



August 29, 2011

Electronic Communications Committee
Frequency Management – Project Team FM 48
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Chairman FM PT 48

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cc.: Electronic Communications Committee – Frequency Management Working Group (WGFM)
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Chairman WGFM

Cc: European Commission
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European Commission
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Subject: Wi-Fi Alliance position on Direct Air to Ground Communications (DA2GC) in the 2.4 GHz band

Background on the Wi-Fi Alliance

www.wi-fi.org

The Wi-Fi Alliance is a global non-profit industry association of hundreds of leading companies devoted to the proliferation of Wi-Fi technology across devices and market segments. With technology development, market building, and regulatory programs, the Wi-Fi Alliance has enabled widespread adoption of Wi-Fi worldwide.

The Wi-Fi CERTIFIED™ program was launched in March 2000. It provides a widely-recognized designation of interoperability and quality and it helps to ensure that Wi-Fi enabled products deliver the best user experience. The Wi-Fi Alliance has completed more than 10,000 product certifications to date, encouraging the expanded use of Wi-Fi products and services in new and established markets. Wi-Fi Alliance estimates that more than one billion Wi-Fi products are in use today.

Introduction of the issue

The Wi-Fi Alliance is closely monitoring CEPT activities within the 2.4 GHz and 5 GHz bands. As such, the Wi-Fi Alliance became aware that the ECC WG FM had considered a document from Lufthansa Systems AG containing an alternative proposal (to using licensed spectrum) which proposes to use the 2.4 GHz and the 5.8 GHz unlicensed bands, with power levels much higher (approximately 8000 times current

levels)¹ than currently allowed in regulations, for deploying a European wide network of DA2GC base stations.

Summary of the Wi-Fi Alliance proposal

To maintain the balance in the intensively used 2.4 GHz band, the requirements such as maximum output power and the need for a polite sharing mechanism must be identical for all license exempt users of this band. No single license exempt application should be allowed to transmit at a higher power than others. DA2GC as presented in document INFO 009 (Wiesbach WGFM meeting) cannot be considered a short range device and therefore FM48 should focus on other solutions proposed within the PT and which are based on using licensed spectrum.

Challenges in the 2.4 GHz band

- **European Commission - TCAM**

In June 2008, the European Commission issued a position paper (TCAM(26)44) w.r.t. the usage of the 2.4 GHz band by license exempt applications. This position was endorsed by the EU member states during TCAM 26.

In summary, the European Commission re-stated that ALL devices have to implement adequate sharing techniques for complying with the existing regulations (Sub-Class 22 and EN 300 328). The European Commission also instructed ETSI to revise EN 300 328 to detail such sharing techniques.

- **ETSI - EN 300 328**

As a result of the decision of the EC which was endorsed by TCAM, ETSI started work on the revision of EN 300 328. It took ETSI almost 3 years to complete this work and the Public Enquiry for this revised standard has just started. This work was extremely difficult as some applications asked for an exemption from having to implement a polite sharing mechanism. However national administrations as well as the European Commission restated several times that no exemption (from having to implement a sharing mechanism) should be given to any application. Applications which did request an exemption were refused this exemption and were instructed to either comply with the sharing rules or to find solutions outside the 2.4 GHz band.

Problem Statement

The implementation of a mandatory sharing mechanism will prevent the DA2GC from operating as intended. In addition, using the existing power levels (100 mW EIRP if sharing is implemented) it will be simply impossible to deploy a European wide network of DA2GC base stations. Hence, it is expected that these systems may intend to use a higher output power (conducted + EIRP).

¹ FM48(11)014 – First considerations of bands for Direct Air to Ground Communication (DA2GC) proposed by WG FM#71 for sharing / compatibility studies.

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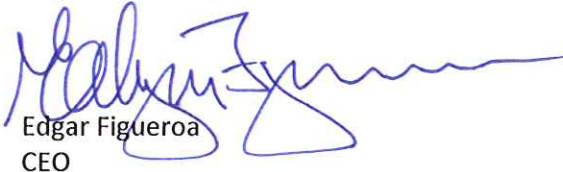
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A single DA2GC link at the proposed power levels will simultaneously disrupt many thousands of RLANs within the large footprint of the link. The current regulatory limit of 100 mW EIRP in EN 300 328 localizes the range of propagation so that the frequency may be reused simultaneously by many systems in a region. Allowing one type of license exempt user to transmit at a higher power and exempt them from a mandatory sharing mechanism will prevent outdoor operation of RLANs in Europe (e.g. Wi-Fi networks and other unlicensed technologies in widespread use today).

Proposed actions

Unless DA2GC can comply with existing regulations², including complying with the current power limits (EIRP) and the requirement to implement a sharing mechanism, these systems cannot be accommodated in the 2.4 GHz band.

Regards,



Edgar Figueroa
CEO

² Commission Decision 2006/771/EC amended by Commission Decision 2009/381/EC, on the harmonisation of the radio spectrum for use by short-range devices, and Annex 3 of ERC Recommendation 70-03.