

CASE STUDY Metro Atlanta Rapid Transit Authority (MARTA)

CUSTOMER PROFILE

Metro Atlanta Rapid Transit Authority (MARTA) is located in the Atlanta, Georgia metropolitan area and operates approximately 3000 radio users on their communications system. The system operates in an area encompassing the City of Atlanta and Fulton and DeKalb counties and requires interoperability with these jurisdictions as well as surrounding counties. MARTA also utilizes conventional Mutual Aid frequencies with the City of Atlanta and the Counties of Cobb, Fulton, and DeKalb. MARTA is also a member of the Atlanta Area ITAC and the Urban Area Security Initiative (UASI).

Technologies

MARTA's rebanding involved a Motorola SmartZone 4.1 system as well as a four site four channel conventional DataTAC system. MARTA also operates a four site Siemens Transit-Data system that employs Motorola conventional Quantar stations and mobile interfaces to Motorola MCS2000 trunked radios. In addition, the project required maintaining interoperability with the other Motorola trunking systems in the region and the Atlanta Area ITAC conventional radio channels.

Context of Assignment

The MARTA rebanding implementation is one of several planned for the region and requiring wide-area planning. The project was complex since it involved conventional and trunked facilities as well as the interface to a Siemens Transit-Data system. This assignment involved working closely with the Motorola Rebanding Project Manager, Motorola Preferred Service Provider and the MARTA representatives in order to inventory subscribers and Fixed Network Equipment (FNE) affected by rebanding. Other tasks included the analysis of new frequencies for intermodulation problems, the determination of modifications to MARTA's subscribers and radio networks required for rebanding, and the planning for subscriber updates needed for others in the region to maintain interoperability throughout the cutover.

COMMDEX SOLUTION

CommDEX started the process by researching and documenting the existing infrastructure and subscribers, a task that required reading existing subscriber radio templates. A full system inventory was conducted to collect Fixed Network Equipment (FNE) and Subscriber Equipment data. Based on the data collected, rebanding analysis was conducted to determine if these items needed to be re-tuned, reprogrammed, or replaced. This process included reviewing existing frequencies to identify

the control vs. voice channels, the identification of Failsoft channel requirements, and the verification that the licenses matched the frequencies in use. This information was analyzed to determine the satisfactory operation of the proposed frequencies on the existing transmit combiners and the receiver multicouplers to eliminate any intermodulation problems. A Suitability Assessment for all equipment was performed to determine if any equipment required re-tuning, reprogramming, or replacement. CommDEX then developed new equipment lists for the replaced equipment. Once equipment requirements were defined, CommDEX prepared an implementation plan that addressed the migration of the existing subscribers to ensure continuous interoperability. The cutover and fallback plans for the FNE were developed to ensure that the equipment always had a recovery plan for all cutover stages and also to ensure minimal impact on critical communications during the migration. Pre- and post- radio system tests were developed to verify that system performance was comparable after rebanding. A Final Acceptance Test was included to guarantee that no system functionality was lost. CommDEX also developed a detailed Scope of Work and a project timeline for the project, stating the responsible party for and timeline for each task and the timeline allocated for completion. These were submitted to all MARTA entities sharing the system and their concurrence obtained for the plan. The planning effort began in August, 2007, and the implementation is scheduled to conclude April, 2011.

COMMDEX ROLES

CommDEX served as the field project manager and technical engineering lead for the rebanding effort, working closely with the Motorola state project manager, Motorola Preferred Service Provider, and the MARTA representatives. CommDEX analyzed the existing communications infrastructure, designed, scoped and priced the technological rebanding path for the system, communicated with representatives and clients, and successfully negotiated rebanding funding for all involved parties.