University of Manitoba
Information Services and Technology
Wireless Networking Procedures and Guidelines

Purpose:
These procedures and guidelines are to assist the deployment of wireless networking technology on the University of Manitoba campus. It is intended as a follow-up to the Information Services and Technology (IST) ***Standards for Wireless Networks*** http://umanitoba.ca/computing/ist/guidelines/wireless_standards.html
Wireless networking and the effective management of this technology is vital to the research, teaching, administrative and student learning activities within this University.

The objectives are to ensure interoperability, reliability and security to the wireless network service while protecting the University's information resources and electronic communications. The inherent nature of the wireless technology requires cooperation and coordination between departments and faculties to facilitate deployment in different buildings and prevent possible radio frequency spectrum interference or network impairments.

Scope:
These procedures and guidelines apply to all existing and future installations of wireless networking technologies by faculty, staff and students in the 2.4 GHz and 5 GHz radio frequency spectrums on the University of Manitoba campus, both inside buildings and for outdoor areas.

All University of Manitoba's information technology policies and procedures http://umanitoba.ca/admin/governance/governing_documents/community/index.html apply to the use of wireless networks at the University of Manitoba as do all other applicable University of Manitoba policies, guidelines and procedures and all federal, provincial and civic laws.

Background:
The Information Services and Technology (IST) department is responsible for the design, installation, support and maintenance of the campus network infrastructure up to and including the wired communications outlets. It extends to include the wireless access points and the authentication and encryption methods used to secure wireless access. Wireless access points are considered to be part of the campus network.

The proliferation of faculty required or personally owned laptops which have built in wireless capability, has caused a rapid demand for wireless networks. Students, faculty and staff want to use their laptops in libraries, lecture theatres, classrooms, study areas and outdoor areas. However, wireless technology is not intended to replace network wiring but rather to complement it. A wireless network can provide network connectivity in large open areas or where restrictions such as asbestos or historical buildings would limit wired access.
The University of Manitoba wireless network standard and central management of the 2.4 GHz and 5 GHz radio frequency spectrum are necessary to protect valuable information resources and ensure the maximum amount of interoperability. The Information Services and Technology department conducted a wireless Request for Information (RFI) in the fall of 2003. The technical requirements for wireless

networking on Campus can be found in the document ***Wireless Networking Hardware and Technical Requirements***
http://umanitoba.ca/computing/ist/guidelines/media/wireless-technical.pdf

Wireless Procedures:

- Compliance with the following procedures is required. IST will not be actively searching for non-compliant wireless networks except when investigating network problems. IST does expect compliance with these procedures and will disconnect any non-compliant devices from the University of Manitoba wired or wireless networks.
- The University of Manitoba's Information Services and Technology (IST) department will provide exclusive management and radio frequency channel allocation for new wireless networks which connect to the University of Manitoba wireless data network.
- The University of Manitoba's Information Services and Technology (IST) department will provide the design, specification, installation, operation, and maintenance for new wireless networks connected to the University of Manitoba wireless network.
- IP is the only protocol supported.
- All wireless networks must be compatible with existing University of Manitoba technology for authentication and encryption.
- All wireless network access to the University's campus data network must authenticate with a valid "CC" account on the IST radius server. Restricted network access will be provided until the user has authenticated.
- Wireless networks owned by other University of Manitoba units or individual faculty, staff or students are permitted provided they are not connected to the University's campus wired networks and they are approved by IST as meeting the guidelines covered in this document and providing they do not cause interference with the University of Manitoba/IST wireless networks.
- A site survey and an IST registration for the use of the radio frequency spectrum will be required prior to the installation of any wireless networking equipment onto the University of Manitoba wireless network. In the case of radio interference, IST will work with the owners of the devices to eliminate the interference to the wireless network. In the event that a solution cannot be found, the disruptive devices must be removed.
- In the event that a wireless network poses a security threat, measures will be taken to protect the integrity of University data and systems.
- The demarcation point for the network service will be the access point. The IST networking group will be responsible maintenance and support of the IST supported access points and the network connecting them to the campus data network.
- IST is not responsible for the purchase, installation, configuration and support of the wireless client cards in computers.
- A more secure, authenticated and encrypted wireless network service, will be implemented once the applicable standards have evolved and been ratified.
- All IP addresses for the University of Manitoba's wireless network will be provided through the DHCP servers administered by IST.
- The connection of servers to the University of Manitoba's wireless network will not be permitted.
- All installations must be in compliance with the health, safety, building and fire codes.
- IST does not assume any responsibility for the intrusion into the wireless network, nor the security of the communications on the wireless network.

- Any intruders or otherwise abusive users will be investigated the same as on the wired network.

Ad-Hoc or Peer-to-Peer Networks:
Ad-hoc or peer-to-peer networks between laptops, PDAs, access points and other devices are not permitted. These networks can operate on the same channels used by the University of Manitoba wireless network. However ad hoc networks can open your stations to be directly attacked and used as conduits to the network.

Responsibility:
The accountability for the adherence to these procedures and guidelines as well as other University of Manitoba information technology policies, which are not maintained by IST, is the responsibility of the dean, director or department head. This responsibility may be delegated (Service Level Agreement) to IST for the installation, support and maintenance of the wireless network operating in the aforementioned radio spectrum.

Radio Signal Interference:
The wireless network operates in the unlicensed 2.4 GHz or 5 GHz radio frequency spectrum and conforms to the IEEE standards. The use of other devices including wireless networking devices, cordless phones, microwave ovens etc., in these same spectrums may disrupt the University of Manitoba's wireless network. If interference occurs between other devices and the University of Manitoba's wireless network, the wireless network will have priority. IST will provide assistance in eliminating the interference. Where a recommended solution to interference cannot be provided the wireless network will have priority.
These procedures apply in principal to wireless WAN networks as well.
Please contact Doug Dennis at 474-8290 if you wish to discuss this or if you have any questions.