Acting Sub Lieutenant Narong Phoomsuk 2010: P2P File Sharing Detection on
IEEE802.11. Master of Engineering (Computer Engineering), Major Field: Computer
Engineering, Department of Computer Engineering. Thesis Advisor:
Associate Professor Anan Phonphoem, Ph.D. 85 pages.

BitTorrent is one of the most popular peer-to-peer file sharing protocols due to its
efficiency and ease of use. The protocol separates a file into small pieces. One a piece of file has
been completely downloaded, the particular piece becomes a new seed for further downloading.
Therefore, more participants mean less downloading time. By its greedy characteristics and
popularity, BitTorrent can consume all network resources in no time causes a starvation
problem to other applications even in the high speed LAN. The problem becomes more severe
in the limited bandwidth environment such as wireless LAN.

In the paper, a new approach to identify BitTorrent protocol in wireless LAN
environment has been proposed. The mechanism is a light-weight detection protocol, based on
the size of data link frames, which is small enough to be implemented on an access point. The
method can be divided into 3 phases: Sampling, Filtering and Decision. Furthermore, this paper
provides the experimental setup for finding the suitable sampling starting time and the optimal
sampling time interval used for highest accuracy rate of new detection mechanism.

The experimental results show that the mechanism can detect BitTorrent in real-time
mode with high accuracy rate. With a light-weight design based only on the data link frame size
monitoring can cause the ease of implement with low computation power. The mechanism is
also able to detect the encrypted transmission.

		/	/
Student's signature	Thesis Advisor's signature		