

# Development of Wireless ATM and its Technical Issues

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**Abstract**— The growing significance of portable computing and telecommunication applications has provoked the studies on broadband wireless networks technologies such as wireless ATM (Asynchronous transfer mode) or Wireless WATM. WATM technology has been studied over the last duo of years by development groups as well as standard organization international. Some research and growth attempts regarding validations and cleansing handover and location organization etiquettes have been executed. WATM aggressively considered as a potential framework for next generation wireless communication network capable of supporting integrated (QoS) based multimedia services. We provide a system level explanation of main technological problems in the requirement of WATM networks and its protocol building with data linkage controls, medium access control MAC wireless control and mobile managing problems.

**Keywords**— WATM Networks; User Plane; MAC; QoS.

## 1. Introduction

WATMN is a wireless networks have been advocated as significant tools for all sorts of services and networks. Most citizens consider that ATM will be the typical for the future Broadband incorporated services B- ISDN digital network. Asynchronous transfer mode unites both data and multimedia information in to the wired networks while scales well from stamina are to the client premises networks. The major components of the wireless network are mobile terminals, base stations and a power and switching unit. A speedy propagation of elevated performance moveable computers has an increasing there are two general processes to comprehend WATM. The most important practice is to sketch the air interface of the wireless LAN autonomous of the ATM cell plan and give protocol exchange at the wireless entry point that linked to an ATM based stamina. The next technique is to give a faultless addition of the ATM services and the linked QoS power over the wireless medium.

## 2. Existing System

The basic ad hoc WATM system allows all MTs designed for a BS-oriented system to participate in ad hoc networking, while some MTs with additional functions can

act as the central controller of the fully meshed ad hoc network. Evaluation in the performance of the ATM is based on the MAC protocol proposed in the DAVIC specification as well as for the CMDS system at the time of transporting this type of traffic. They present the design and performance of a novel AFEC scheme for TCP/IP data traffic in WATM networks. We proposed the DCRS that could improve wireless channels utilization and normal channels are started by both new and handoff calls. The performance of the WAND control stack is looked at in terms of the additions that had to be made to support the mobility.

## 3. Methodology for Proposed System

We proposed to first define a basic ad hoc wireless ATM model using user plane and control plane protocol. An adaptive FEC code merging scheme is projected to offer the good defense for freight data with the maximization of its code rate to diminish the additional bandwidth for FEC transparency. They present a mac protocol that efficiently integrates multiple BISND traffic classes over a wireless ATM link. They have to explore the fundamental problem of providing lifetime connectivity to ongoing sessions initiated by mobile user in a cell based WATM networks.

## 4. Protocol Architecture using Ad Hoc WATM Model

A basic ad hoc WATM model which is mainly concerned with creating and dissolving wireless peer-to-peer connections between any two MTs (mobile terminals) of a single fully meshed ad hoc networks. Peer to peer (p2p) communication model allows each network node to be both a client and server. A WATM terminals is used as data communication a terminal is any device that terminate one end of a communicated signal. This protocol architecture model is shown for the two different types of ad hoc WATM terminals. They are U-plane and C-plane terminals. U-plane: The data plane (sometimes known as the user plane, forwarding plane, carrier plane or bearer plane)carrier the network user traffic. C-plane: The control plane is the part of a networks that carries signaling traffic and is responsible for routing.U-plane communication always take place between two user terminals.

The MT(user) is used user application, ATM adaptation layer, Asynchronous transfer mode and WATM radio access layer.c-plane communication always take place between one user terminal and the central controller. To establish a U-plane connection, each mobile terminal uses in C-plane the user side functions of the mobile enabled UNI (user network interface) to communicate with the central controller. These functions are denoted by "M"UNI (user side).Because the central controller is defined as a logical entity.

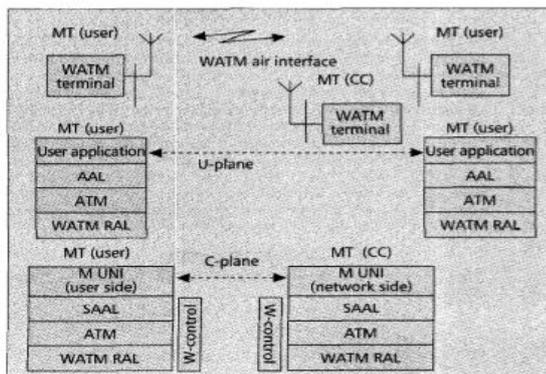


Fig.1: Ad hoc WATM basic model

The terminal acting as the CC can additionally be involved as a user in the U-plane with the other user terminals. The central controller has some selected network side functions, denoted "M"UNI (user network side), which would be required in the base station (BS) but not in an MT of WATM access network. The CC enabled MTs must contain both "M"UNI (user side) and (network side) functions. While a user MT only contains the "M"UNI (user side) functions. A unified reservation based is used as MAC protocol.

## 5. Conclusion

In this article, the development of wireless ATM and its technical issues has been described. The basic ad hoc WATM system allows all MTs designed for a BS-oriented system to participate in ad hoc networking, while some MTs with additional functions can act as the central controller of the fully meshed ad hoc network. The fully meshed ad hoc cluster can further be extended by interworking and/or forwarding terminals beyond the one-hop radio coverage area when wireless terminals with sufficient computing power and memory are available. We proposed to first define a basic ad hoc wireless ATM model using user plane and control plane protocol.

## 6. Future Enhancement

The basic ad hoc WATM model needs to implement in any two of mobile terminals, it cost become a very

important factor. Low cost can be achieved if we generally limit the basic ad hoc WATM modes to the following functions:

- PHY and MAC layer support for an MT to setup or release an ATM VC to another MT.
- PHY and MAC layer support for MT to register/deregister with the CC.
- PHY and MAC layer support for multiple access of a common radio channel.
- Wireless UNI signaling and Wireless call admission control (CAC)with relaxed QOS enforcement.
- Optionally, authentication and wireless terminals admission control (TAC).

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