Fourth Estate Wireless at the Launch

By Adam Stone – www.wifiplanet.com

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If all goes as planned, NASA this summer will take an historic step, as the space shuttle program boldly goes where no WiFi has gone before.

At the anticipated July lift-off of the Space Shuttle Discovery, journalists on the ground will be able to submit stories in real time, thanks to an extensive wireless mesh network covering a six-acre site at the Kennedy Space Center.

"We've essentially created a hot zone for the press, so they can watch the launch and file their stories simultaneously," said Mark Whitton, general manager of wireless LAN solutions for Nortel Networks, the company deploying the mesh infrastructure for the event.

The biggest challenge here is sheer volume. "We have to make sure there is enough capacity for the 2,500 or so reporters that are expected. We know we are going to get bombarded by these reporters, so it is a challenging problem to see that you have the capacity that you need," Whitton said. With all those scribblers expected to log in simultaneously, "you need to have tools to do predictive planning, you need to have good routing algorithms and you need to have the signal to begin with."

This is not wholly unfamiliar territory for Whitton. Working on the cellular side of the shop, he used to manage capacity control at college football games "where 100,000 people would see the home team score and they all would reach for their phones."

This time around, Nortel has sought outside help. **Pronto Networks'** operations support system (OSS) software is managing the back end of the production, providing such features as user authentication and bandwidth allocation.

Security is naturally tight around a shuttle launch, which makes user authentication especially important. "The last thing NASA wants is random people hanging out on the network at Cape Canaveral," said Julie Shevlin, director of business development at **Pronto**.

Using the OSS software, which runs out of Pronto's data center in San Jose, journalists can register several weeks in advance of the launch and will be assigned user names and passwords. This helps not only to control access, but also to reduce any administrative hang-ups on launch day. "They show up, they have a user name and password that they have chosen themselves, and they are connected as soon as they sit down," Shevlin said.

The **Pronto OSS** also works with the Nortel traffic-management system within the mesh to ensure there is enough room to accommodate everyone, by allocating bandwidth at the user level using a proprietary algorithm. "So you wouldn't see a user get zero bandwidth while another gets five megabytes," Shevlin said.

At the same time, Nortel will be configuring the network infrastructure for maximum efficiency. "You have to determine how much aggregate traffic do you think you are going to get, and that determines how many backhaul points you are going to need," Whitton explained. "You need to have tools to do predictive planning, you need to have good routing algorithms and you need to have the signal to begin with, which we get by using multiple radios."

Likewise, the mesh network of the system should help to keep things flowing smoothly. "We can route traffic around congestion, with the autonomous network nodes making decisions in real time, as traffic happens," Whitton said.

As NASA counts down to blast off, Shevlin says, the mesh deployment in use represents another kind of launching. With the rising demand for WLAN systems-management software, she said, WiFi is firing its booster rockets, thrusting into the next stage of its development.

"Finally the industry is moving to say that we need more than just traditional 802.11 Internet access. People want the value-added features like bandwidth allocation, things like advertising management to help build value into the deployments," she said.

"Now that people have used traditional WiFi, they have begun to seen the lack of back-end software to manage it," she said. "Now even if the service is free, people want to know who is on the network, how much bandwidth they are using, when are they connecting and from what access points."

This is turn could push the systems-management market to a whole new altitude.