

# How the Army used tech to nab Saddam

## 4th Infantry Division vehicles outfitted with digital gear

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**TIKRIT, Iraq (CNN) -- When American troops conducted a night raid that led to the capture of Saddam Hussein in December, digital technology allowed Army commanders miles away to watch virtually every move.**

Some call the 4th Infantry Division the "digital division" because its vehicles are equipped with a system called "Force 21 Base and Command Brigade and Below," or FBCB2.

Other military units have similar systems, but the 4th Division is the first to be fully digital, according to civilian specialists attached to the division.

The Iraq war is the first time the FBCB2 has been used in combat.

The secure, digital radio system allows vehicles to be seen on a screen at a tactical operations center -- a mini war room -- in this case at the division's 1st Brigade headquarters in Tikrit.

"The FBCB2 system allows the commanders to see a real-time placement of where their assets are," said Steve Jones, an Army veteran contracted to maintain the digital communications system at the base.

Assets -- military parlance for tanks, Bradley fighting vehicles, helicopters and Humvees -- are represented by blue symbols on one of three screens in the war room.

The symbols are placed over topographical maps or satellite images of central Iraq. So-called "enemy" assets are represented by red symbols.

A civilian, Jones is on loan from Mantech, a Virginia-based information technologies company. "Maps are a thing of the past," Jones said, referring to clear acetate screens that operation planners overlay onto paper maps when preparing missions.

Digital specialists say the new technology helps eliminate human error and technical accuracy issues with the old way of drawing maps.

"You have to make sure [the screens] are drawn perfectly to the scale of the map," said Jones, a wiry former military police officer who spent six years in the Army.

"If one layer is out of place, then that shifts and basically, you have a problem."

In the war room, division tacticians use an Army Battle Command System, or ABCS, that is networked together by a fiber-optic cable, said Larry Davis.



Mike Iacobacci, a civilian field service representative with the Fourth Infantry Division's first brigade, shows off the digital division's FBCB2 system.

The goateed civilian is a former Army officer now working as a network engineer for Northrup Grumman Mission Systems, a Los Angeles-based software developer.

Commanders use a Maneuver Control System with a graphics program to create orders for missions such as Operation Red Dawn, the raid that led to Saddam's capture December 13.

"Anything you can do on paper, you can do on the computer," said Clarence Joseph, a retired command sergeant major contracted as a digital specialist from Telesis Corp.



The Army's FBCB2 system uses blue symbols on digitally updated maps to represent the location of "friendly forces."

Joseph said operation orders are pushed out to troops in FBCB2-equipped vehicles in the field.

"Instead of having a map that has to be updated every few hours, it is a real-time map that is updated as the vehicles move. That way the battle captains can adjust the way they are fighting their battle," Jones said.

In the vehicles, troops use a computer monitor, sealed keyboard, and 6- to 10-gigabyte hard drives with a 512MHz or 333MHz data processor.

The gear is fused into a series of thick, metallic protective boxes situated between the vehicle's passenger and driver seats.

"This is a normal computer that you would find in your house, but the Army has made it "ruggedized," so it can survive war zone environments, said Mike Iacobacci, a civilian field service representative attached to the 1st Brigade.

The contractor with the shaved-head said he traded his Army uniform years ago for a technician's civvies. Iacobacci is often seen on base tweaking FBCB2 equipment and sometimes runs into soldiers with whom he used to serve.

The vehicle passenger, usually a higher-ranking soldier than the driver, uses the keyboard or touch screen monitor to access real-time maps and track troop movements -- even send commands via e-mail.

"I send free text, but I can also send log reports and log the status for equipment when I need it, as well as for personnel when I need it," said the 1st Brigade's top enlisted man, Command Sgt. Maj. Lawrence Wilson, during a bumpy Humvee ride outside Tikrit.

While typing an e-mail to his troops in the passenger seat, Wilson pointed out a low-tech solution to keeping the gear up and running: "We use a pencil eraser to clean the wire connections. It may seem silly, but it works."

Not impressed? Wireless Internet, palm pilots and instant messaging may be common in industrialized nations, but soldiers are quick to point out that Iraq is not one of them.

4th Division soldiers consider the secure, instantaneous digital radio network a technological wonder. Iacobacci said information is sent between troops in the field via a voice radio system, Internet controller and global positioning system all also fused into the vehicle's chassis.

He said an enhanced position location reporting system -- similar to an Internet server attached to the back of the vehicle -- helps vehicles on different servers communicate with one another and with commanders in the tactical operations center.

Civilian digital specialists in Tikrit say the Army is keen for them to live and work in the war zone because of their past military experiences.

"We understand the mindset and what we're getting into," said Davis, who spent 10 years in the military. "We're like the warranty specialists willing to fix it on location."

Most civilian specialists represent the companies that designed the software -- much of it too complex for Army technicians.

"The Army is capable of running the software, but if it breaks, it is our expertise that allows us to fix it," Davis said.

On the night troops found Saddam in an underground crawlspace 9 miles (15 km) southeast of Tikrit, some officers watching events from the 1st Brigade's tactical operations center said technology couldn't replace human eyes.

"I really wanted to be on the ground," said Maj. Stan Murphy, who heads the intelligence unit that secured information that led to Saddam's capture. "I was wondering what it was like out there."

The man who led the raid agreed, saying there is no substitute for the human factor.

"At the core of it is a soldier that imagines what must be done, thinks through how to get it done, then gets it done. The technology is just an enabler," said Col. James Hickey, the 1st Brigade's commander.

The civilian specialists concede this enabler doesn't come cheap, but they are reluctant to talk about the technology's price tag.

"How much does the equipment cost? This is equipment that will save soldiers' lives," Jones said.

"If a soldier is attacked, other units can find him with this equipment. It is worth it that soldier have the best equipment [they] can have."