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## CUSTOMS AND BORDER PROTECTION

### CALEXICO BORDER PATROL STATION RELOCATION

#### **PROJECT OVERVIEW:**

Customs and Border Protection's (CBP) Border Patrol Station (BPS) located in Calexico, CA is being moved to a new location approximately one mile away from the current location. CBP will move into a temporary facility that has been built on the new site while the new building is being constructed. As part of this move, all Remote Video Surveillance System (RVSS) activities will need to be moved to the new location which affects all the video links, radio interoperability, backhaul, server equipment, and facilities required to support these operations. **All of this work is being accomplished on a live 24/7 operations facility and was engineered to minimize downtime and operational impact to the users.**

CommDEX supported CBP in this move by providing all services required to conduct needs assessment, design and implementation of the new communications and RVSS operations. This includes the following major areas:

- Design and installation of an interoperability gateway system to manage radio communications
- Design and installation of new video wall and operator equipment at the RVSS control center including
- Relocation of the 16 microwave links providing connectivity for the existing RVSS system
- Design and installation of a new temporary microwave link between the existing and new RVSS locations
- Installation of new RVSS system in the new facility including
  - New IP video encoders
  - New video wall
  - New RVSS operator positions
  - Networked video recorders
  - Radio equipment
- All planning and engineering services including
  - Communications interoperability planning
  - Network planning for the new IP video components
  - Backhaul and transport planning
  - Commissioning and cutover planning
- Tower site design and engineering
- Civil development and construction of the new tower site
- Facilities upgrades of the new RVSS control room

## Scope of Services:

**Development of a Common Interoperability Solution** To facilitate communication with CBP agents in the field, local public safety authorities as well as other agencies such as DEA and IVECA, needed an interoperability gateway to connect radio, video surveillance audio and telephone resources together at the Calexico BPS control center. Through meetings with CBP representatives, Commdex personnel assessed the communications requirements of personnel at the Calexico station and designed an interoperable solution using the MOTOBRIDGE Interoperable IP system to connect the existing resources together. This allows for all user agencies to communicate as needed to respond to complex situations based on pre-defined or ad hoc communications plans. Commdex also held discussions with CBP staff on how to extend the same functionality to other Border Patrol Stations, thus linking multiple sectors together with a single interoperability network.

**Facilities Planning and Deployment** Commdex provided services to design the 160' tower to be constructed at the new site as well as a new 12'x38' concrete communications shelter and improvements to the new RVSS control room were also included in the project. By reviewing supplied specification documents and visiting the site, Commdex developed a plan that incorporated current design needs as well as addressing future growth. This plan addressed the overall facility development including:

- Site preparation and development
- Tower and shelter foundations
- Tower and shelter construction
- RVSS electrical, grounding, and HVAC improvements
- Fiber and power connectivity between the tower and RVSS control room

The overall design plan was reviewed with CBP to validate inclusion of all requirements and then reviewed to optimize cost and schedule without compromising the integrity of the project.

**Microwave Path Studies and System Design** Commdex worked with the equipment manufacturers to ensure the microwave path studies and path designs incorporated the requirements of CBP for operations, interoperability and survivability, using state-of-the-art design applications. The microwave network was designed to ensure that all new paths were designed to "5-nines" (99.9999%) reliability criteria, and sustained network reliability during changes in propagation. An additional path was designed to allow for connectivity between the existing and the new facility to ease the transition of the RVSS equipment and minimize downtime to the users.

**RVSS System Improvements** Commdex included all equipment and services to upgrade the existing RVSS camera network to an IP-based solution including a Digital Video Recorder (DVR) that would capture the IP video streams for all camera locations. New IP video encoders were included for all camera sites as well as upgrades to the existing transport network to accommodate the IP traffic. This coupled with a new RVSS control center including video wall and operator equipment provides a modern and efficient operation that enhances CBP's mission.

**Commissioning and Testing of Equipment** As the final phase of the project, engineering oversight of the commissioning and operational testing of the system was included to bring all new systems online and manage the transition from the existing facility.