

Graduation By Satellite: Tachyon Provides U.S. Army Parents in Iraq with Historic Opportunity for Virtual, Real-Time and Interactive Participation in Their Kids' High School Graduations

With more than 140,000 troops deployed to Iraq in the last year, the U.S. Army wrestles with the ongoing problem of how to maintain morale and keep soldiers connected to family back home. The Army is especially sensitive to the need for open lines of communication in situations where soldiers must leave their children behind.

To that end, the U.S. Army Europe (USAREUR) devised the ultimate morale-boosting family support initiative on behalf of high school students studying at the Department of Defense Dependents Schools-Europe (DoDDS-Europe) and their parents serving in Iraq.

In June of 2004, 14 DoDDS-Europe high school graduations were televised in real time to parents serving in Iraq via satellite broadband streaming video connections generously donated by Tachyon Networks Incorporated ("Tachyon"). Parents deployed to Iraq in support of Operation Iraqi Freedom watched proudly



Army personnel set up Tachyon connection at DoDDS high school in Wiesbaden, Germany. Photo courtesy of DoDDS-Europe.

as their children received diplomas in ceremonies conducted 2,000 miles away in Germany.

Tachyon technology also gave parents a chance to immediately communicate their love and congratulations directly to their sons and daughters via Internet email links during the video Web cast of each graduation.

The Beginnings of an Important Morale-Boosting Idea

The virtual graduation program got its start in 2003, when five DoDDS-Europe schools in Germany and Italy learned they had students with parents deployed to Iraq.

"When everything else in their world has turned upside down," says Frank O'Gara, public affairs officer for the school system, "we wanted to make sure students with parents in Iraq had as normal a graduation as possible."

O'Gara emphasizes the role the Army plays as surrogate parent when students are separated from a mother or father due to deployment. He says the need for routine and normalcy is greatest when domestic situations are disrupted, especially at an important time like a high school graduation when most students take it for granted they will share the proud day with their parents.

In 2004, the DoDDs did an audit to determine how many students had parents deployed in Iraq. The findings were overwhelming. More than 200 students at 14 high schools in the DoDDS-Europe school district had parents in Iraq. In one instance, a student had both parents in the war zone.

With so many students separated from their parents, the Army's family support initiative was more important than ever before. But with more students graduating, at more than a dozen different schools in Germany, the logistics of enabling the virtual graduations became increasingly complex and time-consuming.

Tachyon Simplifies Production of Virtual Graduations

With ceremonies occurring at high schools across Germany, it was critical that all technology used by the Army be transportable and set up as quickly as possible. The production team faced a daunting challenge of coordinating delivery, setting up equipment and producing graduation ceremonies for 14 schools during one week's time in early June.

In support of the effort, Tachyon donated its "Quick Deploy" transportable satellite units that can be set up in



Final technical preparations are made as families gather at DoDDS high school in Hanau, Germany. Photo courtesy of DoDDS-Europe.

less than 30 minutes. The satellite units consisted of a satellite dish, a powerful radio and Tachyon's proprietary Internet Protocol Transport ("IPTransport") static routing units. Tachyon also contributed for the events the necessary bandwidth over its satellite network, amounting to more than 56 hours on the company's network providing terrestrial-like performance at 2Mbps downlink and 512kbps up link speeds.

Installation support needed to ensure the system delivered real-time streaming video to the satellite gateway was provided *gratis* by Tachyon. The satellite units located in the schools were connected to Iraqi locations via Tachyon's gateway located in Amsterdam, The Netherlands.

The security sensitivity of the graduation ceremonies was high. To ensure the highest levels of security during the streaming of all 14 ceremonies, Tachyon drew on its ability to provide end-to-end encrypted data transmission through the use of its STAR/STAC proprietary secure traffic accelerators. In essence, the company was able to offer data transport via a virtual private network (VPN) connection at the same speeds as terrestrial networks provide.

Engineers onsite in Germany worked with MPEG-4 encoders from VBrick Systems Inc. to compress the live footage. Footage was then transported to a local server bank provided by Akamai Technologies Inc. From there, footage was delivered at T1/E1-like speeds via Tachyon's satellite units at the schools to its Amsterdam gateway and then over the Tachyon satellite network to Iraq.

Set up was also necessary in Iraq, so soldiers—even those in the most remote and harshest desert environments—could gather around a computer and watch the graduations as they took place in real time and send direct messages of love and congratulations to students via the secure satellite link to sons and daughters.

Reliability was of paramount concern to DoDDS-Europe. The agency needed to guard against transmission failure during the 90-120 minute-long ceremonies. It was also critical to have a reliable system in place to ensure success of the Internet messaging, live broadcasts and subsequent rebroadcasts on Armed Forces television for soldiers unable to participate in the original Web cast.

With the donated equipment and services from Tachyon and other technology vendors, the Army's team was successful, boasting of the ease with which Tachyon's compact, portable access units were delivered and installed. This was no small feat given that the equipment—in some instances—needed to be transported from one side of Germany to the other in a matter of hours.

Tachyon's performance met and surpassed the Army's expectations. The company's guarantee of 99.9 percent network availability held true despite the security and logistical challenges of communicating into a war zone.

Heart-Felt Results

It's impossible to estimate the value of the virtual graduation program to the DoDDS-Europe high school students and their families.

"The kids' eyes filled with tears of joy, knowing that their parents were watching the ceremony," said O'Gara. "It was also meaningful for them to hear from their parents via email directly after the ceremonies."

Attending three of the 14 graduations, O'Gara found the experiences profoundly moving. Students he spoke with shared similar reactions.

Dwayne Scales, a graduating senior at Bavaria's Manheim High School, in speech captured on video, said, "If they could be here, they would be here, but they can't because they're doing higher things that they can't really control."

Another student wept as she addressed her father via video camera. "I hope to catch you on the flip side. I love you Daddy," she said.

Tachyon considers it a privilege to have made the broadcast of the graduations possible.

"We were pleased to allow soldiers far from home to be present at this momentous event in their children's lives," says Mark Gercenstein, president and CEO of Tachyon. "We are proud to have donated the technical infrastructure and bandwidth that played such a key role in uniting soldiers with their children at a special time of their lives."