



Homeland
Security

Fact Sheet

Route Diversity Project

Purpose: The Route Diversity Project (RDP) develops tools, obtains carrier data, and employs network and analysis expertise to evaluate a Federal facility's continuity of communications capabilities. RDP also evaluates technologies and carrier service offerings that could be deployed to improve route diversity, which is defined as the communications routing between two points over more than one physical path with no points in common.

Background: The RDP, originally established as the post-9/11 Backup Dial Tone Project, investigates key Federal agencies' risk of losing wire line communications services in the event of a natural disaster or terrorist act. The project initially consisted of detailed engineering, cost analyses, and demonstration of alternative technologies for eliminating single points of failure at critical Federal facilities in a 9/11 type scenario. The current focus of the project is on the development of methodologies enabling the evaluation of a Federal facility's network access for potential points of failure. The Route Diversity Methodology (RDM) was the first developed, premised on a partnership agreement between the customer agency and the NCS for the completion of highly accurate in-depth analyses. In response to an Office of Management and Budget memorandum in June 2005, "Regulation of Maintaining Telecommunication Services during a Crisis or Emergency in Federally-owned buildings," the NCS developed an Abridged RDM (ARDM) to enable an agency to conduct rapid self-assessments.

Highlights: The ARDM is being adapted to support continuity of operations planning as discussed in NCS Directive 3-10 (July 2007) *Minimum Requirements for Continuity Communications Capabilities*. Recent evaluations on wireless transport technologies, including free space optics (FSO), wireless broadband, and satellite solutions, test their potential to provide backup communications. The NCS also conducted environmental stress (smoke/fire) tests of several FSO units at a National Institute for Standards and Technology lab. RDP continues to test emerging wireless transport technologies and services in partnership with communications carriers/manufacturers and Federal agencies. RDP development is in multiple phases, as outlined below:

- ☐ Phase I/II (2001-2) – Develop generic architectures based on a sample set of key federal facilities and identify vulnerabilities associated with those architectures; interview Federal agencies regarding actual facility architectures and problems encountered because of the September 11th attacks; provide recommendations based on interviews and develop technological solutions (completed)
- ☐ Phase III (2003-ongoing) – Research/demonstrate technological solutions that can mitigate vulnerabilities and enhance robustness of wire line networks used by Federal agencies
- ☐ Phase IV (2004-6) – Create an assessment process to evaluate existing telecommunications infrastructures to determine gaps in physical routing diversity (single facility RDM); research options and develop guidelines (completed)

- Phase V (2006-7) – Develop a campus-environment RDM; establish commercial service/architecture evaluation criteria (completed)
- Phase VI (2007-ongoing) – Create minimum communications route diversity handbook in support of HSPD-20 Continuity Communications Architecture developments

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