Source: **UMTS Forum**

Title: **TDD Ad Hoc Group Report**

Agenda item: **10**

Document for:

Decision	
Discussion	
Information	**X**

UMTS Forum TDD Ad-hoc Group: Relative Positioning of TDD & WLAN

Report for 3GPP PCG#9

Objectives of the TDD Ad-hoc Group

To carry out **market survey** to obtain information on likely market introduction of TDD, status of manufacturers developments, features of TDD terminal and infrastructure equipment, etc.

To identify the **deployment scenarios** required by operators with paired and unpaired spectrum (across FDD/TDD) covering both wide area and local area applications of TDD (with GSM/TDD also as a possibility)

To create **repository** of information on TDD

To investigate **harmonisation** issues between FDD and TDD

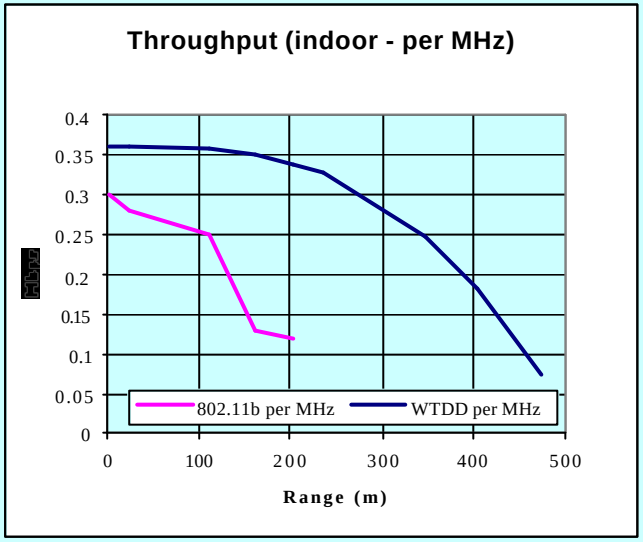
To consider the **relative positioning of TDD and WLAN** technologies and respective deployment scenarios

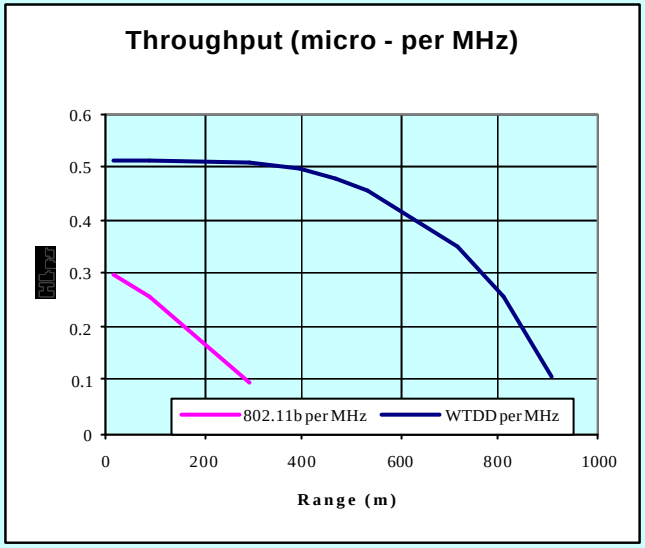
TDD-HCR & WLAN

- TDD uses Licensed band whereas WLAN use License-exempt bands.
- Use of WLAN frequencies for Public Commercial use is controlled by national regulations.
- TDD is designed for Mobile operation with voice and data whereas WLANs are designed for nomadic operation, focused on data.
- Current 802.11b based WLANs have limited multi-cell performance, weak security, limited QoS controls and loosely specified inter Access Point Mobility Management
- TDD radio access networks are tightly interconnected to operator core networks for the purposes of Customer Management (Subscriptions, Authentication, Billing etc) and Services (Messaging, Multimedia etc).

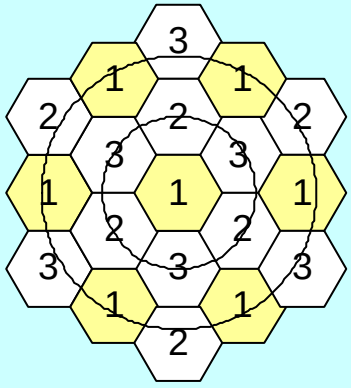
TDD & WLAN in Public Hot Spot: Single Cell and Multi-Cell

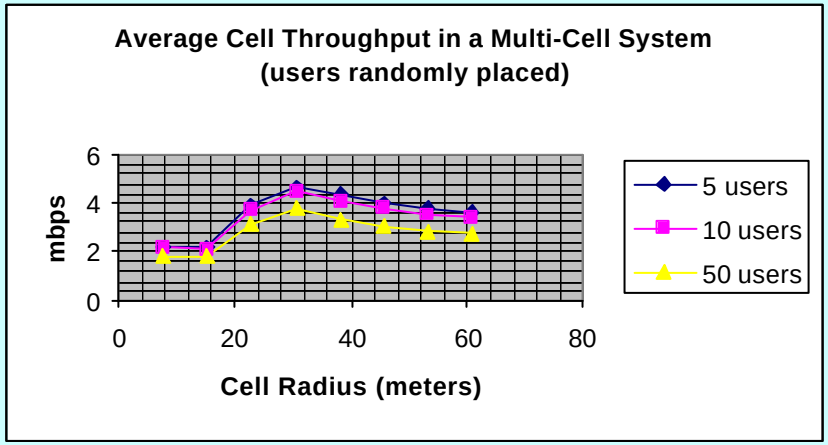
Comparison of TDD-HCR & 802.11b based WLAN performance in a Single-Cell





802.11b based WLAN performance in a Multi-Cell deployment





TDD Advantages over WLAN

- TDD is fully scalable and can offer much longer range than WLAN in outdoor applications
- TDD can deliver continuity of user experience and consistent quality of service through
  - Built-in integrated user mobility and service roaming features with FDD and GSM
  - Common core network with FDD in terms of user profile management, authentication, billing, etc.
- WLAN is an access technology and will require considerable additional developments for integration with cellular networks