



The Institute for Telecommunication

Sciences (ITS), located in Boulder, Colorado, is the research and engineering arm of NTIA. ITS research and engineering provides the technical foundation for NTIA's policy development and spectrum management activities. ITS supports NTIA and other federal agencies in advancing the state of the art in spectrum sharing, which is required to meet growing government and commercial needs for spectrum, by:

- ❖ Performing measurements and analyses of radio frequency (RF) characteristics.
- ❖ Evaluating the electromagnetic compatibility of RF-dependent systems, including identifying, analyzing, and mitigating RF interference into mission-critical federal systems.



- ❖ ITS serves as a resource for other federal agencies, state and local governments, private corporations and associations, and international organizations. Building on a 100-year history, ITS continues to execute against a research portfolio designed to address future telecommunications challenges.
- ❖ ITS is a world leader in the development of RF propagation models used by government agencies and private industry to predict the behavior of radio waves and plan telecommunication systems.

- ❖ In support of the Federal Communications Commission (FCC), ITS developed hardware, software, and test procedures for certifying spectrum access systems and RF environmental sensing capabilities.
- ❖ NTIA, the FCC, and the Department of Defense (DoD) use ITS measurements and analyses to define exclusion zones in which commercial carriers and DoD must coordinate to ensure that commercial systems can operate and not interfere with national security systems such as air defense radars.



- ❖ ITS is pioneering spectrum monitoring systems to determine spectrum available for sharing and to monitor compliance with sharing agreements.
- ❖ With NTIA's Office of Spectrum Management (OSM), ITS performs research to determine measures of spectral efficiency.
- ❖ ITS performs research and supports standards activities to ensure interoperability of public safety communications systems and intelligibility of speech in noisy environments.
- ❖ ITS manages the Table Mountain Field Site and Radio Quiet Zone, one of only two U.S. facilities legally protected from strong radio signals, so that new spectrum-dependent systems can be tested without interference.

