

Northrop Grumman Information Technology Response to the Ofcom Consultation on Spectrum planning for the London 2012 Olympic Games and Paralympic Games

February 22, 2008

"Question 22. Do any public support services have spectrum requirements that cannot be met through existing allocation and assignment processes?":

Northrop Grumman Information Technology ("Northrop Grumman") provides comment on this Ofcom consultation based upon a long history of delivering mission-critical, emergency and public safety systems in the United Kingdom and in the United States. We were the systems integration partner for BT, later Airwave Solutions Ltd, on the competitive design and build of the Airwave TETRA public safety communications system. In the U.S., we are now delivering mobile broadband solutions for dedicated public safety use for the City of New York, and have recently demonstrated this same technology in a National Policing Improvement Agency trial with the UK police.

As Ofcom recognizes, emergency and public-safety services and security (together referred to here as "public safety") are vital "support services" for the London 2012 Olympic Games and Paralympic Games and its many venues. As indicated by the NPIA, the Information Age Partnership and others, there is an emerging public safety need for fourth generation (4G) mobile broadband communications to support the integration and dissemination of mission-critical life safety and other information, and applications enabling situational awareness, incident management, and efficient resource deployment. Certainly by 2012 – and especially in the context of the Games – public safety's need for this will be acute. This growing need follows the worldwide trend of migration from narrowband to broadband mobile communications.

In the Independent Audit of Spectrum Holdings, Professor Martin Cave observed that the opportunity cost of spectrum requires that the public sector use it efficiently. A 4G mobile broadband communications system for public safety – which would support converged, highly reliable, mission-critical voice and data communications – ultimately results in the benefit of increased spectral efficiency, while decreasing cost through leveraging of the commercial wireless technology ecosystem.

To meet this important need and achieve these benefits, a significant amount of dedicated, suitable spectrum is necessary for public safety mobile broadband communications. A minimum of 10 MHz of spectrum nationwide, either in a single block or in a 5 MHz x 5 MHz pair, is necessary for an adequate network employing 4G technology. For suitable propagation such spectrum should preferably be below 1 GHz, and certainly below 3 GHz. Unfortunately in the UK thus far no spectrum has been allocated for this purpose.

Northrop Grumman agrees that it is sound policy for the Government to reallocate excess public sector spectrum to the marketplace. However, it must be cautious about taking this

too far. A cautionary tale of the U.S. experience underscores this point. Over the past two decades the U.S. government has been in the vanguard of unleashing spectrum to market forces including commercial auctions, to drive its use and unlock economic benefits. Over this period – from time to time on an ad hoc basis – Congress transferred significant portions of spectrum from the exclusive domain of the federal government to non-federal (private and some state and local government) users. But in this quest there was insufficient accounting for possible future needs, and as a result, there is no identifiable nationwide spectrum remaining in the federal domain suitable to implement a dedicated broadband wireless mobile network to meet defence and federal civilian agency homeland security and other needs. U.S. federal agencies are now coming to grips with the fact that many portions of spectrum suitable for dedicated broadband wireless use were released to commercial auction – without excluding any of it for this or any other future need – for lack of adequate foresight, planning and reserve.

Fortunately for the U.S., some of the spectrum to be recovered from television stations with completion of digital TV transition in 2009 was excluded from commercial auction, and this 24 MHz in the 700 MHz band has been allocated to state and local public safety use. Some of this is allocated for public safety broadband. But regrettably, there is not nearly enough spectrum allocated for broadband use to support the combined and growing federal, state and local public safety and security needs nationwide.

In the UK this situation can be avoided. There are several spectrum bands being used by public safety now that might with some modifications be redeployed for broadband mobile use, namely the 450 MHz, 1.7 GHz, and 2.3 GHz bands. Northrop Grumman urges Ofcom to retain those bands for public safety use with a view towards using at least part of these allocations more efficiently, productively and cost-effectively with next-generation broadband technologies.

Additionally there is opportunity to locate a public safety broadband allocation in the 872 MHz, 2010 MHz and 2.6 GHz bands slated for auction. In response to the Independent Audit of Spectrum Holdings, the Government stated that "if requirements cannot reasonably be satisfied through existing national allocations or through the market, and there is a demonstrated safety or security critical need...a non-market assignment will be considered through UKSSC" (ultimately this process flows though Ofcom). The needs for a wireless network delivering broadband mobility, high capacity, reliability, and scalability required to meet the real-time, fail-safe and "resilience" demands of a public safety are not being met in the UK or anywhere in the world – in the commercial wireless carrier marketplace. Accordingly, "market assignment" and resulting market forces cannot be relied upon to address this. Now, and most especially in the run up to the Games, as well as supporting routine operations beyond, Northrop Grumman respectfully submits that it would be inappropriate for these spectrum bands to be fully designated for auction prior to resolution of an appropriate nationwide allocation of spectrum suitable for a public safety mobile. mission critical-grade broadband network. Northrop Grumman urges Ofcom to plan for nonmarket assignment of suitable spectrum.

Northrop Grumman also urges Ofcom to understand the fundamental differences that exist in the business models of building and operating public safety and other Public Sector mission-critical and essential services wireless networks versus commercial wireless networks. Public safety and other mission-critical and essential services Public Sector networks require higher resiliency, higher reliability, and have a smaller – but indispensable – pool of users. Therefore, Ofcom should exclude such spectrum from incentive pricing, or least fairly value it for the unique nature of the spectrum set aside for public safety and other mission-critical and essential services uses in the Public Sector when planning any fees to the owners of such networks.