



5th July 2013

Dear Sirs,

TETRA and Critical Communications Association (TCCA) – response to Ofcom 700 MHz consultation

The consultation above has identified the following key questions to which we are responding. The TCCA will constrain its responses to be relevant for the Public Protection and Disaster Relief (PPDR) sector and its forthcoming use of 700 MHz spectrum in the UK.

Question 1: Have we correctly identified and characterised the potential costs set out above, and what other costs – if any – should be taken into account in our assessment?

The overall cost to society from not having an efficient and always-available public safety radio communication service in place taking into account both direct and indirect impacts on human lives, health, property etc would become huge. We invite Ofcom to consider the total socio-economic costs versus the corresponding savings achieved by enabling a state-of-the-art PPDR communication solution that can effectively support broadband data communication under any circumstances.

PPDR users have specific needs that ordinary commercial operators will never be able to meet under their business plans. Those needs cover specific functionalities and specific engineering implementations to ensure robustness, security and availability. We strongly believe that those needs are ultimately best met by implementing a dedicated radio network in a dedicated spectrum allocation, in line with the current PPDR narrow band implementations in the UK.

Should the PPDR agencies not be granted the opportunity for a dedicated and protected radio system, but are instead forced to share a mobile network with commercial subscribers, then compliance with the specific PPDR requirements must be assured by defining PPDR specific rules within any auction of the frequencies in question.

Referring to our response to Ofcom's UHF spectrum consultation in June 2012, the anticipated mobile service allocation in the 700 MHz band is likely to be the last good opportunity to meet the PPDR broadband spectrum needs in one single allocation. Due to the coverage limitations of higher frequency bands, it will not be possible to meet the PPDR specific functionality and availability needs at an affordable cost once all spectrum below 1 GHz has been auctioned off. This will lead to a situation where PPDR effectively cannot deliver the required service to society.

Question 2: What evidence, whether qualitative or quantitative, should we obtain and/or take into account in assessing each of these potential costs? Please identify any sources of specific evidence to which we should have regard.

Several research activities are under way right now. TCCA have commissioned London School of Economics and WIK-Consult to document the net cost savings. Those reports will be complete in September and we will be happy to forward the final version to Ofcom.

Early draft results from LSE include:

- £1.2-1.7bn annual socio economic benefit resulting from an estimated 10-14 per cent of current homicide, serious wounding and sexual assault crime costs benefitting from mobile broadband to derive a favourable outcome;¹
- If mobile broadband can be utilised to assist ambulance crews deliver faster and more direct responses to treat heart attack victims, for every 560 lives saved, an estimated £1bn socio economic benefit could result,² with the current target being 3,000 'extra lives' by the Ambulance Service.³
- If the current productivity increases of at least 10 per cent occurred across all UK Police Forces as observed by some UK Police Forces from the more enhanced use of mobile broadband,⁴ the efficiency benefits in policing could improve current intervention rates and result in an additional 350,000 interventions per annum that could deliver socio economic benefits of £1bn-4bn per annum depending on the mix of crimes intervened.

¹ Intervention estimates obtained from: Johur, J. (2013). Evaluating the Benefits of Mission-Critical Mobile Broadband to the UK Police Service. MBA Thesis. Henley Business School. Additional primary and secondary research undertaken.

² LSE Research.

³ Price, L. (2006). Treating the clock and not the patient: ambulance response times and risk. *Quality and Safety in Health Care*;15: pp127-130.

⁴ <http://www.straighttalkonline.com/cio-articles/going-mobile-wiltshire>

- If UK Traffic Police achieved comparable results as some US Highway Patrols in increasing their efficiency by reducing traffic stop times due to the enhanced and integrated use of mobile broadband,⁵ the potential socio economic benefits from averted fatalities and serious injuries could be between £0.5bn-5bn per annum.
- If the current efficiency benefits in undertaking some integrated operational duties between the frontline and back-office being obtained by some UK Police Forces⁶ were realised across the UK's Police Force, potential efficiency savings of over £150m per annum could be obtained.
- The socio economic cost of a 5 per cent degradation of service availability to emergency services in times of mission critical dependency, particularly for large scale emergencies, could result in a socio economic cost of over £5bn, whilst even a 0.5 per cent decrease can yield a socio economic cost of £0.5bn.⁷ Such a reduction in service could occur where spectrum is not available in a dedicated manner for public safety.

Furthermore we can make reference to

- *Cost analysis of crimes and disasters done in Germany: PPDR Spectrum Harmonisation in Germany, Europe and Globally*, Study for the German Federal Ministry of Economics and Technology (BMWV), WIK-Consult 2010.
- *Work done in Asia*: John Ure (2013), "Public Protection and Disaster Relief (PPDR) Services and Broadband in Asia and the Pacific: A Study of Value and Opportunity Cost in the Assignment of Radio Spectrum".
- *Work done by Henley Business School*: Evaluating the benefits of mission-critical mobile broadband to the UK Police Service. A MBA Dissertation, Jason J. Johur.

⁵ University of Cincinnati Policing Institute. Traffic Stop Data Analysis Study: Year 3 Final Report. November, 2009.

⁶ British APCO Journal. January 31, 2012.

⁷ Sampling estimates obtained from: Johur, J. (2013). Evaluating the Benefits of Mission-Critical Mobile Broadband to the UK Police Service. MBA Thesis. Henley Business School. Additional primary and secondary research undertaken.

Question 3: Have we correctly identified and characterised the potential benefits set out above, and what other benefits – if any – should be taken into account in our assessment?

The main benefits from efficient Emergency Services are realised by reduction of lives lost, health care costs, working days lost, reduction of cost of crime (including the costs of the legal system), lost taxes from lost lives, damage to property and so on. All need to be taken into account as benefits.

CEPT recently approved and published ECC Report 199 that concluded the need for broadband PPDR spectrum to be "in the range 2 x 10 MHz" for permanent data communication usage only, although some countries are demanding much more spectrum than this for their Emergency Services. A common opinion in the PPDR spectrum discussion has long been that PPDR spectrum should be identified below 1 GHz to enable good range per base station and therefore reasonable cost efficiency when investing public funds either via direct government investment or service charges to a contracted operator – and we share this view. This view is further confirmed in CEPT by decision of WG FM to continue broadband PPDR studies in a new ECC Report focusing on the 700 MHz and 400 MHz frequency ranges for the wide area network.

It is easy to see that the current utilisation of frequencies between 400 MHz and 1 GHz is already high and subject to ever increasing demand and pressure. As the need on average is as much as 2 x 10 MHz and knowing the approximate current occupancy of the UK 400 MHz PMR bands, the only remaining frequency range to solve that in UK seems to be within the current UHF TV broadcasting bands in the range 470 to 790 MHz. ECC is currently studying in a longer term perspective this entire band.

If the opportunity to address the 470 – 790 MHz frequencies is lost, the long term future of PPDR radio communication will be at real risk. More specifically, if the opportunity to address the 700 MHz frequencies in UK is lost, the future of PPDR radio communication is at risk at the date when the current Airwave service contracts expire.

Question 4: What evidence, whether qualitative or quantitative, should we obtain and/or take into account in assessing each of these potential benefits? Please identify any sources of specific evidence to which we should have regard.

Benefits of a dedicated network to society is only realised if PPDR forces can perform their necessary operations, also when commercial networks are overloaded, off the air or under cyber attack.

- ECC report 199: User requirements and spectrum needs for future European broadband PPDR systems (Wide Area Networks), May 2013

- Law Enforcement Working Party (LEWP) of the European Council differentiates normal communication with Mission Critical Communication, which enables 'Mission critical operations' for PPDR organisations that address situations where human life and goods (rescue operations, law enforcement) and other values for society are at risk, especially when time is a vital factor.
 - This means we define 'mission critical information' as the vital information for PPDR to succeed with the operation.
 - 'Mission critical communication solutions' therefore means that PPDR needs secure, reliable and available communication and as a consequence cannot afford the risk of having failures in their individual and group communication (e.g. voice and data or video transmissions).

- The view of today's PPDR network operators:

Senior representatives of PPDR operators from 13 European nations as well as representatives from a number of Ministries of Interior met for two days in Amsterdam in February 2013 to review the status of the efforts by the TCCA on this subject.

- The meeting noted the progress in 3GPP, where essential new functionality was added to the work program. The meeting pledged continued support for the work.
- The meeting was equally pleased with the progress in CEPT FM, where the FM 49's Report A was adopted for public consultation.
- The meeting reiterated – unanimously – the need to allocate sufficient harmonised spectrum for future PPDR services as this would provide their governments with most flexibility.

Question 8: Have we correctly identified the costs and benefits that could vary depending on the timing of release, and the impact of those factors? Are there other costs and benefits which would vary depending on the timing of release of the 700 MHz band which we should take into account?

An issue specific to the UK is the timing and expiry of the existing Airwave service contracts, which would have impact also on the narrowband PPDR radio service.

Question 8- 24:

No response.

Yours Faithfully,

A handwritten signature in black ink, appearing to read 'Phil Kidner', with a long horizontal flourish underneath.

Phil Kidner
Chief executive