
ITS Projects in FY 2002

NTIA Projects

Audio Quality Research. Identify and respond to selected open questions surrounding quality issues in digital speech and audio compression and transmission, especially Internet transmission of compressed audio. Contribute results enabling lower rate audio coding at higher quality levels, more robust transmission of audio over lossy and noisy channels, and more accurate objective and subjective estimation of perceived audio quality. Deliverables include technical publications, algorithms, software, an upgraded laboratory, and technical presentations and laboratory demonstrations as requested.

Project Leader: Stephen D. Voran (303) 497-3839
e-mail svoran@its.bldrdoc.gov

Broadband Wireless Research. Collect broadband radio-wave propagation data between 100 MHz and 100 GHz, to promote the use of HF radio spectrum and new signal processing methods to increase spectrum utilization and channel capacity, as well as the development of new wideband wireless data services. Deliverables include two data sets and a report.

Project Leader: Peter B. Papazian (303) 497-5369
e-mail ppapazian@its.bldrdoc.gov

Broadband Wireless Standards. Develop technical means to improve predictions of signal coverage and interference for 3G wireless services through support to ITU-R (e.g., SG 3/Working Parties 3K, 3J, 3M, and 3L) and to Public Safety community interests in TIA TR-8 (Project 25); enhance or refine propagation-related models as needed; develop evaluations of and recommendations for spectrum optimization techniques.

Project Leader: Paul M. McKenna (303) 497-3474
e-mail pmckenna@its.bldrdoc.gov

Network Interoperability. Derive and use a systems engineering-oriented framework to better understand, and address, the integral components/elements of interoperability and their associated technical issues; analyze real world interoperability problems in laboratory or field environments and use the results to refine the generic framework.

Project Leader: Randall S. Bloomfield (303) 497-5489
e-mail rbloomfield@its.bldrdoc.gov

Network Performance. Provide objective, expert leadership and key technical contributions in ITU-T and related U.S. industry committees responsible for developing telecommunication network performance and resource management standards.

Project Leader: Neal B. Seitz (303) 497-3106
e-mail nseitz@its.bldrdoc.gov

Networking Technology. Continue the development of networking technology methodologies and tools to address network management and network security/protection issues. Deliverables include a report.

Project Leader: Val Pietrasiewicz (303) 497-5132
e-mail valp@its.bldrdoc.gov

Policy Support. Provide engineering and technical support to NTIA in telecommunications policy development. Provide support in various technical analyses including broadband wireless access, 3rd generation wireless systems, privacy issues, information technology advances, and critical informal protection.

Project Leader: Val M. O'Day (303) 497-3484
e-mail voday@its.bldrdoc.gov

Propagation Model Support. Provide propagation model support to NTIA's Office of Spectrum Management (OSM) in order to improve the agreement of the two primary radio prediction models maintained by the U.S. Government to measured data and to each model.

Project Leader: Paul M. McKenna (303) 497-3474
e-mail pmckenna@its.bldrdoc.gov

RSMS Development. Develop new spectrum measurement capabilities for the existing Radio Spectrum Measurement System (RSMS), including digital signal processing capabilities, follow-on data acquisition software to operate with a new generation of spectrum analyzers, upgraded RF front-end designs, a new radar-signal direction-finding system, acquisition and integration of a digitizer and a digital oscilloscope, and miscellaneous new measurement capabilities.

Project Leader: Frank Sanders (303) 497-5727
e-mail fsanders@its.blrdoc.gov

RSMS 4th Generation Development. Specify, design, and implement the state-of-the-art radio spectrum measurement system. The development will consist of three parallel tracks: (1) vehicle with alternative deployment options; (2) RF instrumentation and measurement methods; (3) software for measurement control and data analysis.

Project Leaders: (1) John Ewan (303) 497-3059
e-mail jewan@its.blrdoc.gov
(2) Brent Bedford (303) 497-5288
e-mail bbedford@its.blrdoc.gov
(3) J. Randy Hoffman (303) 497-3582
e-mail rhoffman@its.blrdoc.gov

RSMS Operations. Provide NTIA with critical measurement support to determine broadband spectrum occupancy across the U.S.; resolve interference problems involving Government radio systems; and determine the emission characteristics of radio transmitter systems that may affect Government operations or that may be acquired by Government agencies.

Project Leader: Frank H. Sanders (303) 497-5727
e-mail fsanders@its.blrdoc.gov

Support for U.S. Administration in ITU-R and CEPT-5G. Support NTIA's Office of Spectrum Management (OSM) with critical support for international activities at the International Telecommunications Union — Radiocommunication Sector (ITU-R). Activities include writing a required Contribution and supporting an existing Preliminary Draft New Recommendation.

Project Leader: Frank H. Sanders (303) 497-5727
e-mail fsanders@its.blrdoc.gov

Third Generation Wireless. Develop accurate attenuation, frequency selective fading, noise, and interference radio channel models for proposed 3G wireless standards, to be used by both industry and Government. Deliverables include reports which disseminate the results of tasks to the public.

Project Leader: Robert J. Achatz (303) 497-3498
e-mail rachatz@its.blrdoc.gov

Third Generation Wireless Interference Modeling and Characterization. Building on previous ITS work, develop interference models for each PCS technology, apply the models in characterizing one-on-one, one-on-many, and many-on-one PCS interference for 3G architectures, and determine operational guidelines and other practical means of mitigating observed interference effects. Deliverables include a report and contributions to a handbook to be used by network planners and field personnel.

Project Leader: Timothy J. Riley (303) 497-5735
e-mail triley@its.blrdoc.gov

UWB Support. Provide NTIA's Office of Spectrum Management (OSM) with consultative and analysis support regarding measurements of ultrawideband (UWB) signals. Activities include review of UWB documents including the draft FCC Report and Order, assistance with definitions of UWB characteristics, calculations of peak and average power from amplitude probability distributions, and various other questions and analyses.

Project Leader: William Kissick (303) 497-7410
e-mail wkissick@its.blrdoc.gov

Video Quality Research. Develop the required technology for assessing the performance of digital video transmission systems such as direct broadcast satellite, digital television, HDTV, video teleconferencing, telemedicine, and e-commerce, and actively transfer this technology to other Government agencies, end-users, standards bodies, and the U.S. telecommunications industry. Deliverables include technical publications, video quality measurement algorithms and software, and technical standards contributions.

Project Leader: Stephen Wolf (303) 497-3771
e-mail swolf@its.blrdoc.gov

Other Agency Projects

Central Intelligence Agency

Analysis of RF Threat to Telecommunications Infrastructure. Analyze the effects of high power RF fields on critical elements of the military and civilian telecommunications infrastructure.
Project Leader: John J. Lemmon (303) 497-3414
e-mail jlemmon@its.blrdoc.gov

Department of Commerce

Systems Engineering and Technical Assistance. As a follow-on to the Telecommunications Assessment performed previously, provide engineering services and technical assistance, consistent with current DOC priorities, to assist the Digital Department as it strives to provide more effective and efficient service to the offices and bureaus of DOC.
Project Leader: Val J. Pietrasiewicz (303) 497-5132
e-mail valp@its.blrdoc.gov

Department of Defense

Communication System Planning Tool (CSPT) Model Development. Enhance the Communication System Planning Tool (CSPT) developed by ITS, by including an indoor propagation model and improved visualization.
Project Leader: Robert O. DeBolt (303) 497-5324
e-mail rdebolt@its.blrdoc.gov

Forecast of Emerging Secure Wireless Telecommunications Technologies. Research emerging and evolving wireless technologies (voice, data, video, and integrated services), then conduct forecasts, map trends, and develop a series of reports that discuss the analysis, survey, and impact of those telecommunications technologies.
Project Leader: Christopher Redding (303) 497-3104
e-mail credding@its.blrdoc.gov

International Symposium on Advanced Radio Technologies. Develop and conduct the symposium that addresses emerging, advanced wireless technologies that offer wide application and may affect how the radio spectrum is used. Gather information on these technologies and applications for the sponsor.
Project Leader: J. Wayde Allen (303) 497-5871
e-mail wallen@its.blrdoc.gov

Radio Propagation Measurements. Conduct field measurements to define the radio propagation environment at two sites in Denver, Colorado. The results will be used to help the Defense Technology Analysis Office (DTAO) develop and validate propagation models.

Project Leader: Peter Papazian (303) 497-5369
e-mail ppapazian@its.blrdoc.gov

Department of Justice

Land Mobile Radio Usage Statistics and Engineering Studies. Assist DOJ's Wireless Management Office's high-level system design efforts aimed at planning the Justice Wireless Network by characterizing traffic among Justice law enforcement agencies in selected urban areas, and by performing other research and engineering activities as requested.

Project Leader: Eldon J. Haakinson (303) 497-5304
e-mail ehaakinson@its.blrdoc.gov

Department of Treasury

Public Safety Wireless Network (PSWN) Engineering Studies. Provide engineering studies for the PSWN to evaluate interference to Public Safety systems, to compare system architectures, to evaluate system components for interoperability, and to support additional projects as directed by the PSWN.

Project Leader: Eldon J. Haakinson (303) 497-5304
e-mail ehaakinson@its.blrdoc.gov

Department of Treasury Technical Studies. Provide support for the Department of Treasury efforts to evaluate technologies and spectrum options due to changes that result from equipment and band policy changes.

Project Leader: Eldon J. Haakinson (303) 497-5304
e-mail ehaakinson@its.blrdoc.gov

Federal Aviation Administration

FAA Radio Frequency Interference Monitoring System (RFIMS) Support. Provide support to the FAA's RFIMS program, including providing changes and enhancements to the RFIMS, servicing ITS-designed and ITS-built components, and providing training in measurement techniques using the RFIMS.

Project Leader: Brent L. Bedford (303) 497-5288
e-mail bbedford@its.blrdoc.gov

Federal Highway Administration

Technical Support for Implementation of a Nationwide DGPS Service. Provide continuing support for the implementation of a nationwide differential Global Positioning System (DGPS) radio beacon service, to provide a nationwide navigation and positioning signal.

Project Leader: John J. Lemmon (303) 497-3414
e-mail jlemmon@its.bldrdoc.gov

Federal Railroad Administration

Railroad Telecommunications Study. Continue general support to the Federal Railroad Administration as it pertains to the activities of the Wireless Communications Task Force (WCTF).

Project Leader: John M. Vanderau (303) 497-3506
e-mail jvanderau@its.bldrdoc.gov

Miscellaneous Federal and Non-Federal Agencies

Telecommunications Analysis Services. Make available to other Government agencies and to the public, through user-friendly computer programs, a large menu of engineering models, scientific and informative databases, and other useful communication tools.

Project Leader: Gregory R. Hand (303) 497-3375
e-mail ghand@its.bldrdoc.gov

National Communications System

Digital Land Mobile Radio Standards

Development. Assist NCS in developing a comprehensive set of interoperability standards for digital land mobile radio to support law enforcement, public safety, and other critical NS/EP operations. Serve as NCS representative on the Project 25 steering committee and the TIA TR 8 committee, lead the Encryption Task Group, provide systems engineering support to other Task Groups, develop Phase 3 security standards, and coordinate Project 25 activities with other Federal users.

Project Leader: William J. Pomper (303) 497-3730
e-mail wpomper@its.bldrdoc.gov

Network Survivability and Restoral. Reduce vulnerabilities and enhance restoral capabilities in public telecommunication networks by spearheading the development of network reliability standards in various standards organizations; apply computer simulation, reliability analysis, security analysis, and traffic engineering to assist NCS in assessing and optimizing public network reliability, identifying network disruptions, promoting security enhancements, and restoring services, in support of Critical Infrastructure Protection (CIP) initiatives.

Project Leader: Arthur A. Webster (303) 497-3567
e-mail awebster@its.bldrdoc.gov

Packet Switched Networks. Facilitate the Recommendation of Emergency Telecommunications Service (ETS) capabilities in ITU-T Study Group 9, by developing and/or verifying ETS mechanisms. Apply computer simulation, laboratory studies, security analyses, and/or traffic engineering to assist NCS in support of various Critical Infrastructure Protection (CIP) initiatives related to broadband cable television networks.

Project Leader: Arthur A. Webster (303) 497-3567
e-mail awebster@its.bldrdoc.gov

Standards Promulgation Support. Advance NS/EP standards development and implementation initiatives in national and international forums; promulgate and coordinate results. Deliverables include project planning documents, technical leadership and administrative assistance in standards development activities, biannual program review presentations, and quarterly project status reports.

Project Leader: Neal B. Seitz (303) 497-3106
e-mail nseitz@its.bldrdoc.gov

Voice Over Packet and Strategic Interoperability.

Assist NCS and its member organizations in defining, promoting, and implementing telecommunication technology enhancements supporting NS/EP and critical infrastructure protection (CIP) needs. This will include participating in the TIA TR41 Standards Formulating Group (SFG) with emphasis on IP telephony gateways and their supporting infrastructure, developing technical contributions to ensure that user interfaces being developed for IP telephony satisfy NS/EP communications requirements, conducting a research and development effort to examine how TR41 standards can best be exploited to meet NS/EP requirements, and evaluating aspects of strategic interoperability.

Project Leader: Robert Stafford (303) 497-7835
e-mail rstafford@its.bldrdoc.gov

Wireless Tasking. In support of the wireless intelligent network (WIN) implementation of Priority Access Service, continue participation in the Standards Requirements Document (SRD) development and associated support of NCS in the TR 45.2.5 standards development process; provide assistance to NCS in developing priority access for wideband code division multiple access (CDMA); assist NCS in extending GETS-like priority access capabilities to wireless and broadband infrastructures, selected international services, and IP-based networks; continue to refine instrumentation and methods for wireless network discovery; and continue real world testing to characterize the behavior of PCS/cellular networks and identify vulnerabilities.

Project Leader: Christopher J. Behm (303) 497-3640
e-mail cbehm@its.bldrdoc.gov

National Institute of Standards and Technology

OLES Communication Standards. Provide engineering support, scientific analysis, technical liaison, and test design and implementation to allow the Office of Law Enforcement Standards (OLES) and the National Institute of Justice to play a key role in the development and validation of interoperability standards for the justice and public safety communities, and other communication system products, supporting telecommunications and information technology (IT) needs. Provide technical assessments and evaluations of products and services that may provide interim solutions for various interoperability scenarios. Deliverables include standards, reports, guides, guidelines, handbooks, white papers, and other products as requested.

Project Leader: Val J. Pietrasiewicz (303) 497-5132
e-mail valp@its.bldrdoc.gov

U.S. Air Force

Air Force Cellular Analysis. Provide technical support (analysis and evaluation) to the Air Force Information Warfare Center/Electronic Warfare Squadron (AFIWC/EWS). Analyze and model existing and future commercial cellular communication systems, identifying operational limitations and vulnerabilities to jamming.

Project Leader: Christopher Redding (303) 497-3104
e-mail credding@its.bldrdoc.gov

Cooperative Research and Development Agreements (CRADAs)**American Automobile Manufacturers Association**

Incident Field Strength Measurements in Highway Environments (Phase 2). Perform field strength measurements in roadway environments in the vicinity of selected high-power radio transmitters, mainly radars. Deliverables include a final report to the sponsor.

Project Leader: Frank H. Sanders (303) 497-5727
e-mail fsanders@its.bldrdoc.gov