



**JRC Response to the  
DCMS  
Review of the Electronic  
Communications  
Regulatory Framework**

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## Response

- JRC welcomes the opportunity to respond to this Review.
- JRC supports *'deployment of communication networks that meet the needs of users over the next decade enabling competitiveness and economic growth and delivering social benefits. The effectiveness of networks needs to be judged by the quality of experience enjoyed, or suffered, by the user, be they an individual consumer or [a] business'*.
  - Almost every service or product offered to the UK's citizens and consumers relies directly or indirectly on the stable provision of electricity and / or gas (gas is used to generate typically 50%<sup>1</sup> of the UK's electricity) by the UK's Critical Infrastructure Utility Operations. This will continue to require the increasing deployment of resilient private communication networks that will ultimately enable the suppliers to meet of the needs of citizens and consumers over the next decade.
- JRC agrees that *'every citizen [is offered] access to an acceptable level of connectivity'*.
  - Rather than simply offer more of the same, this should ensure that the currently available public mobile spectrum will be used more efficiently throughout a 24-hour period. This is preferable to simply increasing the amount of available public mobile radio spectrum, which denies its use by other users, and this resulting in it being unused efficiently except during the busiest hour(s) in a day.
- JRC agrees with *'the principle of subsidiarity and [to] ensure Member States' competency'*.
  - In particular, Ofcom should continue to manage all international co-ordination requirements relating to the UK's radio systems rather than parts of this process being handed over to the EC.

## JRC would like to take this opportunity to highlight the following:

- The stable supply of electricity relies increasingly on the systems that control the electricity grid. This includes resilient private wireless systems such as the 9.6 kbit/s in 12.5 kHz true<sup>2</sup> narrow band channels used for the UK-wide supervision and data control systems (SCADA).
- Please note that whilst these systems may be included under the general heading of Machine to Machine (M2M), they are more appropriately referred to as Resilient M2M (RM2M). Thereby highlighting that typical public mobile based M2M solutions are unlikely to be suitable. (Especially by their base stations not having up to 96-hour power backup.)

<sup>1</sup> Source: Grid Carbon

<sup>2</sup> Narrow band: 12.5 / 25 kHz channels. (Not to be confused with 200 kHz, so called, narrow band LTE public mobile systems.)

- Further, SCADA / RM2M systems operate to the remotest rural parts of the UK. This is far beyond the economic coverage areas of public mobile systems.
- The 2 x 1 MHz of 400 MHz UHF Band spectrum that was allocated by Ofcom's predecessor in 1985 for critical infrastructure utility operations is just enough spectrum to control the existing SCADA grid systems.
  - It should be noted that the UK's Critical Infrastructure Utility Operations have more than 30 years' experience of designing, installing, operating, and maintaining their own resilient private machine to machine (RM2M) systems using proven long-term technologies rather than technologies, such as public mobile GSM, that have a limited lifetime.
- The ever increasing roll-out of distributed generation is putting an increasing strain on keeping the existing grid stable. The critical infrastructure utilities therefore need to move to Smart Grid systems.
- The move to Smart Grids will require a significant increase in data rates, e.g. from 9.6 kbit/s to 64 / 100 kbit/s, and increased spectrum access. An increase to 2 x 3 MHz of 400 MHz Band private spectrum is predicted.
  - It should be noted that the average future private spectrum requirements for Critical Infrastructure Utility Operations Networks, including Smart Grids, is likely to be equivalent to ~1.5 percent of the 1,200 MHz of spectrum identified for public mobile / IMT systems.
  - It is hoped that this ~1.5% of alternative spectrum will not be seen as an excessive resource to keep the UK's lights on.

### **Joint Radio Company (JRC)**

JRC Ltd is a wholly owned joint venture between the UK electricity and gas industries specifically created to manage the radio spectrum allocations for these industries used to support operational, safety and emergency communications. JRC also represents gas and electricity interests to government on radio issues.

JRC manages blocks of VHF and UHF spectrum for Private Business Radio applications, telemetry & tele-control services and network operations. JRC created and manages a national cellular plan for co-ordinating frequency assignments for a number of large radio networks in the UK.

JRC also manages a significant number of 1.4 GHz links and is keen for their protection and the on-going access to this band.

The VHF and UHF frequency allocations managed by JRC support telecommunications networks to keep the electricity and gas industries in touch with their network assets and field engineers throughout the country. The networks provide comprehensive geographical coverage to support the operation, installation, maintenance and repair of plant in all weather conditions on a 24 hour / 365 days per year basis.

JRC's Scanning Telemetry Service is used by radio-based System Control and Data Acquisition (SCADA) networks, which control and monitor safety critical gas and electricity industry plant and equipment throughout the country. These networks provide resilient and reliable communications at all times to unmanned sites and plant in remote locations to maintain the integrity of the UK's energy generation, transmission and distribution.

JRC works with the Energy Networks Association's Future Energy Networks Groups assessing the ICT implications of Smart Networks, Smart Grids and Smart Meters.