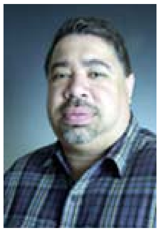

Evolution of the Wireless Network

By Cary Burnette

The Division of Information Technology [**DoIT**] at North Carolina Agricultural and Technical State University has supported a complete wireless campus network, NCAT Local Area Wireless Network (*NCATLAWN*), for the past 3 years and has supported a partial wireless network for nearly 6 years. During this time, the level and methods of security, encryption, and authentication have evolved. The *wireless* network has changed from a completely open network to one that supports different levels of security depending on the needs of the user.

NCATLAWN supports 3 levels of security, authentication, and encryption. The first level is a Secure Socket Layer [SSL] web-based portal for campus guest users. The second level is Lightweight Extensible Authentication Protocol [LEAP] and Protected Extensible Authentication Protocol [PEAP] for campus users. The third level is Wired Equivalent Privacy [WEP] based security for supporting specialized wireless devices which cannot accommodate the higher levels of security.

During the summer of 2007, an SSL web-based portal was added to the wireless network to make it easier for guests visiting the campus to gain access to the wireless network. This web portal should only be used by campus guests because it can only support a limited number of users at one time. Additionally, the SSL web-based portal provides limited network access to campus and internet

Computers are initially configured to logon to the wireless network using PEAP. Most computers have a built in wireless card utility that is used to configure the computer to enable the PEAP protocol. These utilities vary on different computer types; therefore, please consult your documentation to configure your computer to enable PEAP. The SSID for using PEAP is ***ncatlawn***.

The third method of security is Wired Equivalent Privacy [WEP] key standard. WEP is only used for devices that do not support LEAP/PEAP or have web access. This method is usually limited to wireless industrial controllers or scanners. If your department requires assistance to obtain a specialized device working on the wireless network, please contact Aggie Tech Support at 334-7195 and a wireless engineer will be assigned to assist you.

In addition to improving security and authentication methods, **DoIT** is working to improve network coverage. Currently, full wireless coverage is provided in all academic and administrative buildings. Residential buildings have wireless coverage in common areas only. We have not yet designed outdoor wireless coverage. However, users may connect to the network via the wireless signals from inside nearby buildings. We are examining expanding outdoor wireless coverage. If you think there is a problem with the services. The password for the web portal is changed on a periodic basis. If you are hosting a guest, and they need wireless network access, please contact Aggie Tech Support at 334-7195 for the current password. The Service Set Identifier [SSID] for the web portal is ***lawnguest***.

The second method of security is Lightweight Extensible Authentication Protocol (LEAP) and Protected Extensible Authentication Protocol (PEAP). LEAP was recommended initially when security was added to the network. However, with the discovery of a security risk within LEAP, coupled with LEAP's incompatibility to some operating systems, **DoIT** added PEAP to ensure security for campus wireless users. PEAP is now the recommended encryption method for campus wireless users. PEAP provides secure and encrypted wireless communication. It is supported by most wireless card vendors and new operating systems.

indoor wireless coverage in a building, please contact Aggie Tech Support at 334-7195 and someone will be assigned to reassess the coverage in the offline building.

As new wireless standards network and technology are developed, **DoIT** will continue to examine and deploy them when appropriate. We are currently testing Voice over wireless. We will soon start testing 802.11n wireless technology which is used to provide more bandwidth for enhanced network connectivity. Please stay tuned as we continue to announce new wireless initiatives.▪

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