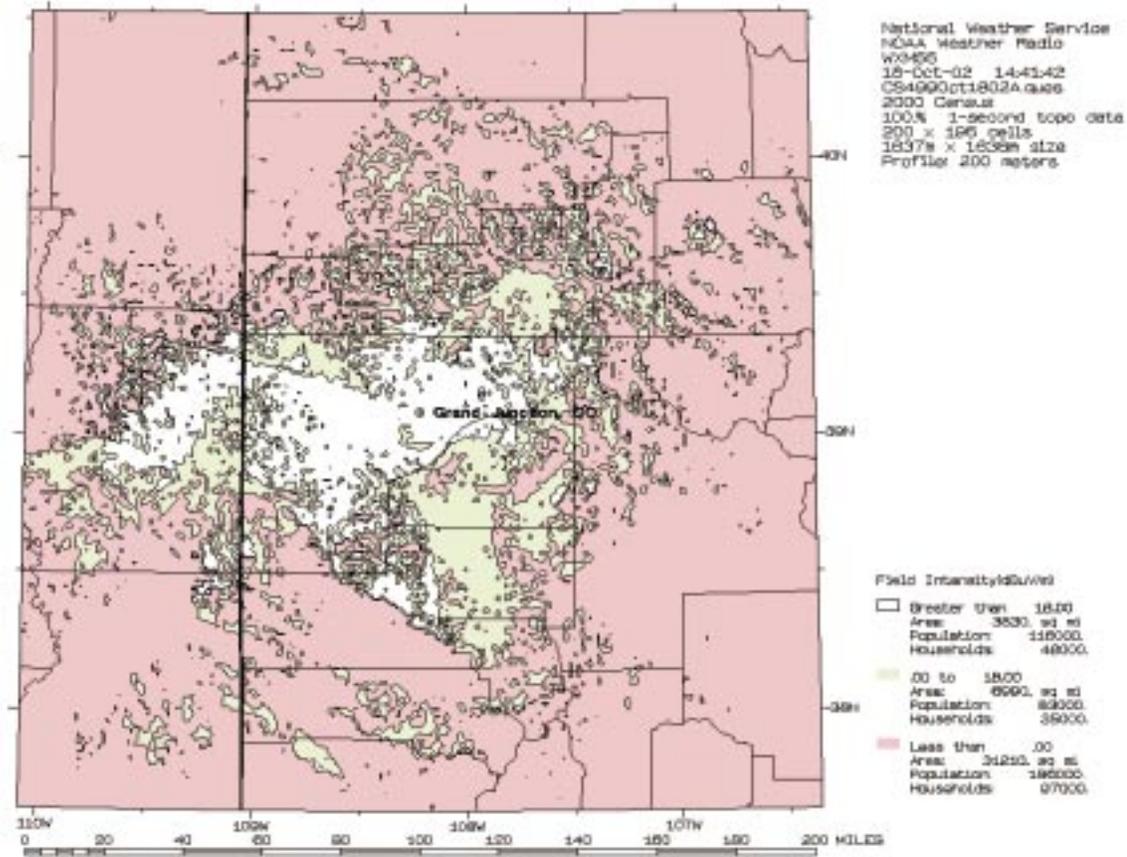


Figure 2. NWS stations coverage for Grand Junction, Colorado.

television (DTV) by providing a model for use in advanced television analysis (high-definition television, advanced television, and digital television). This model allows the user to create scenarios of desired and undesired station mixes. The model maintains a catalog of television stations and advanced television stations updated weekly from the FCC from which these scenarios are made. Results of analyses show those areas of new interference and the population and number of households within those areas. Figure 1 shows the result of a study done analyzing the predicted interference to a proposed digital TV station in Chicago, Illinois. The model can also determine the amount of interference a selected station gives to other stations. This allows the engineer to make modifications to the station and then determine the effect those modifications have on the interference that station gives other surrounding stations. In addition to creating a plot similar to that shown in Figure 1, the program creates tabular output which shows the distance and

bearing from the selected station to each potential interferer as well as a breakdown of the amount of interference each station generates.

TA Services is also assisting the National Weather Service (NWS) in locating additional sites to increase its coverage for weather radio reports and emergency warning broadcasts. Recently the whole NWS database was recalculated using the 1-arc-second terrain database. Figure 2 shows the recalculated coverage for Grand Junction, Colorado.

All models in TA Services and their outputs can be accessed via a network browser.

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