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Delivering Mobile Communications to U.S. Customs and Border Protection

by Melinda Crowley

As the challenges of the U.S. Department of Homeland Security become increasingly critical and complex, the evolution of technology continues to provide innovative means for meeting the mission. For years, MorganFranklin's mobile communications services have been part of that evolution. In the final months of 2009, the company's Waldorf, Md., facility delivered four quick response vehicles (QRVs) and one mobile tactical command center (MTCC) to the Border Patrol Search, Trauma, and Rescue (BORSTAR) unit of U.S. Customs and Border Protection (CBP). The state-of-the-art mobile command vehicles will be utilized for command, control, and communications during search and rescue missions, enabling continuous and essential connectivity to the CBP core network infrastructure.

Meeting the Mission

BORSTAR is responsible for incident command for multi-agency search and rescue missions along U.S. borders involving distressed agents, border residents, and migrants. Although the unit's name is synonymous with efforts to curb illegal immigration, BORSTAR agents are also responsible for leading emergency and special operations missions, often traveling long distances to help local first responders resolve situations.

While locating and providing distressed individuals with medical assistance and transport, BORSTAR agents often operate in austere, remote environments with rugged terrain and little or no existing communications infrastructure. In order to protect national security and provide life-saving services, they require a combination of on-the-move and robust stationary connectivity to their core network infrastructure. In addition to communicating with higher headquarters to relay situation reports and receive guidance, agents also require an infrastructure that provides interoperability with local first responders operating on disparate radio communication systems. The mobile command vehicles developed by MorganFranklin align different equipment and frequency bands while providing Internet and core network

services including e-mail, key software applications, and Voice over Internet Protocol (VoIP) telephone services.

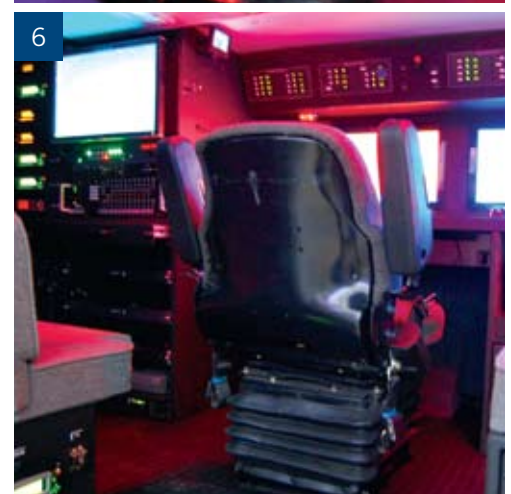
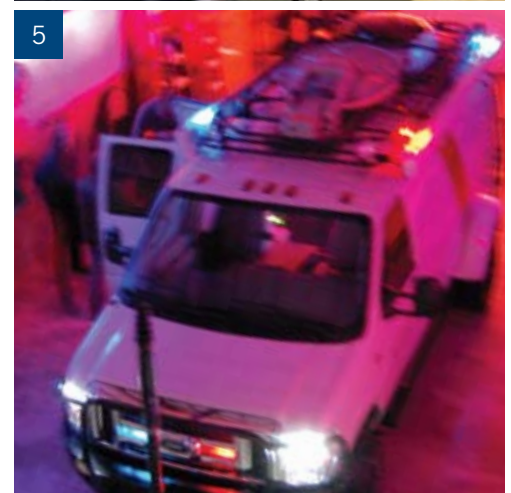
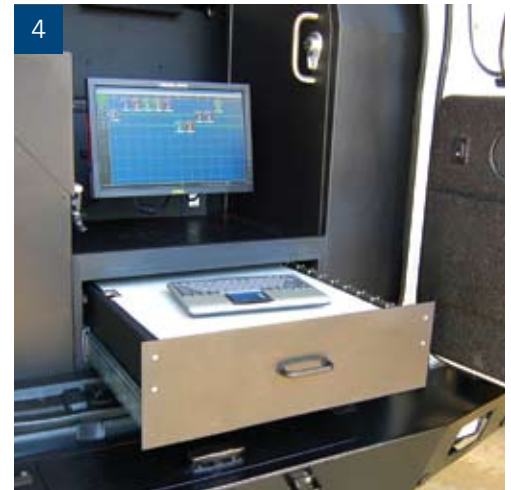
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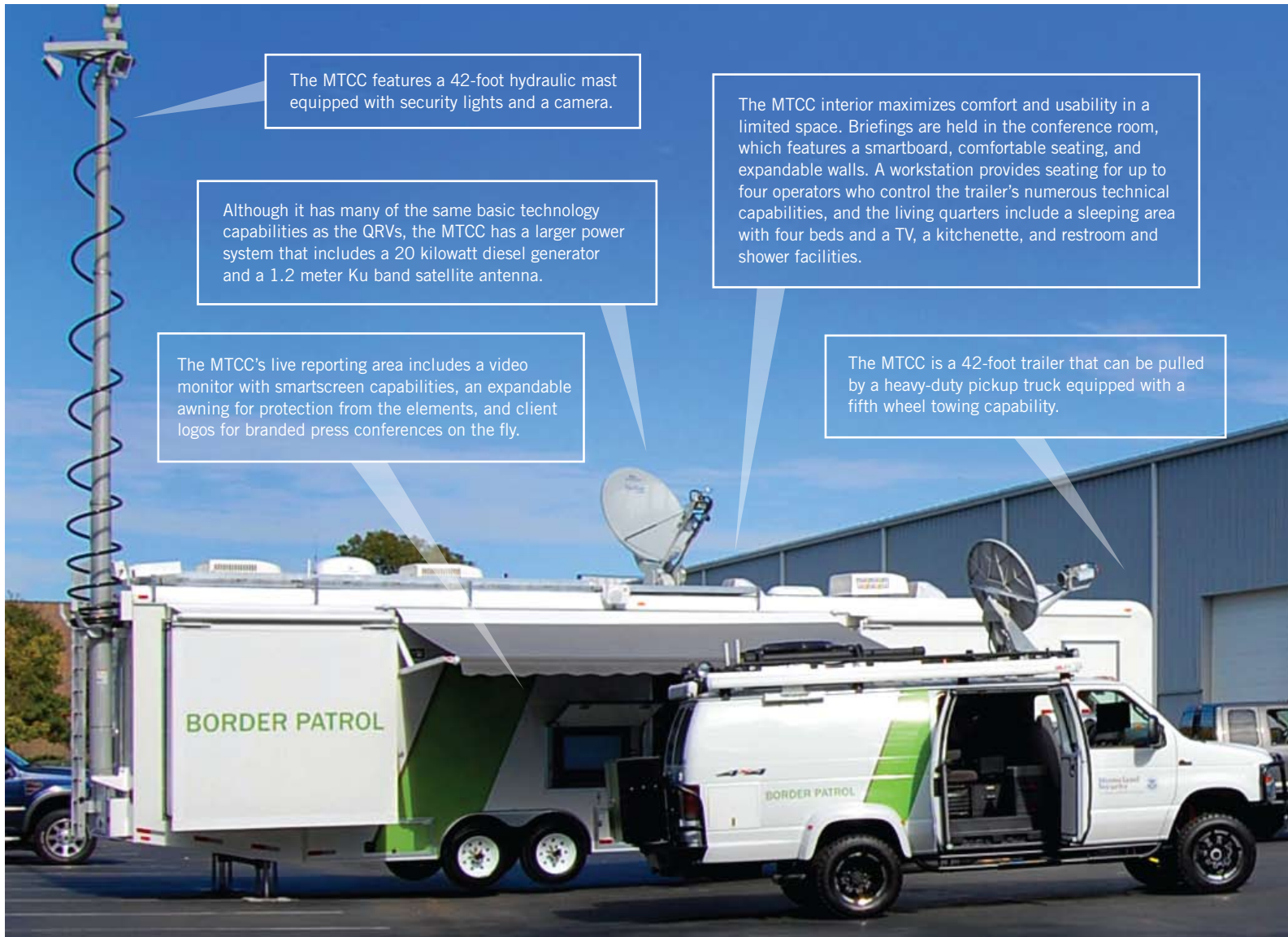
"We're affecting homeland security by providing video, voice, and data capabilities that enable first responders and emergency managers to communicate while they're on the move, as well as in and around the incident scene. It's an issue of extending core network infrastructure to emergency communicators, even where other infrastructure does not exist."

— ROB BLAKE, managing director
MorganFranklin

even where other infrastructure does not exist," said Rob Blake, managing director of systems integration solutions at MorganFranklin. "We're helping support command and control for critical federal, state, and local missions. The solution that we delivered to CBP supports a search, trauma, and rescue mission, and their ability to communicate enables them to effectively save lives."

Those life-saving capabilities will also extend to a variety of special operations missions. Whether supporting a national event or responding to a natural or man-made disaster, the QRVs and MTCC may be deployed to provide preventive and emergency support for high-profile events, especially if they occur along the southern or northern borders.





The MTCC features a 42-foot hydraulic mast equipped with security lights and a camera.

Although it has many of the same basic technology capabilities as the QRVs, the MTCC has a larger power system that includes a 20 kilowatt diesel generator and a 1.2 meter Ku band satellite antenna.

The MTCC's live reporting area includes a video monitor with smartscreen capabilities, an expandable awning for protection from the elements, and client logos for branded press conferences on the fly.

The MTCC interior maximizes comfort and usability in a limited space. Briefings are held in the conference room, which features a smartboard, comfortable seating, and expandable walls. A workstation provides seating for up to four operators who control the trailer's numerous technical capabilities, and the living quarters include a sleeping area with four beds and a TV, a kitchenette, and restroom and shower facilities.

The MTCC is a 42-foot trailer that can be pulled by a heavy-duty pickup truck equipped with a fifth wheel towing capability.

Key Capabilities: Combining Aesthetics and Ergonomics

The primary difference between the QRVs and the MTCC lies in their names. The quick response vehicles are designed to swiftly arrive at incident sites to provide critical capability, while the MTCC trailer is intended to sustain long-term events that require round-the-clock operations and multiple operators. The QRV platforms utilize satellite communication systems, a suite of land mobile radio (LMR) equipment, and an interoperability device that ties disparate radio systems together to form talking groups. In addition, a preconfigured .96 meter Ku band satellite antenna can be extended when commercial broadband cellular coverage is unavailable. The vans also include mobile monitors that can be patched into the system, as well as satellite TV receivers that allow first responders to gather around monitors to debrief, plot maps of the area, share presentations, and view breaking news reports. The vehicles also boast specialized nighttime lighting that illuminates key control panels and screens for evening operations.

In contrast, the MTCC is a fully functioning command center on wheels that combines connectivity with the creature comforts of home, including a meeting space and conference room, sleeping quarters, restroom and shower facilities, and a kitchenette. Its technology capabilities are essentially the same as in the vans, only more robust. For example, it includes a 1.2 meter antenna with additional throughput to support more users, and four operator positions versus the one included in each van. Like the QRVs, the communications space includes a suite of LMRs, an interoperability device, and a video matrix that connects to a number of monitors located throughout the trailer.

Ease of operations is critical, so the trailer features simple controls that allow agents to level the vehicle, expand the pop-out interior space, extend the antenna, and auto-acquire a satellite all with the push of a button. There are also custom finishing touches such as a gun safe for storing the officers' weapons, an enclosed diesel generator, and pullout couches

in the conference area for catching sleep during long operations. Because commanders often work outside of the vehicles, sun-blocking awnings were added, as well as a movable monitor that swings open to reveal a window, allowing the commander to converse with operators inside the vehicle.

It is those small differences, Blake says, that make MorganFranklin stand out from the competition. In addition to providing tether capability, the vehicles feature custom fabrication and are uniquely designed to meet the client's specific operation requirements. Unlike the "cookie-cutter" approach employed by some companies, MorganFranklin custom builds each vehicle, creating unique solutions and retrofitting existing trucks when possible. By allowing the CBP to retrofit two existing QRVs rather than buying four new ones, MorganFranklin maximized the client's investment—resulting in a savings of more than \$500,000.

"A lot of our competitors are focused more on the physical build-out of the vehicles,



The drivers and passengers in each QRV have Internet access and the ability to communicate continuously en route to event sites.

Each QRV features a control center in the rear of the vehicle which includes a monitor, laptop, slide-out whiteboard, and pass-through window for convenient in-person communication with operators on the interior.

but we're a technology firm so we also bring expertise in satellite and land mobile radio communications that few vehicle builders have," Blake said, citing the team's world-class talent and construction quality. "While there are a lot of command vehicles in the marketplace, we are more focused on solving tough problems specific to organizations in high-risk environments through the innovative use of technology."

Turning Concept into Reality

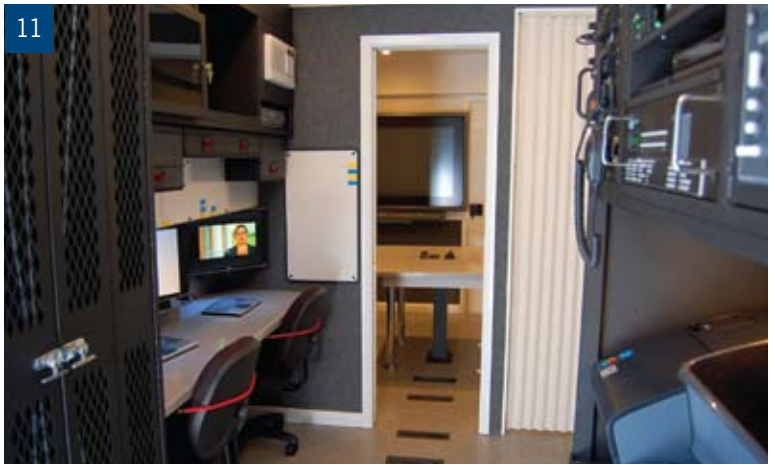
From concept to delivery, the Waldorf team communicated with the client, testing components and managing expectations each step of the way. After developing the initial conceptual design, the team met with the client to discuss additional requirements and assure that the solution was built to specifications. The vehicles' interior elements were built from the ground up by the skilled team of systems integration and engineering experts, led by MorganFranklin Senior Registered Communications Distribution Designer Dave Wagner. Beginning with interior fabrication

and custom metal work, the team thoroughly tested the electronic communications components, installed the power systems and wiring, integrated the physical interior, configured and programmed the systems, and conducted on-air satellite system testing.

Throughout the process, the team focused on identifying opportunities to surpass CBP's expectations by incorporating elements outside of the requirements, such as extra whiteboards and horizontal surfaces, durable aluminum construction, and upgraded wheels and tires to provide a tactical and aesthetically sharp look. The team also provided valuable recommendations, such as swapping standard on-the-move satellite antennas for more resilient pop-up Ku Band antennas, and upgrading hardware in the two retrofit QRVs so that it mirrored the technology installed in the duo of new vans. Behind the scenes, the team organized the wiring and technology elements to ensure reliability in rugged environments and provide accessibility for future maintenance, upgrades, and technology insertion.

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Demonstrating MorganFranklin’s responsiveness and commitment to fully meeting the client’s needs, several post-delivery challenges involving warranty, equipment, and design-related issues were also addressed, and after putting the finishing touches on the vehicles, they are now in use at CBP.

Looking ahead, the MorganFranklin pipeline is brimming with opportunities and the team hopes to further grow its capabilities in the mobile communications marketplace. But for the MorganFranklin team, nothing outweighs the importance of the underlying mission: serving the highest levels of the U.S. government. That professional commitment also translates into personal drive for the dedicated members of the Waldorf facility, many of whom served in the military.

“There’s definitely an attachment to these types of missions that involve a commitment to national security and defense. It’s a calling,” said Blake, a 10-year veteran of the Air Force. “We’re supporting some of the highest decision makers in the country. Quite frankly, in our opinion, it’s the most important mission in the entire world.”

Watch the Video
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Cover: An operator works at the rear QRV workstation.

1. Custom QRV for U.S. Customs and Border Protection.
2. Each retrofit QRV (left) was upgraded with the same technology as the custom QRVs (right), reducing project time and expense.
3. Workstations located in each QRV’s main interior and front passenger seat allow constant communication en route to event sites.
4. The QRV rear workstation includes the same technology as interior workstations, with a slide-out whiteboard and convenient pass-through window.

5. The QRV is equipped with on-the-go exterior emergency lighting and interior illumination.
6. The QRV’s interior seating is fully adjustable for easy movement while inside the vehicle.
7. A suite of powerful continuity—the CBP’s new mobile tactical command center and quick response vehicles.
8. The 42-foot custom-built MTCC trailer.
9. The MTCC’s live reporting area features prominent client logos, a fully retractable awning, and a smartboard and monitor for press conferences.

10. The rear of the MTCC features a hydraulic mast, control panel, and roof access.
11. The MTCC’s interior includes workstations and a conference room.
12. The expandable MTCC conference room is equipped with smartboard capability.
13. An MTCC workstation integrates a large-format printer and other customizations.

WHO IS MORGANFRANKLIN?

MorganFranklin is a business and technology solutions company. We help clients identify and convert high-stakes financial, management, and IT challenges into value and progress. We are operations-focused and provide the expertise, resources, and project management skills required to turn strategy into results.

Our teams combine Core Confidence™ with expertise in finance and accounting, management consulting, and technology to craft solutions that improve the efficiency and effectiveness of your operations. With fast access to diverse expertise—from auditor to engineer—we look at challenges from every angle to satisfy immediate needs and to develop long-lasting and sustainable business and technology solutions.

BUSINESS FACTS

Founded in 1998

Headquartered in the Washington, D.C., area with regional offices in Chicago and Phoenix

European operations established in London in 2007

Diverse full-time workforce comprised of industry, global consulting, Big Four, former military, and government professionals

TECHNICAL EXCELLENCE

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Unique blend of commercial and government clients

Industry recognition as a top consulting firm in the U.S.

Recognized for industry-leading workplace best practices



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