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### ***Communications White Paper***

In December last year, the Government published its Communications White Paper proposing a radical restructuring of the regulatory regime for both content and delivery of broadcasting and telecommunications services. The new super regulator would be called OFCOM. The proposals and subsequent media coverage were dominated by broadcasting issues, but tucked away with the White Paper is the intention that responsibility for radio spectrum management would be subsumed by the new body.

The precise implications for utility communications is unclear, but the shift of emphasis away from telecom towards broadcasting is a cause of some concern. JRC has responded to the invitation to comment on the proposals. Embedded within the White Paper was the announcement of a Treasury led review of Spectrum management. JRC has contacted the Secretariat in order to submit evidence to this review.

#### ***LINKS:***

[www.communicationswhitepaper.gov.uk](http://www.communicationswhitepaper.gov.uk)

### ***TETRA radio safety***

The Home Office has instigated a review of TETRA technology with DERA (Defence Evaluation & Research Agency) and the NRPB (National Radiological Protection Board) in the wake of scares in the press over the near-16Hz pulse repetition rate of a TETRA transmission. It may be that they will decide to drop TETRA as a technology for the Public Safety Radio Communications Project (Airwave) but this possibility is remote. There are also anecdotal reports of interference to speed guns, breathalysers and security light infra-red sensors. There are reports that hospital equipment will be affected by TETRA signals and that because the radios are (like GSM) in continuous contact with the network, that Police will have to switch off their radios when in hospitals.

Time-Domain Multiple Access (TDMA) transmissions are pulsed, so have a high degree of amplitude modulation. This means that they are likely to cause

audio rectification effects on susceptible equipment. This effect is not new and is not just a TETRA effect. Remember the problems with hearing aids in the early days of GSM? The use of any transmitting equipment in hospitals is banned generally as their equipment is susceptible to interference. The problem with TETRA (and GSM, and any other networked radio system) is that the user is not in control of the transmitter and the radio could transmit at any time without the user knowing. Some hospitals insist on the ambulances switching off their analogue trunked or data despatch terminals as they enter the hospital grounds, for instance. BT Airwave have said that they are looking at a method of implementing a "Silent Monitor" button which a police officer may activate on entering a restricted area. This will disable the transmitter, most probably for a set period unless re-activated by the officer. Because of the potential for interference to protection switchgear in relay rooms, this facility may be necessary when using TETRA in power installations as well. The emergency button will override this inhibit mode.

Some studies have indicated that radio signals pulsed at or near 16Hz may affect the brain's chemistry, although there are no indications that TETRA signals (at about 18Hz) have any effect. Some of you may remember the Russian "Woodpecker" Over the Horizon Radar (OTHR) that affected short-wave communications in the 1980s. This pulsed OTHR was variously rumoured to be dangerous to health or even a mind-control experiment. On 18 March 2001, the Sunday Telegraph carried an article entitled "Revealed: purrs are the secret of cats' nine lives" in which purring – or pulses in the frequency range 20-50Hz strengthens human bones and allows them to grow. Experts are looking at ways of devising techniques in which purring can be used to treat or prevent osteoporosis. It must be spring!

#### ***LINKS:***

Home Office: <http://www.homeoffice.gov.uk/>

NRPB: <http://www.nrp.gov.uk/>

### ***Radio Equipment in vehicles***

Concern has recently re-surfaced concerning the installation and use of radio transmitting equipment in motor vehicles. The EU Automotive Directive would appear to prohibit the fitting of after-market radio transmission equipment unless specifically approved by the vehicle manufacturer. The situation has not been helped by some car manufacturers implying the use of hand-held 'phones in a car invalidates the car's type approval certification. There is also confusion about the difference between "CE" marking of equipment for the

office environment, and "E" marking to indicate suitability for the automotive environment. [The difference appears to be the spurious emissions limit.] A key date of 1 October 2002 is also approaching after which only "E" marked equipment can be installed in (new?) vehicles, which might have an adverse impact on the need to transfer installations between vehicles.

JRC is pursuing clarification of the various issues involved through DTI, RA and DETR. Links have also been established with the Home Office vehicle equipment experts who are facing similar difficulties.

### **Utilities Radio Conference**

Following requests for electronic copies of the presentations delivered at the Utilities Radio Conference UCC2000 in June last year at Hinckley, a CDROM has been produced. A copy is enclosed for those Newsletter recipients who attended this event.

Planning is now underway for the next event, UCC2002. The date has been changed to Tuesday 18 - Wednesday 19 June 2002 to move it away from the double Bank Holiday on 3 & 4 June 2002 to celebrate the Queen's Golden Jubilee. Potential sponsors and exhibitors are already approaching JRC, so if you want to guarantee your space, contact Anita now at [Anita.Lad@JRC.co.uk](mailto:Anita.Lad@JRC.co.uk)

### **MR2001 the wireless conference**

Because we only hold our own conference every two years, we would point out the MRUA Conference on 2-3 May. The venue has changed this year to the beautiful Missenden Abbey in Buckinghamshire. Key issues of importance to utilities will be coverage of digital radio technologies Tetrapol and DIIS (Digital Interchange of Information and Signalling).

Uniquely, this conference also covers the requirements of the large user sector that prefer or demand firm control of network access, defined user groups, service quality and operating cost. Such features may not be available or appropriate from public networks and therefore wireless infrastructure is often self-provided. The emergency services and utilities are classic examples.

As the profitability of consumer connections falls and churn rises, GSM network operators are promoting closed user group facilities and Virtual Private Networks to improve revenues and strengthen customer loyalty. Witness the trials of GSM-Pro at Orange and the managed, enterprise-wide data/voice facilities offered by several GSM operators. As Tetra IP and GPRS packet data become established internationally; as 3G draws closer to reality and as new and exciting ETSI specifications such as DIIS make rapid progress, provision of some form of "private" services, whether as applications on public networks or through self-provision of infrastructure, is seeing a strong revival, especially for the professional user. This year's programme will certainly examine these developments.

#### **LINKS:**

<http://www.landmobile.co.uk/>

### **Potential Satellite Interference**

The Radiocommunications Agency work assessing the potential for interference from the mobile satellite operator Orbcomm into JRC members' PMR systems is drawing to a conclusion. RA's report confirms that the satellite service will interfere with JRC members' PMR systems, but contests the practical impact that it will have.

The satellite operator, still in "Chapter 11" protection from its creditors, recently put itself up for sale by auction. However, the successful bidder, ACT (a consortium which includes Orbcomm's European agent SATCOM) is reported to have foundered due to lack of funds.

#### **LINKS:**

<http://www.JRC.co.uk/>

(Follow "Little LEO" link).

<http://www.nytimes.com/2001/04/02/technology/02BIRD.html?ex=987214518&ei=1&en=2898c53ec88caf60>

(Orbcomm Sale Article)

### **UHF Band Realignment**

Work continues with an RA-led Group on a revised band plan to facilitate the replanning of the UHF band 450-470 MHz to conform with the harmonised European Band plan, and to facilitate the introduction of private Tetra in the UK. This band is used nation-wide by utilities for high integrity telemetry and telecontrol links and PMR in urban areas. The Group is working towards the publication of a proposed new band plan towards the end of 2001, and will be hosting an special seminar on the subject in the autumn. JRC has recently been advised by a major manufacturer that they have commenced modification of their Tetra products to operate in the band 450-470 MHz. These two activities should accelerate the availability of Tetra for private users in the UK.



### **Wok's that?**

Nothing to do with satellite interference, but everything to do with high integrity telemetry and telecontrol: Transco's new 7.5m dish for communication between their National Transmission Network Control Centre and telemetry outstations for improved control of the UK gas pipeline system using VSATs (Very Small Aperture Terminals).