Qualcomm Europe Inc.

ANACOM consultation on the proposed amendment of the Land Mobile Service (LMS) licences

Qualcomm Response

May 2010

Introduction

Qualcomm welcomes the opportunity to respond to the ANACOM consultation on the proposed amendment of the 900 and 1800 MHz frequency licenses for the provision of the Land Mobile Service (LMS).

3G is currently enabling the 'internet going mobile' evolution. 3G has experienced a strong worldwide growth over the past few years. 945 million customers (Dec. 09: +32% YoY) have adopted the technology, with 485 million WCDMA/UMTS subscribers (Dec. 09: +45% YoY). On average, around 23 million 3G subscribers were added every month in Q4 2009[1]. These numbers highlight the adoption of 3G as a mass market and reference technology for mobile broadband. 3G will continue to be the key technology for the global development of mobile broadband for the next 10 years, with around 89% of the mobile broadband subscriptions enabled by 3G by 2013.

Providing broadband access to rural areas is essential for the Portugal digital inclusiveness. Mobile broadband has also been recognised as a key factor to economic competitiveness and is crucial for a sustainable economic growth. Having 3G mobile broadband wireless operators with nationwide and improved indoor coverage, as a competitive alternative to wired providers, further enhances economic competitiveness and broadband development. Qualcomm believes that Portugal citizens' best interest lies in the availability of nationwide mobile broadband services and in the access to the most advanced mobile technologies.

[1] Source: WI, Q4 2009

UMTS900 is the key to achieve ubiquitous mobile broadband

UMTS/HSPA 900 provides the opportunity to expand 3G mobile broadband into the smaller towns, villages and rural areas across Portugal, in an economically efficient manner. UMTS900 also improves indoor coverage in all areas, including cities.

Several European countries have demonstrated the benefits of UMTS900 in terms of improvement of the coverage. In France, the Regulator (ARCEP) recently announced that UMTS900 would be used by Orange and SFR to expand their current 3G population coverage, respectively of 87% and 81 %, in order to meet their licences obligations of 98% population coverage by end 2011 (Orange and SFR) and 99,3% (SFR) by end 2013.[2]

Therefore, Qualcomm welcomes ANACOM's proposal to allow UMTS/HSPA in the 900MHz band as early as possible. Furthermore, Qualcomm notes that the citizen best interest resides solely on the availability of service on as large coverage as possible. As such, Qualcomm agrees that coverage objectives are the most significant requirement from the licence, in terms of benefits to the citizen.

UMTS900 provides mobile broadband today

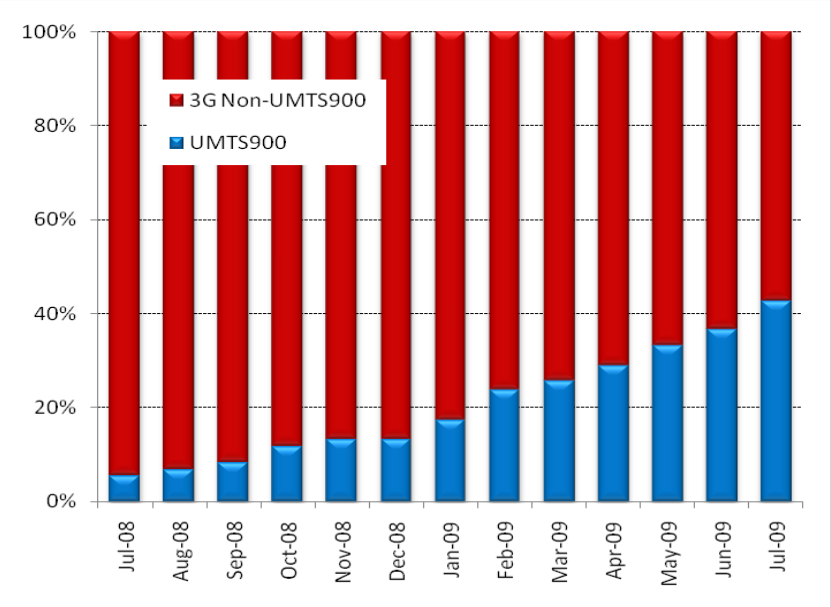
In October 2009, the Directive 2009/114/EC of the European Parliament and of the Council amended Directive 87/372/EEC and opened the 900 MHz band to UMTS and in the future to other terrestrial systems capable of providing electronic communications services that can coexist with GSM. Under this Directive, EU Member States shall make available the 900 MHz band for UMTS at the latest in May 2010. The amended GSM Directive has been further complemented by a European Commission Decision on the harmonization of the 900 MHz and 1800 MHz bands for terrestrial systems capable of providing pan-European electronic communications in the Community.

UMTS/HSPA900 enables operators to achieve large coverage 3G coverage in a cost effective and rapid manner. As stated previously, network coverage of 98% and 99.3% will be achieved in France in respectively 2011 and 2013.

Furthermore, the availability of UMTS900 devices has significantly improved over the past year. GSA's recent HSPA Devices Survey[3] (January, 2009) confirmed that 'UMTS900 is

[2] http://www.arcep.fr/
[3] www.gsacom.com

becoming standard for devices destined for Europe, MEA, and APAC markets with 258 products now launched'. In Europe, UMTS900 penetration is accelerating. In July 2009, UMTS900 handsets represented 40% of the total 3G handsets shipments in the EU 5 biggest markets (UK, France, Spain, Italy and Germany), up from 5% only, 12 months earlier[4].



Handsets shipments: Growth of UMTS900 across EU 5

Hence, ANACOM's proposal to allow UMTS/HSPA900 is likely to provide immediate benefits to the citizen, with access to near-ubiquitous coverage in a short time-frame.

Conclusion

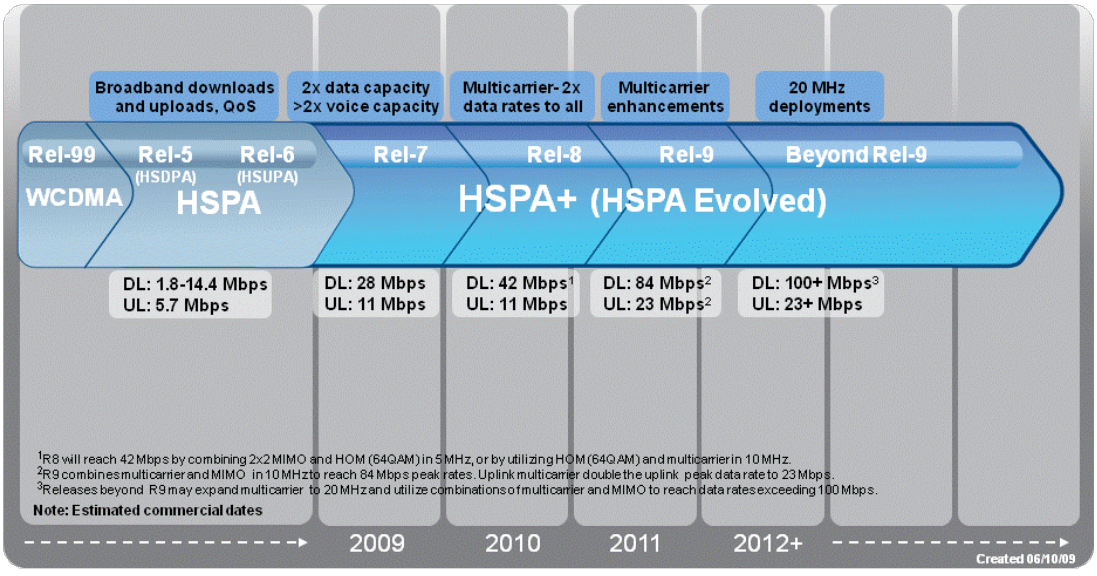
Portuguese citizen will benefit majorly from the introduction of UMTS/HSPA900 technology by gaining nationwide access to 3G mobile broadband services. Therefore, Qualcomm welcomes and strongly supports ANACOM's proposal to modify the rights to use frequencies in the bands of 900 MHz and 1800 MHz for the provision of the Land Mobile Service (LMS) in order to allow UMTS/HSPA900 without any further delays, and in the future other terrestrial systems capable of providing electronic communications services, in line with the Directive 2009/114/EC of the European Parliament and of the Council and the European Commission Decision on the harmonization of the 900 MHz and 1800 MHz bands for terrestrial systems capable of providing pan-European electronic communications.

[4] Source Gfk

ANNEX: Technology background

HSPA+ delivers next generation mobile broadband performance today

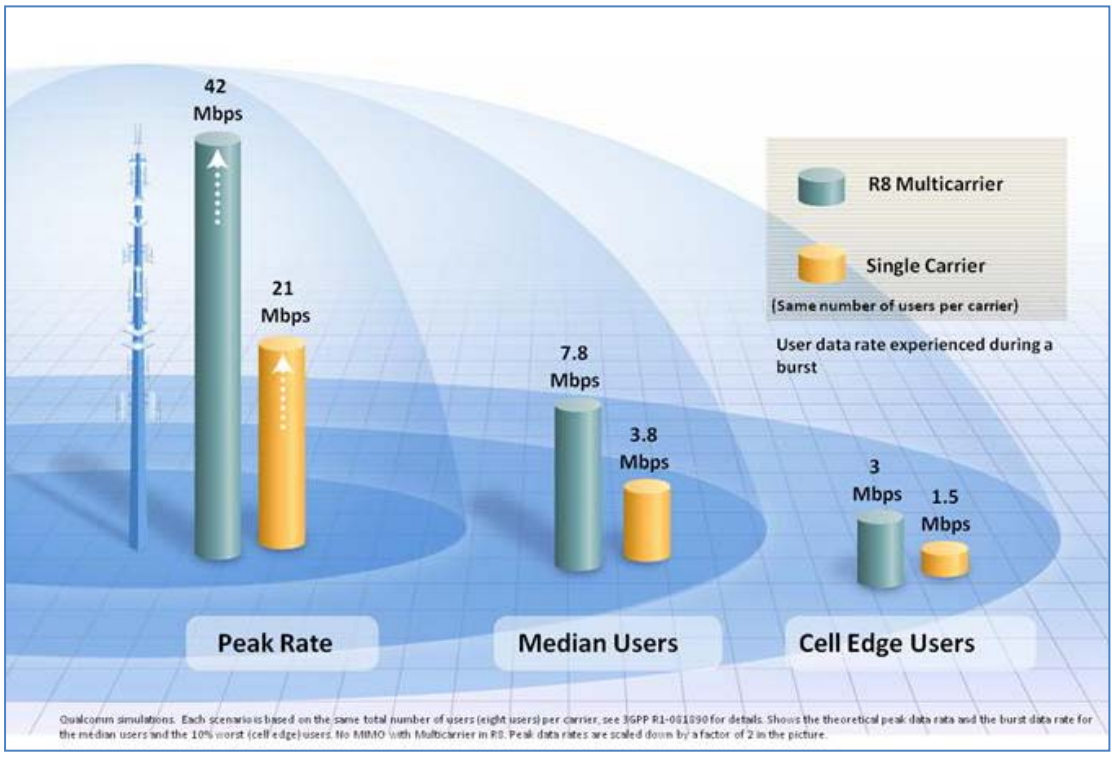
HSPA+, an evolution of UMTS, offers significantly improved data rates and features together with a breakthrough from the 2G background. HSPA+ commercial deployment started in 2009. In its Release 7, HSPA+ allows peak data rates up to 28 Mbps by implementing 64 QAM and MIMO. This evolution significantly improves the capacity of mobile networks (doubling the capacity of existing HSPA networks), hence enabling the mass-market offering of mobile data services (mobile Internet, Mobile 2.0, data connectivity through USB keys or built-in modules).



Some key HSPA+ Release 7 features have favoured the adoption of the technology by mobile operators:

- First and foremost, HSPA+ is readily implemented in existing network equipment and represents a cost efficient functional evolution of existing 3G networks. The handsets benefit from the backward compatibility of HSPA+ with previous HSPA versions.
- HSPA+ brings timely significant capacity improvement in a 5 MHz channel, as mobile data usage is exploding and operators now need multiple HSPA carriers in some dense urban areas.

Multi-carrier technology, i.e. the simultaneous multiplexing of data over adjacent 5MHz channels, allows HSPA+ in its Release 8 to improve and ensure the reliability of the data rates, under real load scenarios, experienced by the mobile user over the entire cell and especially at the cell edge.



Beyond Release 8, Release 9 further enhances HSPA+ capabilities, offering even higher data rates by combining multicarrier and MIMO in the Downlink and through multicarrier in the Uplink. Release 9 also introduces multicarrier across bands enabling an efficient use of all available frequency resources (e.g. 900 MHz and 2.1 GHz).

In its recent survey, the Global mobile Suppliers Associations (GSA) confirmed that 22% of HSPA network operators have committed to HSPA+ and that 32 HSPA+ devices are launched by 11 suppliers for peak data speeds up to 21, 28 and 42 Mbps (depending on the specific model) [5].

[5] GSA, 26th January 2010 (www.gsacom.com)