
ITS Projects in FY 2000

NTIA Projects

Audio Quality Research Identify and respond to questions associated with quality issues in digital speech and audio compression and transmission, through literature study, digital signal processing (DSP) theory and derivations, DSP simulations, and subjective listening experiments. Deliverables include algorithms and software for speech and audio quality assessment and coding, oral presentations, technical papers and reports, and technical input to national and international standards bodies.

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

Broadband Wireless Research Provide radio-wave propagation data between 100 MHz and 100 GHz, in order to promote the use of HF radio spectrum and new signal processing methods, as well as the development of new wideband wireless data services.

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 third generation wireless services through support to ITU-R (e.g., SG 3/Working Party 3K) and to Public Safety community interests in TIA TR-8 (Project 25); develop enhancements or refinements to propagation-related models as needed; develop evaluations of and recommendations for spectrum optimization techniques.

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

Evaluation and Preparation of Propagation Models Provide propagation model support to NTIA/OSM: document the Fresnel Kirchhoff methodology propagation model subroutines; upgrade the model to account for both Sommerfeld and Fok propagators; develop methods for treating multipath rays and identify an implementation scheme.

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

Network Interoperability Conduct an unbiased assessment of interoperability techniques and develop a framework for analyzing and understanding interoperability issues; apply this framework to current and future interoperability issues in networks, public safety radio, and other technologies.

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

Network Performance Provide leadership and technical contributions in ITU-T and related U.S. standards committees whose responsibilities support DOC and NTIA goals and public interest needs.

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

Networking Technology Develop an ITS networking analysis capability to address Government needs for network performance, reliability, and cost effectiveness. Deliverables include a networking analysis tool set and an NTIA Report.

Project Leader: Raymond D. Jennings (303) 497-3233
e-mail rjennings@its.bldrdoc.gov

Policy Support Provide engineering and technical support to NTIA in telecommunications policy development. Provide support in various technical analyses including broadband deployment technologies, low power FM radio drop-ins, and broadband wireless forecasting and assessment.

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

Public Safety Research Provide engineering and technical support to the Public Safety Program of NTIA/OSM; coordinate with other complementary programs (and their associated agencies) devoted to public safety communications applications.

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

Rewrite of ITU Document 1177 Rewrite the ITU-R Draft Recommendation M.1177-1B, Working Party 8B, “Techniques for Measurement of Unwanted Emissions of Radar Systems” (Question ITU-R 202/8); demonstrate the use of ITS-developed techniques and algorithms to perform the measurements described in this document; represent the U.S. as a delegate at the ITU in Geneva to support this document.

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

RSMS Enhancements Develop new capabilities for the fourth generation of the Radio Spectrum Measurement System, including techniques, algorithms, and hardware.

Project Leader: J. Randy Hoffman (303) 497-3582
e-mail rhoffman@its.blrdoc.gov

Software Defined Radio Support Provide technical support to NTIA/OSM in the area of software defined radio. Deliverables include a briefing presented to the IRAC

Project Leader: Jeffery A. Wepman (303) 497-3165
e-mail jwepman@its.blrdoc.gov

Spectrum Analysis Research Provide continuing support to NTIA/OSM and the IRAC technical subcommittee in the areas of necessary bandwidth formulas and ultrawideband systems spectral analysis.

Project Leader: Edmund A. Quincy (303) 497-5472
e-mail equincy@its.blrdoc.gov

Third Generation Wireless Contribute to the rapid development and deployment of third generation (3G) wireless services: develop an accurate indoor propagation model, provide leadership in propagation model development in the ITU-R, and analyze, model, and simulate noise, interference, and bit errors for 3G wireless proposed standards. Deliverables include articles, reports, and presentations.

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

Third Generation Wireless Interference Modeling and Characterization Develop interference models for each PCS technology, and apply the models in characterizing one-on-one, one-on-many, and many-on-one PCS interference scenarios. Deliverables include 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 Signal Measurements Provide NTIA/OSM with critical measurement support to determine spectrum and time domain characteristics of ultrawideband (UWB) transmitters. Deliverables include measurements, analyses, and published reports.

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

Video Quality Research Develop the required technology for assessing the performance of advanced television and other digital video transmission systems (e.g., HDTV and video teleconferencing). Deliverables include a video quality toolkit for Internet 2 applications, conference and journal papers, and technical standards contributions.

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

Wireless Testing, Facilities, and Standards

Conduct performance testing of a state-of-the-art HF e-mail system that implements protocols under consideration for MIL-STD0188-110B, Interoperability and Performance Standards for Data Modems. Deliverables include a test plan, measurements, a test report, and technical contributions to the HF Radio Subcommittee.

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

Department of Commerce

Systems Engineering and Technical Assistance As a follow-on to the Telecommunications Assessment performed previously for the Department, provide engineering services and technical assistance consistent with the current priorities of the DOC.

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

Department of Defense

International Symposium on Advanced Radio Technologies Plan, organize, publicize, host, chair, and provide a report on the 2000 symposium.

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

PCS/LMDS for DoD Enhance the ITS PCS/LMDS model (developed in the Geographic Information System (GIS) environment) by adding interference capability and converting the model to run on an NT-based system.

Project Leader: Robert O. DeBolt (303) 497-5324
e-mail rdebolt@its.bldrdoc.gov

Software Radio Research Perform research in software radio technology.

Project Leader: Jeffery A. Wepman (303) 497-3165
e-mail jwepman@its.bldrdoc.gov

Department of Justice

Public Safety Wireless Network (PSWN) Support Provide support for the PSWN in public safety standards efforts with the Telecommunications Industry Association TR-8 process; develop and utilize an Interoperability Test Facility. Deliverables include letter reports to the sponsor.

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

Federal Aviation Administration

Completion of Radio Frequency Interference Monitoring Systems (RFIMS) Perform final preparation and delivery to the FAA of RFIMS vans no. 10 and 11, and close down the delivery phase of the RFIMS project.

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

Investigation of Potential Interference from UWB Signals to GPS Receivers - An Expansion Project Accelerate and expand the project to provide an initial assessment of ultrawideband (UWB) interference to GPS receivers.

Project Leader: J. Randy Hoffman (303) 497-3582
e-mail rhoffman@its.bldrdoc.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, which would 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 Provide an independent assessment and technical support in the test and evaluation of a Project 25 railroad radio system demonstration.

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

Advanced HF Applications As the Federal representative to the MIL-STD-188-110B Working Group, review the standard and coordinate comments from the Federal users community. Write a final report on the low-cost ALE system developed by ITS in FY99, in order to provide documentation for users.

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

Digital Land Mobile Radio Standards

Development Assist NCS in developing a comprehensive set of interoperability standards for digital land mobile radio, for public safety applications, by providing leadership and technical contributions in the Project 25 Encryption Task Group and associated APCO, TIA, and FTSC standards oversight committees.

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

Mobile IP Network Access Technologies Enhance NS/EP responder access to network-based information by evaluating and demonstrating emerging technologies for mobile access to IP networks. Deliverables include a wireless network data collection system.

Project Leader: Christopher J. Behm (303) 497-3640
e-mail cbehm@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 TIA1 and related standards organizations; apply computer simulation and other reliability analysis and traffic engineering tools to assess and optimize network reliability.

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

NS/EP Requirements for Wireless Networks

Assist NCS in planning effective NS/EP strategies for wireless networks, and in implementing those strategies through technical contributions to industry standards, procurement specifications, and NS/EP operating procedures.

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

PCS/3G Wireless Interference Develop interference models for various PCS technologies and apply the models in characterizing PCS interference scenarios; determine operational guidelines and other practical means of mitigating observed interference effects. Deliverables include technical contributions to standards bodies.

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

Priority Services in Converging Networks Assist NCS in extending GETS-like priority access capabilities to wireless and broadband infrastructures, selected international services, and IP-based networks through technical contributions and leadership in telecommunication standards committees, prototype testing and evaluation of advanced NS/EP technologies, and the development of a software-based system for displaying commercial wireless service coverage and associated NS/EP infrastructures.

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

Standards Promulgation Support Update key standards and Recommendations to maintain their value; prepare WWW, CD-ROM, and search-engine equipped versions of selected documents to facilitate their distribution; help prepare open literature publications to expand public awareness and use of NCS standards products; and provide support for selected standards development activities.

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

Tandem Vocoder Objectively evaluate tandem vocoding systems, by measuring the voice quality of various combinations, to establish the feasibility (from a voice quality perspective) of tandeming vocoders in order to relay voice communications between disparate systems.

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

Telecom Glossary 2000 Provide proposed revisions to FED-STD-1037C, Glossary of Telecommunication Terms, to include new terminology relating to computer security, network security, information assurance, and the Internet; coordinate electronic "cyber meetings" to edit electronic submissions and comments; compile, edit, and circulate drafts.

Project Leader: Evelyn M. Gray (303) 497-3307
e-mail egray@its.bldrdoc.gov

Use of IP-Based Networks in Real-Time NS/EP Applications Examine the impact of emerging Internet Protocol (IP)-based networks on real-time NS/EP communications with an emphasis on voice and video applications; survey standardization and technology trends to identify actions that should be taken by Government to ensure that NS/EP requirements are considered in the development of future IP-based networks.

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

USSG B Standards Support Provide administrative focal point and support for ITAC-T U.S. Study Group B (USSG B) – Network Infrastructure Study Group. Deliverables include announcement, agenda, document log, and summary minutes for each meeting.

Project Leader: Marcia L. Geissinger (303) 497-5216
e-mail mgeissinger@its.blrdoc.gov

National Institute of Standards and Technology

OLES Communication Standards Provide engineering support, scientific analysis, technical liaison, and test design and implementation to allow OLES and the National Institute of Justice to help develop and validate interoperability standards for the justice and public safety communities. Provide technical assessments and evaluations of products and services. Deliverables include standards, reports, guides, guidelines, handbooks, and white papers.

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

Technical Support for Design of N-WEST Laboratory Develop plans for an indoor broadband wireless access system laboratory, which will be capable of characterizing the digital transmission of data at millimeter-wave frequencies.

Project Leader: Roger A. Dalke (303) 497-3109
e-mail rdalke@its.blrdoc.gov

US Air Force

Initial Assessment of UWB and GPS Compatibility Provide an initial assessment of ultrawideband (UWB) interference to GPS receivers, through the measurement of specified GPS receiver parameters which are used to determine the performance of the receivers when exposed to various UWB signals.

Project Leader: J. Randy Hoffman (303) 497-3582
e-mail rhoffman@its.blrdoc.gov

US Army

Jammer Effectiveness Model (JEM) Develop a new version of JEM, for performance prediction of radar and communication systems in an electronic warfare or interference environment.

Project Leader: Nicholas DeMinco (303) 497-3660
e-mail ndeminco@its.blrdoc.gov

Signature Management and Deception Support Assist the Night Vision Electronic Sensors Directorate (NVESD) in defining an updated signature management laser communication system. Deliverables include three reports.

Project Leader: Edmund A. Quincy (303) 497-5472
e-mail equincy@its.blrdoc.gov

US Coast Guard

US Coast Guard Measurements Perform electromagnetic compatibility measurements; conduct performance standards tests on handheld VHF receivers. Deliverables include an NTIA Report.

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

Cooperative Research and Development Agreements (CRADAs)

American Automobile Manufacturers Association

Roadway RF Environment Measurements, Phase 2 Determine the maximum incident field strengths that occur in the vicinity of high-power radars in the roadway RF environment in the United States.

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

ARINC

Spectrum Planning Tool Set Develop a Geographic Information Systems (GIS)-based spectrum planning tool set for railroad applications.

Project Leader: Robert O. DeBolt (303) 497-5324
e-mail rdebolt@its.blrdoc.gov

Lucent Technologies

IBOC Evaluation Act as impartial third-party observer during test phase of an in-band on-channel (IBOC) FM digital audio broadcasting system.

Project Leader: Kenneth C. Allen (303) 497-5474
e-mail kallen@its.blrdoc.gov