

## **BIOGRAPHY – JAMES CARROLL**

James Carroll has been at the U.S. Department of Transportation/Volpe Center for eighteen years. Presently, he is working on several projects associated with Positioning, Navigation, and Timing (PNT) systems. The projects include leading the effort to assess the vulnerabilities of applications that rely on navigation satellites for precision time and frequency services; producing the 2008 version of the U.S. Federal Radionavigation Plan; supporting the development of the enhanced Loran system, supporting civil participation in GPS modernization; and supporting the development of a (U.S.) National PNT architecture. In addition, Dr. Carroll recently supported the U.S. Federal Aviation Administration project to determine feasible navigation and surveillance backup architectures to GPS in their Automatic Dependent Surveillance – Backup system. Dr. Carroll also was a co-author and primary editor of the Volpe Center GPS vulnerability assessment. He has degrees in aeronautics and astronautics from MIT and Stanford, and is a member the Institute of Navigation, the Royal Institute of Navigation, and the IEEE. In 2002, he received the Medal of Merit award from the International Loran Association.