Subject: Operational Description FCCID GAofdm900

1. Introduction

1.1. General

The information contained in this manual provides GigAccess™ system overview and instructions for Planning, Installation, Configuration, and Operation of both the Access Units, the Subscriber Units including antennas and accessories.

1.2. GigAccess™ System Overview

GigAccess™ is WaveIP's wireless point-to-point and point-to-multipoint broadband communication system. The basic subsystem is composed of a single sector, which consists of an AU (Access Unit) and up to 128 SUs (Subscriber Units). Each sector is a stand-alone communication network operating on a star topology with a gateway to the WAN, which allows two-way communication between the SUs and the WAN via the AU. A Sector may be divided into sub sectors, which are consecutive to the SUs within the sector.

A sector may include a BC (Base Controller) as an option. The BC is based on a PC and is connecting to the AUs via the Ethernet. The interface to the BC is a 10/100 BASE-T, Ethernet port, which provide an NMS (Network Management System) that can be integrated through an SNMP interface to high level NMS of the service provider. Its main purpose is to configure the AUs and SUs with SLA (Service Level Agreement). Once the AU was configured, the configuration file is burned into an internal FLASH memory and the AU can run autonomic without the need of a BC (stand alone configuration).

Figure 1-1 depicts a general description of a typical sector in the GigAccess™ system.

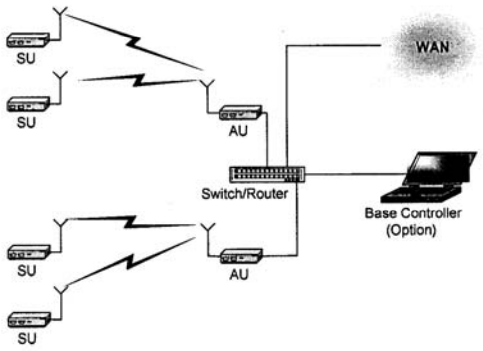

Figure 1-1: General Description of typical sector in GigAccess™ System

The sector uses a single radio channel frequency that carries up to 11 MBPS of data throughput. The data bandwidth is divided between the traffic from the AU to SUs (downstream) and the traffic from the SUs to AU (upstream). GigAccess™ utilizes Time Domain Duplex (TDD) technique in

order to divide the bandwidth periodically, based on FRAME SIZE. The portion of the frame, which is allocated to the upstream traffic between the SUs, is TDMA (Time Division Multiplex Access) time domain technique.

It is controlled dynamically and allows a very efficient way of channel capacity utilization. A small portion of the capacity is allocated for new SU registration. The registration slot is allocated to the SU based on slotted aloha algorithm.

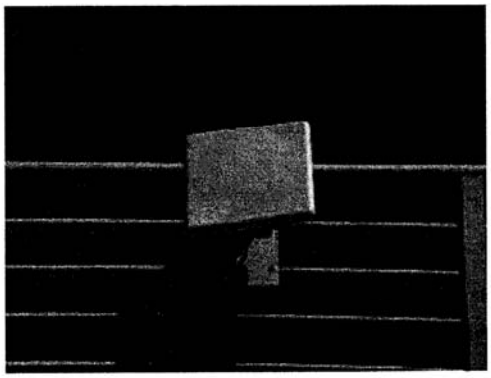

Figure 1-2: GigAccess™ Outdoor Unit

The GigAccess™ MAC layer is based on IEEE 802.16 MAC standard with additional proprietary attributes, which allow some special features such as Consecutive AP™.

GigAccess™ networking enables routing and QoS (Quality of Service) queuing of traffic, based on classification of packets information in layer 2, 3 & 4. In certain instances QoS queuing can be done using packet information (priority defined by the management).

Operating in the unlicensed 900 MHz frequency band, GigAccess™ OFDM 900 leverages Direct Sequence Spread Spectrum (DSSS) technology to deliver high data rates, high spectral efficiency in addition to immunity to interference and line of site boundaries via patent pending consecutive-AP™ technology. GigAccess™ OFDM 900 ensures always-on connectivity to full range of IP-based services, including fast Internet streaming video and VOIP. GigAccess™ OFDM 900 provides an independent infrastructure, which is easy to deploy with very low operating costs.

In case of NLOS (Non Line of Sight) between the AU and the SU due to obstacles such as tall buildings or mountains, a consecutive sector can be used. In this case the SU Ethernet output feed a consecutive AU, which acts as a repeater to bypass the obstacle as shown in Figure 1-3.

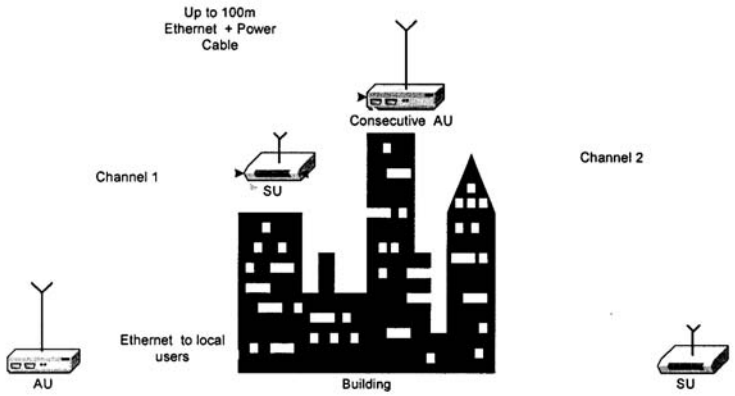

Figure 1-3: Consecutive Sector principle