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Re:		
Abstract	This document summarizes the situation of the regulation and standards existing in various countries in the world in the 3.5 GHz band.	
Purpose	Information	
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The use of the 3.4-3.8 (4.2) GHz band for FWA

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Introduction

This document summarizes the various situation, from the regulation and standard point of view in the 3.4-3.8 (4.2) GHz band, which is one of the main bands targeted by 802.16.3. The document is intended as information for both the co-existence and standard specification work which is going to take place in 802.16.3.

Regualtion

International Bodies

Radio Regulations

The radio regulations allocate this band on a primary basis in region 1 to the Fixed Service, which includes Point-to-Point, Point-to-Multipoint, Fixed Satellite and Electronic News Gathering / Outside Broadcasting services. In region 2 (America) and 3 (Asia and Pacific) it is allocated on a co-primary basis to the Radio location service (radars). However, region 2 states are scheduled to clear this band for the fixed service.

ITU-R, JRG 8A/9B

A preliminary draft new ITU-R recommendation recommends frequency plans for that band. It mentions that in a number of countries the band 3700-4200 MHz is heavily used by both point – to – point and fixed satellite service. The ITU-R recommendations offers two channel plans, one which is based on blocks of 25 MHz band (as in the Americas), and the other is similar to the CEPT/ERC recommendation for that band (see below).

CEPT/ ERC

In Europe two recommendations exist for that band. Those are CEPT/ERC recommendation 14-03 for the band 3410 – 3600 MHz and CEPT/ERC recommendation 12-08 for the band 3600-4200 MHz. The recommendations apply for both point-to-point and point-to-multipoint systems.

The recommendations for P-MP are based on channel plans. Namely, the regulator may assign “channels” to each system. In this band the channel spacing is very flexible and can vary from 0.25 MHz to 50 MHz. Two duplex spacing options are given, 50MHz and 100 MHz. It should be emphasized that TDD is not specifically forbidden. CEPT/SE-19, and ETSI/TM4 are studying the co-existence of different P-MP systems, including TDD.

CITEL

In the Americas CITEL recommendation 26 has allocated only the band 3.4-3.7 GHz for FWA.

National Bodies

Australia

The packaging offer was recently (April 17, 2000) published. The packaging plan is based on a 2.5/5/7.5 MHz raster, but systems based on 3.5 MHz raster are not excluded, and can be fit within a combination of this lots.

For details see: http://203.37.2.230/3_4GHz/3point4ghz.htm

Canada:

The band 3.4-3.55 GHz was allocated for FWA for areas outside the main cities. The band is divided into sub-bands of 25 MHz each. Both FDD and TDD are allowed. In the future, it is expected to open the band 3.55 – 3.7 GHz are reserved for future FWA expansion in metropolitan cities. In the 3.3-3.4 GHz band there are legacy radars operating in known locations.

Germany

In a recent auction 14 MHz bands were awarded on a regional basis. Up to 2 licenses were given in a region. The band used: 3410 – 3580 MHz, 100 Mhz duplex spacing.

Ireland

The band 3410 – 3600 MHz was opened for Narrowband services in slices of 2 x 25 MHz + 2 x 10 MHz, 100 MHz duplex spacing

Portugal

The Institute of Communications in Portugal (ICP) has allocated the band 3600-3800 MHz. No restriction for FDD and TDD are set. The bands allocated: 28 MHz, with 6 MHz guard bands. 100 MHz duplex spacing

UK

Part of a military radio location band lightly used in UK, totalling 2 x 17 MHz, nominally 3425 – 3442 MHz paired with 3475.688 to 3492.688 MHz, was licensed exclusively to Ionica for FWA in the early. There was nominally a “nation-wide” licence but there were four relatively small “no go” areas where military usage had priority use of the band.

A public consultation is now in progress, for the future use of the band, following Ionica’s bankruptcy.

A unique license was awarded to Tele 2 for Internet access in the band 3.8 – 4.2 GHz. Protection to satellite earth stations in that band is to be given.

US

An NPRM was published for the band 3650-3700 MHz, however there is no progress in the process as yet.

Standards

Coexistence standards for that band was published by ETSI, they include:

EN 301 021: P-MP systems, with TDMA access method.

EN 301 080: FDMA

EN 301 124: DS-CDMA

EN 301 253: FH-CDMA

EN 301 085: Antenna standard

DEN/TM-04080: Draft standard in progress for DS-CD/TDMA

EN 301 126-2: Conformance test for P-MP systems

EN 301-126-3: Conformance tests for antennas in that band.

Summary

