Commission for
Communications Regulation

Publication of Non-confidential Submissions in Response to Consultation 11/94

The Introduction of a Licensing Framework for VHF and UHF Telemetry Systems, Changes to Current Frequency Assignments and Spectrum Release Proposals

Reference: ComReg 13/13s

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1 Introduction

1 In Consultation 11/94[1], the Commission for Communications Regulation ("ComReg") proposed to introduce a new licensing scheme for scanning telemetry and telecontrol systems in the VHF and UHF frequency bands.

2 Eleven submissions were received from interested parties in response to Consultation 11/94. The respondents were as follows:

- Cork County Council
- Cully Automation Ltd.
- Dublin City Council
- EMR Integrated Solutions
- ESB Networks Ltd.
- Grontmij Ltd.
- Joint Radio Company Ltd.
- Meath County Council
- National Directorate of Fire and Emergency Management
- Telecommunications Association of the UK Water Industry (*TAUWI*)
- Westmeath County Council

3 This document contains non-confidential information submitted by the above respondents. ComReg's response to the issues raised by interested parties and further consultation on the issue is available in document 13/13.

[1] *Introduction of a Licensing Framework for VHF and UHF Telemetry Systems, Changes to Current Frequency Assignments and Spectrum Release Proposals.* ComReg Doc No 11/94

2 Cork County Council

List of Questions

Q. 1. Do you agree that the four proposed licence types (on-site, wide area, local area and national) and their proposed features are sufficient to cater for all ECN telemetry system requirements? Please give reasons in your response.

Agree.

Q. 2. Do you agree with ComReg's proposal to limit the number of national telemetry licences that may be held by a single licensee to a maximum of two? Please give reasons in your response.

Yes. Will eliminate monopololies .

Q. 3. Do you agree with ComReg's proposal to reallocate spectrum for use specifically by fixed telemetry services?

Yes. It would eliminate interference.

Q. 4. Are there any alternative uses of the spectrum bands listed in Table 2, which could not be accommodated elsewhere in the 163 – 174 MHz and 450 – 470 MHz bands? Please give reasons with your answer.

No Comment

Q. 5. In addition to those already listed, are there any other factors that ComReg should consider when deciding on the amount of spectrum to reallocate for use by fixed telemetry services? Please give reasons with your answer.

Due to the requirements of the EPA on water quality under the Drinking Water Directive and wastewater operations under the water framework Directive a dramatic increase in the use of SCADA has been experienced. Sufficient bandwidth needs to be provided to accommodate all local authority needs.

Q. 6. Do you agree with the proposed national cellular plan for frequency reuse? Please give reasons with your answer.

Page 19 & page 33 are inconsistent on cell size and the 150 km separation is not maintained by the proposal as set out on page 33. Adequate distance to avoid interference must be maintained.

Q. 7. Are there any other factors that ComReg should consider with regard to the migration of existing telemetry systems or existing Community Repeaters as detailed above? Please give reasons in your response.

Cost implications for existing consumers.

Q. 8. Do you agree with ComReg's proposals regarding the migration of existing ECN telemetry systems?

No Comment.

Q. 9. Do you agree with ComReg's draft Regulatory Impact Assessment? Please give reasons in your response.

A robust enforcement procedure needs to be implemented to avoid interference.

Q. 10. Are there any other factors that ComReg should consider when compiling a Regulatory Impact Assessment on the migration of existing users? Please give reasons in your response.

No comment.

Q. 11. Do you agree with ComReg's proposal to set the duration of on-site, local area and wide-area telemetry licences to five years and national telemetry licences to ten years? Please give reasons in your response.

No we have severe reservations about the length of the licence as very substantial investments are required for the SCADA networks required by the EPA and a 20 year licence period would be more appropriate.

Q. 12. Are there any other factors that ComReg should consider when deciding on the licence conditions that apply to future telemetry licences? Please give reasons in your response.

No comment.

Q. 13. Is ComReg's proposal to adjust the level of fees by the Consumer Price Index (CPI) adequate to ensure the ongoing efficient use of spectrum? Please give reasons in your response.

Yes.

Q. 14. Are there any other factors that ComReg should consider when setting fees for telemetry licences to ensure that its Statutory Objectives are met? Please explain your response in detail.

Fees should be cost neutral .

Q. 15. Do you agree with ComReg's view that a *first-come first-served* award process is the most efficient mechanism for assigning on-site, local-area, wide-area and national telemetry licences? Please give reasons in your response.

No. All users deserving of a licence should be allowed access to one. Geographically located users i.e. local authorities should be given preference on those frequencies that will best accommodate their region within the cellular frequency re-use pattern. It will be essential that the public good and compliance with requirements of statutory bodies such as the EPA take precedence over commercial activity.

Additional Comments.

Cork County Council is using the following frequencies,

[Redacted]

Details of North & West where low power systems are in place will be forwarded on Monday.

"irish Water" may have a considerable impact on the network needs.

3 Cully Automation Ltd.

List of Questions

Q. 1. Do you agree that the four proposed licence types (on-site, wide area, local area and national) and their proposed features are sufficient to cater for all ECN telemetry system requirements? Please give reasons in your response.

We agree with 2 no. of the of the proposed licenced types but given there is another area in spectrum available to on site short range devices why would you allocate more spectrum to similar users?

If most current users of the SRD spectrum are moved into a wide area licenced band there will be plenty of free to use spectrum for those who wish to maintain licence free systems.

Also given the cost difference between local & wide area networks and the likelihood that repeaters will be required at some stage it is unlikely anyone would make use of the local area licence.

Q. 2. Do you agree with ComReg's proposal to limit the number of national telemetry licences that may be held by a single licensee to a maximum of two? Please give reasons in your response.

Yes. There are a minimal amount of utilities who require a national radio licence.

Q. 3. Do you agree with ComReg's proposal to reallocate spectrum for use specifically by fixed telemetry services?

Yes. It would seem a logical solution to separate mobile users and correctly regulate the fixed radio telemetry users.

Q. 4. Are there any alternative uses of the spectrum bands listed in Table 2, which could not be accommodated elsewhere in the 163 – 174 MHz and 450 – 470 MHz bands? Please give reasons with your answer.

No Comment

Q. 5. In addition to those already listed, are there any other factors that ComReg should consider when deciding on the amount of spectrum to reallocate for use by fixed telemetry services? Please give reasons with your answer.

Is there enough bandwidth allocated?
In the water industry alone there are 34 local authorities operating independently, each with multiples of radio applications from multiples of vendors. In order to be compliant they will each require at least one licence with many larger RF users requiring multiples.

Each private firm operating in this industry will also require single/multiple licences.

Q. 6. Do you agree with the proposed national cellular plan for frequency reuse? Please give reasons with your answer.

Yes. For fixed geographical frequency owners but If the licencing structure is geographically re-distributed how can a private contractor operate a single licence in multiple locations?

Is the licencing structure aimed solely at state/semi state bodies? If so will private companies be required to re-use their existing business radio licences?

Q. 7. Are there any other factors that ComReg should consider with regard to the migration of existing telemetry systems or existing Community Repeaters as detailed above? Please give reasons in your response.

The replacement/upgrade costs for some equipment may be prohibitive in the short term. What duration will be allowed to change frequencies?

Q. 8. Do you agree with ComReg's proposals regarding the migration of existing ECN telemetry systems?

Yes. It will be reasonably straightforward given time to move their equipment to other areas of spectrum.

Q. 9. Do you agree with ComReg's draft Regulatory Impact Assessment? Please give reasons in your response.

In principle yes but more discussion is required to accommodate all current users.

Also there is no mention of policing of the spectrum. Who is responsible for regulation, policing?

Q. 10. Are there any other factors that ComReg should consider when compiling a Regulatory Impact Assessment on the migration of existing users? Please give reasons in your response.

No. Migration is necessary.

Q. 11. Do you agree with ComReg's proposal to set the duration of on-site, local area and wide-area telemetry licences to five years and national telemetry licences to ten years? Please give reasons in your response.

Yes, but given the investment required to move existing hardware into different licenced bands all licences should be have gauranteed renewal if required for subsequent terms.

Q. 12. Are there any other factors that ComReg should consider when deciding on the licence conditions that apply to future telemetry licences? Please give reasons in your response.

Will Comreg evaluate/recommend/advise on hardware brands and/or types to be used in the spectrum?

Q. 13. Is ComReg's proposal to adjust the level of fees by the Consumer Price Index (CPI) adequate to ensure the ongoing efficient use of spectrum? Please give reasons in your response.

Yes this is adequate.

Q. 14. Are there any other factors that ComReg should consider when setting fees for telemetry licences to ensure that its Statutory Objectives are met? Please explain your response in detail.

Fees are set per licence. Is there a max no. of licences any one user can purchase?

Q. 15. Do you agree with ComReg's view that a *first-come first-served* award process is the most efficient mechanism for assigning on-site, local-area, wide-area and national telemetry licences? Please give reasons in your response.

No. All users deserving of a licence must be allowed access to one. Geographically located users i.e. local authorities should be given preference on those frequencies that will best accommodate their region within the cellular frequency re-use pattern.

Additional Queries :

On-site licence.

How many channels are to be allocated? In industrial areas there could be numerous users (food – paper – oil and petrochem – water & wastewater – etc) all within range of a 1 watt transmitter on a 10 metre pole.

General.

1) It is unclear if Comreg are allocating ~70 frequencies to local & wide area networks or whether the ~70 no. mentioned includes the national licence. We would like to see a table illustrating each duplex freq channel for use in each of the National & Wide Area Networks.

2) The frequency split 455 to 469 MHz it too wide to be done on most installed radios in the water industry. General max is 10MHz.

3) We presumed that unpaired operation(half duplex) is permitted in the bands/frequencies?

4) The third note below table 2 page 17 refers to harmonising with UK. This is only true for the National licenced frequencies 457.5-458.475 and 463 – 463.975. It should also be noted that some years ago there were issues in the south east of England where under some weather conditions they were getting interference from mainland Europe – and vice versa. This was because the hilltop scanners were on the same frequencies on both sides of the channel. There was a proposal in the UK to reverse the situation so the scanners one side of the channel were on the frequencies of the outstations on the other side of the channel.

   Are Comreg talking to Ofcom to address the possibility of interference between UK and Ireland?

5) There is virtually no reference to antennas – We find this surprising?

6) If there are ~70 licences for local & wide area networks it is not clear if Comreg plan to allow re-use by cellular plan.

7) Will any of the existing TPBR licences be re-issued? If so which ones?

8) If TPBR licences are not to be renewed how will private contractors operate licensed radios in multiple sites?

9) Will there be further consultation before a final decision is made on the telemetry Frequencies?

10) Have Comreg considered the possible impact of "Irish Water" on the telemetry band? i.e. could this new body be a national user as opposed to 34 independent wide area network users?

4 Dublin City Council

Q. 2. Do you agree with ComReg's proposal to limit the number of national telemetry licences that may be held by a single licensee to a maximum of two? Please give reasons in your response.

We would be concerned that the number of national licences is limited to 6. Given that a number of national bodies that might be interested in a licence would include ESB, Airtricity, OPW, EPA, Bord na Mona, The list does not include any other body that might request a national licence. This would result in only one licence remaining available for a National Water Utility.

Q. 11. Do you agree with ComReg's proposal to set the duration of on-site, local area and wide-area telemetry licences to five years and national telemetry licences to ten years? Please give reasons in your response.

The Dublin Region Telemetry System provides telemetry services to Dublin City Council, Dun Laoghaire Rathdown Co. Co., Fingal Co. Co., Kildare Co. Co., South Dublin Co. co. and Wicklow Co. Co.

We view the limitation of the licence period to 5 and 10 years followed by a first come first served renewal process as a disincentive to investing widely in radio as a communications media. A preferable route for renewal would be the existing licence holder would have first refusal subject to compliance with the relevant conditions of the licence. This is because the nature of regional or country-wide Telemetry Systems is that they should exist in perpetuity. The Dublin Region Telemetry System has been in existence for over 20 years now, and having to move frequencies every five or ten years would involve a large expense and the possibility that a new frequency might not be attained at all, effectively shutting down a whole system that is providing a crucial service is unthinkable. Regional Telemetry Systems in the UK have been in existence for more than 30 years.

Q. 15. Do you agree with ComReg's view that a *first-come first-served* award process is the most efficient mechanism for assigning on-site, local-area, wide-area and national telemetry licences? Please give reasons in your response

We do not agree with the *first-come first-served* award process. We believe it will discourage investment in radio systems if one cannot have confidence in renewing the licence after expiry. This could result in an expensive replacement of any network if one was unsuccessful in retaining the licence or failing to get a licence at all. This is because the nature of regional or country-wide Telemetry Systems is that they should exist in perpetuity. The Dublin Region Telemetry System has been in existence for over 20 years now, and the possibility that a new frequency might not be attained at all, effectively shutting down a whole system that is providing a crucial service is unthinkable. Regional Telemetry Systems in the UK have been in existence for more than 30 years.

Regards

William Dempsey.
Dublin Region Telemetry Office,
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5 EMR Integrated Solutions

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25th January 2012

Ms. Sinead Devey
Commission for Communications Regulation
Irish Life Centre
Abbey Street
Dublin 1
Ireland

Ref: Submission Re ComReg 11/94

Dear Sinead,
I refer to your recent invitation for submissions in respect of the above and am pleased to submit our observations.

I trust this is in order and would welcome any comments.

Yours sincerely,

Mark Quinn

Consultation Questions

List of Questions

Q. 1. Do you agree that the four proposed licence types (on-site, wide area, local area and national) and their proposed features are sufficient to cater for all ECN telemetry system requirements?

A. 1. While I don't fundamentally disagree with the number of licences I believe that the structure of the national licences seriously militates against organisations that have a requirement for low capacity national or wide area coverage extending beyond the proposed 25k cell size, as is the case in much of the countywide/regional networks operating in the water industry today.

Q. 2. Do you agree with ComReg's proposal to limit the number of national telemetry licences that may be held by a single licensee to a maximum of two?

A. 2 It is not unreasonable to impose such a limit although it is difficult to see a situation where a single national utility could not operate quite effectively with a single national license, unless it is envisaged that this licensing arrangement will be applied to smart metering/smart grid. Should these fall under the same telemetry licensing arrangement they have the capacity to consume significant bandwidth which is unlikely to be met by two licenses.

Q. 3. Do you agree with ComReg's proposal to reallocate spectrum for use specifically by fixed telemetry services?

A. 3.The concept of providing spectrum for telemetry applications is logical but should not preclude the use of national TPBR channels which have been advanced by ComReg and procured by the licensee on the basis that they would be used for telemetry applications. These licenses pose few if any of the problems associated with shared telemetry/voice channels and are managed by the licence holder to ensure optimum usage and minimal interference.

Q. 4. Are there any alternative uses of the spectrum bands listed in Table 2, which could not be accommodated elsewhere in the 163 – 174 MHz and 450 – 470 MHz bands? Please give reasons with your answer.

A. 4. Not that I'm aware of.

Q. 5. In addition to those already listed, are there any other factors that ComReg should consider when deciding on the amount of spectrum to reallocate for use by fixed telemetry services?

A. 5. The allocation of spectrum should take account of and encourage the use of spectrally efficient radio telemetry technologies. To focus solely on power levels, antenna type and cell coverage ignores the reality that the radio technology and the application will do more to impact on the channel occupancy than any other factor. Some applications require radios to report very frequently in certain periods (1 per 30sec), while others will report less frequently (1 per 15 mins). For example, a single water industry telemetry channel could accommodate 100+ radios in normal operating mode if the radios have the appropriate performance characteristics and the network is optimised for the application. A network based on slower radio technologies and

suboptimal data acquisition algorithms might accommodate fewer than 25 radios if it is to achieve the same data resolution.
However, in the case of a wastewater application, the number of radios on a network might need to be fewer than 25 is it is to achieve the required level of data integrity in times of high rainfall etc. ComReg will need to reflect these realities in the licensing scheme and should consider implementing a regime which promotes the use of the most efficient technologies.

Q. 6. Do you agree with the proposed national cellular plan for frequency reuse?

A. 6.The theory is fine but the reality on the ground is that the single largest user group, the water industry, does not neatly fit into the 25km cell size model and the limitations imposed in respect of interconnection of cells would make effective network operation difficult. Many individual counties operate today on the basis of a single radio channel for water and a second for wastewater. Under the new model these counties will typically require 5+ cells, each with two channels, together with secondary bearers to link the hub sites back to the central. This will significantly increase the cost of operating the networks.

Q. 7. Are there any other factors that ComReg should consider with regard to the migration of existing telemetry systems or existing Community Repeaters as detailed above?

A. 7. No, the level of usage on the Com Reps is so low as to make the task of moving relatively easy.

Q. 8. Do you agree with ComReg's proposals regarding the migration of existing ECN telemetry systems?

A. 8. In the water industry, the migration of existing telemetry systems cannot be undertaken in the manner envisaged because of the diversity of equipment currently in use in each area. In a single 25km cell there can be 4 or more manufacturers' equipment installed (Warwick Wireless, Motorola, RDT, Churchill, RadioTech, RFData Tech, Communique, GE-MDS etc) on a single water authority network, each currently operating on a different radio channel. Each is ignorant as to the existence of the other; each uses its own proprietary communications protocol; no overarching network management tool exists. Coexistence of the existing equipment on a single channel is not an option. Where a multiplicity of channels is being replaced by a single or limited number of channels, licensees will have to migrate to a common radio platform to provide the management required to allow efficient use of the spectrum within their cell. To allow a collection of different manufacturers equipment exist in a single cell on a single channel will result in degraded performance, higher error rates, increased retries and ultimately lead to network failure.

Q. 9. Do you agree with ComReg's draft Regulatory Impact Assessment?

A. 9. The impact on holders of TPBR licenses has not been addressed. These licenses have been the only legitimate way to license telemetry networks where multipoint to multipoint networking was required. Any proposed change which adversely affects these TPBR license holders needs to be clearly flagged before any change in the telemetry licensing regime is implemented. It would be unconscionable if the only people

significantly disadvantaged by a change were to be the only players in the market who have consistently promoted licensed telemetry networks.

Q. 10. Are there any other factors that ComReg should consider when compiling a Regulatory Impact Assessment on the migration of existing users? Please give reasons in your response.

A. 10. Intentionally left blank

Q. 11. Do you agree with ComReg's proposal to set the duration of on-site, local area and wide-area telemetry licences to five years and national telemetry licences to ten years?

A. 11. No, I disagree. By their nature the wide area licenses will be more attractive to the utilities where time horizons and investment strategy are measured in decades while commercial and industrial users think of return on investment in terms of 2 to 5 years. The 25km license is more likely to be sought by utility customers and I would argue their investment decisions are based on a minimum of a 10 year product life. To restrict the license to 5 years and provide no certainty regarding renewal will make investment in radio networks unattractive.

Q. 12. Are there any other factors that ComReg should consider when deciding on the licence conditions that apply to future telemetry licences?

A. 12. The license conditions for wide area networks should contain minimum performance criteria (data speed, response times etc), device management capability (SNMP or similar) and a facility to interconnect equipment in contiguous cells in an approved manner. This would allow ComReg collect data and conduct meaningful analysis of actual network usage and would ensure that best practice was being followed by system integrators.

Q. 13. Is ComReg's proposal to adjust the level of fees by the Consumer Price Index (CPI) adequate to ensure the ongoing efficient use of spectrum? Please give reasons in your response.

A. 13. Not unreasonable.

Q. 14. Are there any other factors that ComReg should consider when setting fees for telemetry licences to ensure that its Statutory Objectives are met? Please explain your response in detail.

A. 14. It may be advisable to implement a pricing model that encourages the use of spectrally efficient equipment based on an application type.

Q. 15. Do you agree with ComReg's view that a *first-come first-served* award process is the most efficient mechanism for assigning on-site, local-area, wide-area and national telemetry licences?

A. 15. Not unreasonable.

6 ESB Networks Ltd.

The Introduction of a Licensing Framework for VHF and UHF Telemetry Systems, Changes to Current Frequency Assignments and Spectrum Release Proposals

(Document Number 11/94)

ESB Networks (ESBN) Response

Status: **Approved**

Date: **27/Jan/2012**

Introduction

ESB Networks (ESBN) welcomes this opportunity to respond to ComReg's consultation paper on VHF and UHF Telemetry and to provide an input into a new licence regime for telemetry radio. ESBN notes ComReg's wish to facilitate new services, to encourage efficiency in the use of spectrum and to simplify the administration of licensing where this is appropriate.

Summary

ESBN supports ComReg's proposed licensing regime for **V**HF and UHF Telemetry Systems.

We have replied in detail to the questions from the consultation. Here we highlight a number of the important points we have made:

- ESBN have a current requirement for two national licences as described in the consultation. However, Smart Grid developments will require UHF spectrum and in this regard the limitation on the number of national licences would pose a significant problem.

- The frequency plan described in the paper sets out that one duplex channel is used per national licence block, per cell. ESBN understands and agrees with the principle, however to implement maximum spectrum efficiency, an adaptable approach to cell planning should be adopted which will also support cross border co-ordination.

Responses on questions posed in consultation document

Q. 1. Do you agree that the four proposed licence types (on-site, wide area, local area and national) and their proposed features are sufficient to cater for all ECN telemetry system requirements? Please give reasons in your response.

ESBN agree with this proposal.

The four proposed licence types and their features provide a good range of licences for users. In the context of other answers below where ESBN is putting the position that more spectrum (to that provided for in this consultation) will be required for telemetry in the medium term, further types of national licences (not only blocks of 12 duplex channels) could be added.

ESBN would ask ComReg to consider that the use of repeater as defined in Annex E (what we term an "on-frequency" repeater[1]) would add significantly to equipment cost. For the case of rural extension-of-range applications, provided reasonable RF planning criteria of non-interference are satisfied, could ComReg permit this use of a much simpler repeater using a second channel?

Q. 2. Do you agree with ComReg's proposal to limit the number of national telemetry licences that may be held by a single licensee to a maximum of two? Please give reasons in your response.

ESBN have some concerns on this limitation.

ESBN has an increasing requirement into the future for operational data links to remote end points, particularly as part of Smart Grid developments. The limitation of two national licences (2 x 300 kHz of spectrum) would seriously constrain the use of radio for these services. The result of this would lead to reduced functionality in the electricity network.

It is possible that ESBN could, in the short term, satisfy our spectrum needs for telemetry services by supplementing national licences with wide and local area licences. This solution would impose an unnecessary extra administrative burden on both ComReg and on ESBN.

Q. 3. Do you agree with ComReg's proposal to reallocate spectrum for use specifically by fixed telemetry services? Please give reasons with your answer.

ESBN agree with this proposal.

This proposal will reduce interference on telemetry networks and enable networks to be planned with greater ease.

[1] An "on-frequency" repeater fitting the definition of a Repeater as given in Annex E is an especially complex piece of radio equipment and is much more expensive compared to standard radio equipment

Q. 4. Are there any alternative uses of the spectrum bands listed in Table 2, which could not be accommodated elsewhere in the 163 – 174 MHz and 450 – 470 MHz bands? Please give reasons with your answer.

No, ESBN does not believe that there are alternative uses for this spectrum.

As stated in the response on question 2, ESBN considers that there is a strong likelihood for the need for additional telemetry spectrum in the medium term due to Smart Grid requirements, to that detailed in Table 2. This is due to ESBN's projections on the need for spectrum for telemetry services, but will also depend on the demands from other users.

Q. 5. In addition to those already listed, are there any other factors that ComReg should consider when deciding on the amount of spectrum to reallocate for use by fixed telemetry services? Please give reasons with your answer.

Yes, consideration should be given to the need for spectrum to support Critical National Infrastructure.

Electrical utilities are a particular case. Due to the policy goals of carbon reduction and increased use of renewable energy, there is an increasing requirement to serve more end points and provide faster data rates to implement what is called a "Smart Network". This will require an increase in the amount of spectrum available for these services which are linked to the electricity grid. For this consideration needs to be given to have a process in place to increase further the amount of spectrum that is available for narrow and wide band data networks to enable Smart Networks. Article 8 of the European *Radio Spectrum Policy Programme* (RSPP), states that the European Commission, in cooperation with the Member States, shall consider making spectrum available for wireless technologies with a potential for improving energy saving, including smart energy grids and smart metering systems. ESBN's use of telemetry systems in the operation of the electricity network in Ireland is part of the smart energy grid.

If an adequate amount of spectrum is not available for these grid related services this would lead to reduced functionality in the electricity network.

Q. 6. Do you agree with the proposed national cellular plan for frequency reuse? Please give reasons with your answer.

ESBN agree with this proposal. It offers an efficient way to implement a national telemetry system, and it will ease the co-ordination of system across the border to Northern Ireland and along the eastern seaboard.

However, as pointed out in the general comments above, ESBN believes that an amount of flexibility is needed in how channels can be used in the cellular plan in order to use the national licence spectrum efficiently. Without this flexibility ESBN will need, from the outset, more than 2 national licence blocks in order to provide the service planned to be carried by telemetry radio in UHF band.

Q. 7. Are there any other factors that ComReg should consider with regard to the migration of existing telemetry systems or existing Community Repeaters as detailed above? Please give reasons in your response.

Yes, ComReg should make provision to allow national licence blocks to be partially used during the migration period.

ComReg has set out the correct factors on this migration. ESBN agrees with the statement that the relocation period may need to be shortened depending on circumstances. ESBN's position is that the migration of existing services should not prevent access to a national licence spectrum block in the interim. Provided the new licensee respects the use of the existing user(s) for the agreed migration period, the new licensee should have immediate access to the national block - on a non-interference basis with any migrating user.

Q. 8. Do you agree with ComReg's proposals regarding the migration of existing ECN telemetry systems? Please give reasons in your response.

ESBN agrees with ComReg's proposals.

Q. 9. Do you agree with ComReg's draft Regulatory Impact Assessment? Please give reasons in your response.

ESBN agrees with the overall tone of the RIA and agrees that Option 1 is by far the better of the regulatory options set out.

The draft RIA sets out a reasonable assessment of the factors around this proposed regulatory change and it provides a reasonable conclusion.

Q. 10. Are there any other factors that ComReg should consider when compiling a Regulatory Impact Assessment on the migration of existing users? Please give reasons in your response.

ESBN are not aware of any factors.

Q. 11. Do you agree with ComReg's proposal to set the duration of on-site, local area and wide-area telemetry licences to five years and national telemetry licences to ten years? Please give reasons in your response.

ESBN believe a more flexible approach to the duration of national licences would be more appropriate.

Owing to the nature of the service ESBN plans to use the UHF telemetry spectrum for (part of Critical National Infrastructure) and the cost and length of time it would take to implement an alternative, ESBN would need a minimum of three years' notice in the event that the licence would not be extended or renewed. ESBN proposes therefore that

from 4 years before the termination of the 10 year licence, a 4 year rolling licence would be renewable once a year. This would provide a more suitable method to licence this use.

Q. 12. Are there any other factors that ComReg should consider when deciding on the licence conditions that apply to future telemetry licences? Please give reasons in your response.

ESBN does not have other factors to add into the considerations.

Q. 13. Is ComReg's proposal to adjust the level of fees by the Consumer Price Index (CPI) adequate to ensure the ongoing efficient use of spectrum? Please give reasons in your response.

ESBN agree with this proposal. It is a practical way of defining an adjustment of fees over time.

Q. 14. Are there any other factors that ComReg should consider when setting fees for telemetry licences to ensure that its Statutory Objectives are met? Please explain your response in detail.

No comment.

Q. 15. Do you agree with ComReg's view that a *first-come first-served* award process is the most efficient mechanism for assigning on-site, local-area, wide-area and national telemetry licences? Please give reasons in your response.

ESBN has some concerns in this regard.

ESBN is in agreement with the proposal from ComReg that applicants for national licences should be required to satisfactorily demonstrate to ComReg the need for the spectrum requested. ESBN believes that the method to assign spectrum used for a service that is of strategic importance and is used in the provision of a service that is deemed to be Critical National Infrastructure (electricity supply) should be given precedence over services that do not have critical importance.

Notes from JRC to ESBN regarding the technical content of the ComReg Telemetry Consultation Document (ComReg11/94)

Page 1

no comment

Page 2

no comment

Page 3

ComReg recognises the need for dedicated telemetry spectrum in order to meet the growing demand for such services, as well as the necessity of maintaining good spectrum management; by providing dedicated spectrum, ComReg is able to minimise the number of sterilised channels and guard bands that occur when mixing the two services within common spectrum.

The new spectrum equates to the 72 utility channels within the UK's scanning telemetry band. The UK's remaining 8 channels from that band are designated for non-utility users (except that it is increasingly also being used by the water industry) and this is not being replicated by ComReg; there will however by a single 25kHz channel available at both VHF and UHF for, presumably, small on-site schemes.

Page 4

no comment

Page 5

It is noted that ComReg recognise that telemetry systems are used to provide “electronic communications networks” (ECN), not “electronic communications services” (ECS), as they are not intended for third party use for remuneration; this is significant from a licensing perspective.

Page 6

The restriction on repeating outstations in wide-area and national networks does seem to ignore topographic or building/vegetative clutter issues that may affect the coverage of local-area networks in some areas where the establishment of new base stations is severely controlled.

Page 7

As the total of the existing non-exclusive non-contiguous telemetry spectrum scattered over VHF Low, VHF High and UHF spectrum equates to 2 x 887·5kHz, there is a net increase of 2 x 375kHz (30 x 12½kHz channels), excluding the pair of 25kHz single frequency channels, which is welcome.

Page 8

It is noted that ComReg recognise that mixing fixed and mobile networks within the same spectrum creates a number of issues that are not conducive to the good management and efficient use of radio spectrum; and that they also perceive a reduced administrative burden with dedicated spectrum.

Page 9

no comment

Page 10

no comment

Page 11

Large industrial sites may still require the use of repeaters to overcome screening to plant and buildings, unless one can have multiple on-site licenses per site.

The intention of non-renewable five year licences seems onerous, especially as ComReg can revoke a licence at any time. Licensees would be required to apply for a new licence upon expiry.

A licensee may hold multiple on-site licences in different geographic areas. It is helpful that on-site licensees may also hold local-area, wide-area or national telemetry licences, if appropriate, in order to interlink site licensed systems that are more than one kilometre apart.

Page 12

There seems little to distinguish between Local Area and Wide Area (Regional) licenses, except that the former is not permitted to use repeater stations.

It might be better to combine Local Area and Wide Area licenses into a single Regional licence.

Page 13

The consultation document is similar to the UK Scanning Telemetry Band Adaptable Cellular Plan, though there are in fact some significant differences that are be noted later as appropriate.

There will initially be 4 national licenses, with the possibility of a further two in the future; each national licence comprises of 12 duplex (two-frequency) channels, which are based upon a national cellular frequency plan. Within a national licence block of channels, there is only one channel per cell.

Ten year non-renewable licenses, with licensees permitted to apply for a new licence upon expiry, seems onerous given that they are to be used for non-commercial activities involving the Republic of Ireland's critical national energy and water supply networks, rather than for commercial activities by a telecommunications operator.

No licencee may acquire more than two national blocks of spectrum – this appears to complicate matters for non-national utility usage, where a wide area licence may not cover a large enough geographic area and the national licence will seem inappropriate for a geographically restricted licensee; it may be that the solution will be for multiple overlapping regional, and possibly local, area licenses; though the six channels available may prove somewhat restrictive.

The ERP limit of 25W (14dBW) ERP {41W (16dBW) EIRP} is lower than UK's 250W (24 dBW) EIRP, and whilst this may limit the deployment of some stations for significantly obstructed paths (whether due to terrain or buildings/trees), it may enhance the ability to successfully undertake the international coordination of stations closer to the border in non-shared cells that are not already in use.

The national licence arrangement makes no mention of being able to utilise non-adjacent cell channels within a cell, which is a technique for significantly increasing the capacity of a cell, where such use can be coordinated. This would be a serious limitation.

The document reads as if ComReg are suggesting that the use of a cellular plan will in many cases negate the necessity to both coordinate with the UK and within the RoI; this is not the case. Maximum spectrum efficiency can only be achieved by fully coordinating a system with all co-channel systems up to 230km distant (which allows for systems being at opposite ends of their

respective cells relative to each other, together with some their outstations being outside the cell); thus it is not only desirable to do this within the RoI, it is necessary for any system within 200km of the RoI/UK land and sea borders.

Due to the proposed method of awarding national licenses, it may be that blocks will be licensed to disparate industries between the RoI and Northern Ireland. There is some merit in maintaining the similarity of spectrum use by utility between the RoI and the UK, particularly in respect of Northern Ireland. Thus common channels will be beneficial should the electricity supply networks of the RoI and NI become more interconnected and commonly controlled in the future.

Page 14

Not permitting a licensee to have more than two national blocks may result in spectrum laying fallow. Whilst there may be grounds for limiting a utility to one channel per cell, except by requiring additional justifications for the second block, this could become a significant impediment. These limitations, together with the more restricted EIRP limit and the apparent non-availability of non-adjacent cell channels, may severely and unnecessarily restrict the deployment and growth of telemetry systems within the RoI.

Q1: Given the appropriate restrictions imposed upon the on-site license, and the similarity of the local and wide area licenses, it may be more appropriate to merge the latter into a single regional licence with the privileges of the wide area licence.

Q2: This limits the ability to trade the part of a license on a case-by-case basis within a geographic area in order to overcome specific coverage issues between various utilities.

PAGE 15

The proposal to release up to 2 x 1.2625 MHz of paired spectrum will align with the channels already in use for telemetry services within the UK. The frequencies 458.48125 MHz and 458.49375 MHz, which correspond to UK channels T79 and T80 base transmit, are not available due to them being designated for Short Range Devices (SRDs) within the RoI and thus they cannot be used; the return frequencies of 463.98125 and 463.99375 MHz will be available as simplex channels.

Of the remaining 78 UHF two-frequency channels, 72 will be made available by means of the national cellular plan.

Page 16

Page 17

Page 18

Page 19

The RoI national cellular plan appears consistent with the UK's ACP in some respects, except that it uses a different method of cell identification and appears not to be 'adaptable'.

Page 20

No comment.

Page 21

This seems reasonable, though it may not necessarily aid ESB in deploying their new telemetry systems, unless there is sufficient virgin spectrum available to facilitate their roll-out across the RoI.

Page 22

Page 23

Table 3 lacks clarity regarding the 'Maximum Transmit Power Level', is this transmitter output power or ERP/EIRP? Earlier information suggests the latter. 25W is more restrictive that that permitted by the UK administration; it may mean that more base stations are required to give the necessary coverage, thus requiring the availability of more channels within a cell. International coordination between the Republic of Ireland and Northern Ireland may be an issue; in as much that NI's higher EIRP values will result in RoI's nearest co-channel systems being disproportionately further from the border. This will impact the RoI rather than NI.

Page 24

Whilst both horizontal and vertical polarisation is permitted, non-standard outstations (that is outstations using an antenna inferior to a 12 element yagi), are not allowed. Whilst this is generally considered desirable from a regulatory perspective, it will be very restrictive for on-site schemes were a 2 or 3 element yagi is preferred within industrial complexes; and many would argue for a rubber-duck type omni from a safety and survivability point of view (as used within the de-regulated SRD bands).

Page 25

Q11: This appears to overlook the fact that utility telecoms support critical operation, and unlike telecommunications companies, cannot easily discontinue services without adequate notice.

It would be wise to ask ComReg to ensure that the international coordination agreement and MoU include the UK Scanning Telemetry Band spectrum management organisations to ensure that the agreement fully meets RoI requirements, rather than an agreement with Ofcom resulting in interference due to inadequate analysis. The cellular plan does not guarantee that an RoI national operator can establish a station and co-reside with the next co-channel cell, as this neither takes into account land topography nor the possible use of non-adjacent cell channels, which extensively reduces the co-channel re-use distance. In the UK (GB and NI), all telemetry stations are fully coordinated out to 230km; the ACP is a procedure for channel reuse, not a means of avoiding the need for coordination, whether national or international. The consultation document appears to imply that Ofcom holds the assignment data for the telemetry bands, which is not the case.

Page 26

Q12

Page 27

Q13

Page 28

Q14

Note 40: should clarify that this does not apply to national channels, since one cannot have adjacent and consecutively numbered channel in a cell.

Page 29

Is this consistent with the Adaptable Cellular Plan and OfW49 as applied in the UK ? The UK electricity, gas and water utilities apply for a licence to operate a system within a cell and the spectrum management organisation decides which of the two primary utility channels appropriate to the applicant will be assigned; and if they are not available, then one of the non-adjacent cell channels will be sought in accordance with the procedure in OfW49.

The ACP and OfW49 have worked successfully since 1989, although they have been updated from time to time, specifically, to introduce both non-adjacent cell and interleave channels as a means of increasing the density of stations. A simple national cellular plan will fail to provide the necessary growth potential, as well as limiting the number of channels that may be required for large utilities that require comprehensive and in-depth telemetry and telecontrol systems.

Page 30

Q15

First-come first-served is a reasonable approach; though strategic issues of critical national infrastructure should generally take preference in terms of the choice of the block of spectrum awarded for national channels. For the other classes of user, the first-come first-served approach is also reasonable should there be no overriding reason to act differently on an occasional and highly specific case-by-case basis.

Page 31

Page 32

Figure 4 has a different cell numbering scheme to that used in the UK; thus it will be necessary to ensure that both countries regulators and spectrum management organisations understand the inter-relationship between the two numbering schemes for an international coordination perspective.

Page 33

Figure 5 has its cells incorrectly labelled. The cells as shown need to be moved one cell NE so as to align with the UK's ACP. The RoI's cell '57' ('K') corresponds to the UK's 'G' cell, not the 'K' cell (The 'K' cell is immediately NE of the 'G' cell). Also, the boundaries between the clusters 13, 24 and 26 are incorrect; along with all those within the RoI.

Page 34

Table 6 - the cell IGRs appear consistent, though the RoI cells appear offset relative to those in Northern Ireland.

Page 35

Apart from a typographical error for the block 4, 'M' cell outstation frequency (being shown as 4643.51875 instead of 463.51875), the frequencies are correct; blocks 1 & 2, 3 & 4 and 5 & 6 correspond to the UK gas, electricity and water industry channels respectively.

Page 36

There are to be 8 two frequency UHF channels at 455/469 MHz, 6 two frequency channels at 458/463 MHz and two 12½kHz simplex channels at just below 464 MHz for on-site, local and wide area telemetry systems.

Page 37

There are to be 15 two frequency VHF channels at 165/170 MHz.

Page 38

The base station antenna radiation pattern envelope is the same as in OfW49.

Page 39

The outstation antenna radiation pattern envelope is the same as in OfW49 for standard outstations.

Page 40

Page 41

“Harmonising spectrum use with the UK and Northern Ireland” may be ambiguous. The present proposal does not harmonise how the spectrum will be used in terms of utility, only that the RoI's telemetry band will utilise the same general spectrum and channels.

Page 42

Page 43

Page 44

Page 45

It appears that ‘Repeaters’ have been defined as being of the on-frequency type, that is that they re-transmit the received frequency. Whist this is achievable, it requires far more onerous engineering to achieve a satisfactory result and prohibits the mounting complete repeater stations onto a single wooden transmission pole as commonly in rural areas.

The mounting of complete repeater stations upon wooden transmission poles is commonplace within the UK, including Northern Ireland; the repeater to remote outstation is assigned a separate channel to that used by the parent base station that hosts the repeater, thus making such installations readily deployable without the use of exotic engineering techniques that are not readily achieved for transmission pole mounted devices.

Page 46

Additional Comments

No mention is made of the target receiver input level, whether for single or duplicated (hot-standby) systems; nor whether any additional allowance is permitted for the additional losses incurred by some duplicated (hot-standby) system configurations.

No mention is made of the assignment process, nor the methodology for determining the ERP values for a family of outstations.

7 Grontmij Ltd.

Grontmij has been asked to comment on these proposals by one of our clients operating in the affected region.

Our general observations are as follows:

1. In some cases it is difficult to comment on specific questions without knowing the background as to the preferred strategy and options that are being considered in this paper.

2. The maximum power seems high at 25w and may contribute to inter cell interference dependant on local topography?

3. There doesn't appear to be any mention of path profiles to prove the viability of transmission, determine the maximum radiated power needed for each base station and associated outstations/RTUs, circuit losses, EIRP etc. Thus minimising the potential for interference.

4. Repeater stations are allowed within wide area telemetry (25Km) but not local area.(12.5). As repeaters are often used to get round obstructions should there not be 'special cases' where these are allowed, given the hilly terrain of parts of Ireland.

5. What steps are being taken to ensure liaison with the governing bodies of the UK and Northern Ireland, regarding cell coverage, repeat patterns and frequency allocation in order to ensure a mutually compatible solution?

Thank you for the opportunity to comment on your proposals,

Kind regards,

Malcolm Tyler
Technical Manager
_____

Grontmij
Winchester Place, Peterborough, PE3 6AP

www.grontmij.co.uk

8 Joint Radio Company

27 January 2012

TO:

Commission for Communications Regulation, Irish Life Centre, Abbey Street, Dublin 1

Dear Ms Devey,

Reference: Submission re ComReg 11/94

Please find attached JRC's response to ComReg's consultation 11/94. In addition to our main response, we attach a confidential Annex due to the sensitive nature of certain data relating to utility telecommunications networks.

We shall be copying this material to the Electricity Supply Board and Northern Ireland Electricity who are both JRC Member Companies and for whom we offer telemetry radio systems advice.

Please contact me if anything needs clarification.
Best regards
Adrian Grilli

Managing Director

Joint Radio Company Limited
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52 Horseferry Road,
LONDON SW1P 2AF
United Kingdom

JRC Response Consultation 11/94 Licensing Framework for Telemetry Systems

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Key Points

- JRC welcomes the ComReg consultation on a new licensing framework for VHF and UHF telemetry systems and related spectrum release proposals as a wise preliminary exercise prior to making allotments.
- JRC has been working with the Electricity Supply Board (ESB) on the design of a new telemetry networks.
- ESB is a member of JRC, and both organisations are members of the European Utilities Telecommunications Council (EUTC) and active participants in the Spectrum Management sub-group which is developing a strategy for future spectrum requirements for utilities to enable them to respond to both national and European Energy and Environmental policy objectives.
- JRC also manages the energy utility radio spectrum in Northern Ireland on behalf of Northern Ireland Electricity and National Grid (Gas), and is thus responsible to Ofcom for cross border co-ordination of radio spectrum.
- Because of the sensitive nature of certain data related to utility telecommunications networks, this response is supplemented by a **CONFIDENTIAL ANNEX.**
- JRC would welcome the opportunity to contribute to the Cross Border Co-ordination Requirements outlined in section 7.3 if required.

Q2: Do you agree with ComReg's proposal to limit the number of national telemetry licences that may be held by a single licensee to a maximum of two?

2.1 One of the justifications for limiting the number of licences that may be held by one entity relates to UK experience where six national blocks are divided between the three major utilities, giving 24 national channels to each utility sector.

2.2 JRC is offering additional information for ComReg on this subject within the Confidential Annex.

Q6: Do you agree with the proposed national cellular plan for frequency re-use?

6.1 Because telemetry systems need to evolve and adapt to changes in the underlying utility networks, the cellular planning technique has proved its worth in accommodating the organic growth in many sectors.

6.2 It is assumed that the Republic of Ireland will adopt an 'adaptable' approach to cell planning whereby non-adjacent cell channels can be used in each cell at lower powers in order to use the spectrum most efficiently.

6.3 Examples of particular applications of an adaptable cellular plan are contained within the Confidential Annex.

Q10: Are there other factors ComReg should consider?

10.1 This UHF band is shared internationally with maritime services. JRC would be interested to see what provision ComReg intends to make to accommodate these services, as they create problems from time to time for the telemetry service in areas close to the coast and in navigable waterways, and their use cannot be constrained by national regulations.

Q12: Are there any other factors that ComReg should consider when deciding on licence conditions that apply to future telemetry licences?

12.1 JRC wishes to clarify a number of related issues that are dealt with in the Confidential Annex.

Background on JRC

I. JRC Ltd is a joint venture between the UK electricity and gas industries specifically created to manage the radio spectrum allocations for these industries that is used to support the emergency and safety critical operations.

II. JRC manages blocks of VHF and UHF spectrum for both Private Business Radio applications and for telemetry & telecontrol services. JRC created and manages national cellular plans for co-ordinating frequency assignments for a number of large radio networks.

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

IV. 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 in order to maintain the integrity of the UK's energy generation, transmission and distribution systems and networks.

Adrian Grilli
Managing Director
JRC Ltd
27 January 2012

9 Meath County Council

List of Questions

Q. 1. Do you agree that the four proposed licence types (on-site, wide area, local area and national) and their proposed features are sufficient to cater for all ECN telemetry system requirements? Please give reasons in your response.

We agree with 2 no. of the of the proposed licenced types but given there is another area in spectrum available to on site short range devices why would you allocate more spectrum to similar users?

If most current users of the SRD spectrum are moved into a wide area licenced band there will be plenty of free to use spectrum for those who wish to maintain licence free systems.

Also given the cost difference between local & wide area networks and the likelihood that repeaters will be required at some stage it is unlikely anyone would make use of the local area licence.

Q. 2. Do you agree with ComReg's proposal to limit the number of national telemetry licences that may be held by a single licensee to a maximum of two? Please give reasons in your response.

Yes. There are a minimal amount of utilities who require a national radio licence.

Q. 3. Do you agree with ComReg's proposal to reallocate spectrum for use specifically by fixed telemetry services?

Yes. It would seem a logical solution to separate mobile users and correctly regulate the fixed radio telemetry users.

Q. 4. Are there any alternative uses of the spectrum bands listed in Table 2, which could not be accommodated elsewhere in the 163 – 174 MHz and 450 – 470 MHz bands? Please give reasons with your answer.

No Comment

Q. 5. In addition to those already listed, are there any other factors that ComReg should consider when deciding on the amount of spectrum to reallocate for use by fixed telemetry services? Please give reasons with your answer.

Is there enough bandwidth allocated?
In the water industry alone there are 34 local authorities operating independently, each with multiples of radio applications from multiples of vendors. In order to be compliant they will each require at least one licence with many larger RF users requiring multiples.

Each private firm operating in this industry will also require single/multiple licences.

Q. 6. Do you agree with the proposed national cellular plan for frequency reuse? Please give reasons with your answer.

Yes. For fixed geographical frequency owners but If the licencing structure is geographically re-distributed how can a private contractor operate a single licence in multiple locations?

Is the licencing structure aimed solely at state/semi state bodies? If so will private companies be required to re-use their existing business radio licences?

Q. 7. Are there any other factors that ComReg should consider with regard to the migration of existing telemetry systems or existing Community Repeaters as detailed above? Please give reasons in your response.

The replacement/upgrade costs for some equipment may be prohibitive in the short term. What duration will be allowed to change frequencies?

Q. 8. Do you agree with ComReg's proposals regarding the migration of existing ECN telemetry systems?

Yes. It will be reasonably straightforward given time to move their equipment to other areas of spectrum.

Q. 9. Do you agree with ComReg's draft Regulatory Impact Assessment? Please give reasons in your response.

In principle yes but more discussion is required to accommodate all current users.

Also there is no mention of policing of the spectrum. Who is responsible for regulation, policing?

Q. 10. Are there any other factors that ComReg should consider when compiling a Regulatory Impact Assessment on the migration of existing users? Please give reasons in your response.

No. Migration is necessary.

Q. 11. Do you agree with ComReg's proposal to set the duration of on-site, local area and wide-area telemetry licences to five years and national telemetry licences to ten years? Please give reasons in your response.

Yes, but given the investment required to move existing hardware into different licenced bands all licences should be have gauranteed renewal if required for subsequent terms.

Q. 12. Are there any other factors that ComReg should consider when deciding on the licence conditions that apply to future telemetry licences? Please give reasons in your response.

Will Comreg evaluate/recommend/advise on hardware brands and/or types to be used in the spectrum?

Q. 13. Is ComReg's proposal to adjust the level of fees by the Consumer Price Index (CPI) adequate to ensure the ongoing efficient use of spectrum? Please give reasons in your response.

Yes this is adequate.

Q. 14. Are there any other factors that ComReg should consider when setting fees for telemetry licences to ensure that its Statutory Objectives are met? Please explain your response in detail.

Fees are set per licence. Is there a max no. of licences any one user can purchase?

Q. 15. Do you agree with ComReg's view that a *first-come first-served* award process is the most efficient mechanism for assigning on-site, local-area, wide-area and national telemetry licences? Please give reasons in your response.

No. All users deserving of a licence must be allowed access to one. Geographically located users i.e. local authorities should be given preference on those frequencies that will best accommodate their region within the cellular frequency re-use pattern.

10 National Directorate of Fire and Emergency Management

It has come to our attention that the proposed changes to the assignment of frequencies for telemetry may impact on the operation of Fire Service VHF and UHF radio systems.

It is not possible to make a detailed submission at this time (the consultation document came to our attention 25/01/2012).

I would be grateful if could ensure that any changes or reassignment of frequencies do not interfere with the current fire service radio system which is used to support mission critical fire-fighting and emergency service operations.

Please find attached a list of UHF and VHF channels in use by the Fire Service (other VHF channels may be in use within the 74/84frequency range). Please treat that attached documents as confidential.

I would be happy to meet with you to provide further clarification or information to support our position on this matter.

Thank you for considering this input.

Regards,

Keith Leonard

National Directorate for Fire & Emergency Management
Department of Environment, Community & Local Government

11 Telecommunications Association of the UK Water Industry

Supported by
Atkins Ltd.,
200 Broomielaw, Glasgow, G1 4RU.
Tel: 0141 220 2000

TELECOMMUNICATION ASSOCIATION OF THE UK WATER INDUSTRY - TAUWI -

RESPONSE TO THE
COMMISSION FOR COMMUNICATIONS REGULATION
On
The introduction of Licensing Framework for VHF and UHF Telemetry Systems, Changes to Current Frequency Assignments and Spectrum Release Proposals

INTRODUCTION

This response is provided by the **T**elecommunications **A**ssociation of the **U**K **W**ater **I**ndustry **(TAUWI)** on behalf of its members**:**

Anglian Water Services Ltd
Black Sluice Internal Drainage Board
Bournemouth & West Hants Water plc
Bristol Water plc
Cambridge Water plc
Dee Valley Water plc

Environment Agency
Essex & Suffolk Water
Hartlepool Water
Lindsey Marsh Drainage Board
Welsh Water - Logica plc
Northern Ireland Water Ltd
Northumbrian Water Ltd
Scottish Water
Severn Trent Water Ltd
South East Water Ltd
South Staffordshire Water Ltd
South West Water Services Ltd
Southern Water plc
States of Jersey Transport and Technical Services Department
Sutton & East Surrey Water plc
Thames Water Utilities Ltd
United Utilities Water plc
Veolia Water Central
Veolia Water East Ltd
Veolia Water South East Ltd
Wessex Water Services Ltd
Yorkshire Water Services Ltd

Atkins Ltd act as the main point of contact for TAUWI members and represent their interests on a range of matters, including responding to strategic consultation documents on their behalf.

This response may be reviewed by each of the 28 member organisations that form TAUWI and therefore negates the need for submissions from individual water companies. However some members may choose to provide individual responses.

The Association was formed in April 2004 and replaces the Telecommunications Advisory Committee (TAC) which for the previous 14 years had acted as the focus for the UK Water Industry in relation to fixed and mobile communications and scanning telemetry from a technical and regulatory aspect. The scope of TAUWI has been extended to capitalise on new opportunities resulting from emerging technologies and regulatory changes. At the same time, more emphasis is being placed on strategic issues in relation to other sectors of an organisation's operation, such as IT Systems, General Communications Infrastructure and business requirements. TAUWI is chaired by Mr Les Ammon of Northumbrian Water Ltd.

The Water Industry is a major user of Telemetry Systems and employs various communications technologies, including UHF Scanning Telemetry, to support their mission critical operations. All aspects of water management, including the recovery, treatment and distribution of water, the control and monitoring of water quality and operation of flood defence systems utilise Telemetry to ensure compliance with statutory requirements as well as reducing maintenance and operational costs. Increasing Environmental regulatory requirements increases the need for good quality and reliable information. All aspects of water policy in England is the responsibility of Department for Environment Food and Rural Affairs (DEFRA). The Industry is regulated by the Water Industry Regulator, OFWAT.

In the UK, the UHF Scanning Telemetry band comprises 80, 12.5 KHz Channels, (of which 72 are assigned by Ofcom to the three major utilities (Water, Electricity and Gas) for Telemetry and Telecontrol purposes. The 72 Channels are arranged on a twelve cell, six channels per cell, regular frequency re-use pattern. Each of the three utilities has access to two exclusive channels per cell.

The 24 Channels assigned to TAUWI are managed on a National Licensing basis by Atkins Ltd who acts as the Spectrum Management Organisation for the UK Water Industry. This relationship provides the RF engineering and planning necessary to ensure that the most effective use is made of the radio spectrum. The UHF Scanning Telemetry systems are designed and assigned licenses in accordance with UK Interface Requirement IR 2037, Voluntary National Specification 2111 and OfW49 (previously MPT 1411) specification. Atkins also acts as a focus for the Industry and deals with engineering, licensing and financial matters with related Regulators and Government Departments.

In addition TAUWI through their support organisation Atkins, administers, on behalf of Ofcom, an additional 8 UHF channels, identified by Ofcom primarily for use by Non – Utility organisations and the Water Industry.

The Water Industry welcomes the opportunity to respond to ComReg's consultation document on their plans to introduce a new licensing framework for fixed telemetry use in the Republic of Ireland and have provided the following responses to the questions raised in the document.

Responses

Question 1: Do you agree that the four proposed licence types (on-site, wide area, local area and national) and their proposed features are sufficient to cater for all ECN telemetry system requirements? Please give reasons in your response.

We are not in a position to comment on this question

Question 2: Do you agree with ComReg's proposal to limit the number of national telemetry licences that may be held by a single licensee to a maximum of two? Please give reasons in your response.

We are not in a position to comment on this question

Question 3: Do you agree with ComReg's proposal to reallocate spectrum for use specifically by fixed telemetry services? Please give reasons in your response.

We are not in a position to comment on this question

Question 4: Are there any alternative uses of the spectrum bands listed in Table2, which could not be accommodated elsewhere in the 163 – 174MHz and 450 – 470MHz bands? Please give reasons with your answer.

We are not in a position to comment on this question

Question 5: In addition to those already listed, are there any other factors that ComReg should consider when deciding on the amount of spectrum to reallocate for use by fixed telemetry services? Please give reasons with your answer

We are not in a position to comment on this question

Question 6: Do you agree with the proposed national cellular plan for frequency reuse? Please give reasons with your answer.

The UK Water Industry is in agreement with the proposed National Cellular Plan for frequency reuse. We understand ComReg are proposing to implement similar planning criteria to that currently used by the utilities in the UK to plan and assign spectrum to ST systems. Further, the proposed channel frequencies and assignment of the 72 National Channels interface well with the UK Adaptable Cellular Plan (ACP).

The Water Industry has an established deployment of telemetry systems and depends on assigned interference free spectrum for mission critical applications and whilst the proposed plan is designed to minimise the risk of interference and simplify coexistence with UK Water Industry Telemetry Systems, we strongly believe that there is a need to coordinate the licensing of systems in the Republic, particularly near the border and along the east coast with systems operating in Northern Ireland and along the West Coast of England, Scotland and Wales.

It is assumed that more detailed discussions will take place with TAUWI/Ofcom to manage the current and future allocation of boarder cells.
Representatives from TAUWI and Atkins would be happy to meet with ComReg staff to discuss this in more detail.

Question 7: Are there any other factors that ComReg should consider with regard to the migration of existing telemetry systems or existing Community Repeaters as detailed above? Please give reasons in your response

We are not in a position to comment on this question

Question 8: Do you agree with ComReg's proposals regarding the migration of existing ECN telemetry systems? Please give reasons in your response

We are not in a position to comment on this question

Question 9: Do you agree with ComReg's draft regulatory impact assessment? Please give reasons in your response

We are not in a position to comment on this question

Question 10: Are there any other factors that ComReg should consider when compiling a Regulatory Impact Assessment on the migration of existing users? Please give reasons in your response

We are not in a position to comment on this question

Question 11: Do you agree with ComReg's proposal to set the duration of on-site, local area and wide-area telemetry licences to five years and national telemetry licences to ten years? Please give reasons in your response

We are not in a position to comment on this question

Question 12: Are there any other factors that ComReg should consider when deciding the licence conditions that apply to future telemetry licences? Please give reasons for your response.

We understand from the consultation paper that ComReg propose the use of 6 UHF paired channels and 2 UHF simplex channels for the purposes of licensing Wide-Area Telemetry systems. The proposed frequencies correspond with the 8 UHF channels identified by Ofcom primarily for use by Non-Utilities and the Water Industry for

Telemetry. These are not subject to the ACP. Therefore, we consider that there will also be a requirement to coordinate with ComReg the licensing of these channels to ensure interference protection to existing telemetry systems and future UK and Ireland allocations.

Question 13: Is ComReg's proposal to adjust the level of fees by the consumer price index (CPI) adequate to ensure the ongoing efficient use of spectrum? Please give reasons in your response.

We are not in a position to comment on this question

Question 14: Are there any other factors that ComReg should consider when setting fees for telemetry licences to ensure that its statutory objectives are met? Please explain your response in detail.

We are not in a position to comment on this question

Question 15: Do you agree with ComReg's view that a *first-come first-served* award process is the most efficient mechanism for assigning on-site, local-area, wide-area and national telemetry licences? Please give reasons in your response.

We are not in a position to comment on this question

Lawrence Mears
BSc MIET
Principal Engineering Consultant
Atkins Ltd

12 Westmeath County Council

List of Questions

Q. 1. Do you agree that the four proposed licence types (on-site, wide area, local area and national) and their proposed features are sufficient to cater for all ECN telemetry system requirements? Please give reasons in your response.

We agree with the proposed licensed types but is there scope for expansion of new technology and devices given there is another area in spectrum available to on site short range devices?

If most current users of the SRD spectrum are moved into a wide area licensed band this would free up available spectrum.

The cost difference between local & wide area networks and the likelihood that repeaters will be required at some stage given the different geography of regions means that each local authority will face different set up costs for their systems and technology advances may supersede solutions already in place.

Q. 2. Do you agree with ComReg's proposal to limit the number of national telemetry licences that may be held by a single licensee to a maximum of two? Please give reasons in your response.

Yes. Would not like to see a monopoly created by multiple licences's being held by a small no. of operators who would in turn could regulate those who used that bandwidth.

Q. 3. Do you agree with ComReg's proposal to reallocate spectrum for use specifically by fixed telemetry services?

Yes. This area of fixed radio telemetry needs regulation.

Q. 4. Are there any alternative uses of the spectrum bands listed in Table 2, which could not be accommodated elsewhere in the 163 – 174 MHz and 450 – 470 MHz bands? Please give reasons with your answer.

No Comment

Q. 5. In addition to those already listed, are there any other factors that ComReg should consider when deciding on the amount of spectrum to reallocate for use by fixed telemetry services? Please give reasons with your answer.

Is there sufficient bandwidth allocated? There are 34 local authorities operating in water service delivery with minimal funding and resources available. These Authorities have, over a long period of time developed telemetry systems which utilise different radio applications from different vendors. Will each location require a licence?

Q. 6. Do you agree with the proposed national cellular plan for frequency reuse? Please give reasons with your answer.

Yes. Would be more beneficial if for fixed geographical frequency owners but If the licensing structure is geographically re-distributed how can a Local Authority operate a single licence in multiple locations?

Q. 7. Are there any other factors that ComReg should consider with regard to the migration of existing telemetry systems or existing Community Repeaters as detailed above? Please give reasons in your response.

There are 34 local authorities operating in water service delivery with minimal funding and resources available. The replacement/upgrade costs for existing telemetry equipment may be prohibitive in the short term. What period will be allowed to effect any proposed changes to frequencies used?

Q. 8. Do you agree with ComReg's proposals regarding the migration of existing ECN telemetry systems?

Yes. There are 34 local authorities operating in water service delivery with minimal funding and resources available. Adequate time must be allocated to move existing equipment to other areas of spectrum if capable or for the procurement of new equipment if not.

Q. 9. Do you agree with ComReg's draft Regulatory Impact Assessment? Please give reasons in your response.

Yes, but if major changes are proposed to the existing networks established on an ad hoc basis then more discussion is required to accommodate all current users. What role will Comreg play in policing of the proposed spectrum?

Q. 10. Are there any other factors that ComReg should consider when compiling a Regulatory Impact Assessment on the migration of existing users? Please give reasons in your response.

Yes, There are 34 local authorities operating in water service delivery with minimal funding and resources available.

Q. 11. Do you agree with ComReg's proposal to set the duration of on-site, local area and wide-area telemetry licences to five years and national telemetry licences to ten years? Please give reasons in your response.

Yes, the capital investment required to ensure that existing hardware operates in a different licensed band, if required, could be offset if all licensees are guaranteed a renewal of their license if required for subsequent terms.

Q. 12. Are there any other factors that ComReg should consider when deciding on the licence conditions that apply to future telemetry licences? Please give reasons in your response.

What support will ComReg give to the licensee in promoting best practice thru recommending or advising Local Authorities on hardware brands or devices to be used in the proposed spectrum?

Q. 13. Is ComReg's proposal to adjust the level of fees by the Consumer Price Index (CPI) adequate to ensure the ongoing efficient use of spectrum? Please give reasons in your response.

Yes, this is fair and equitable.

Q. 14. Are there any other factors that ComReg should consider when setting fees for telemetry licences to ensure that its Statutory Objectives are met? Please explain your response in detail.

There are 34 local authorities operating in water service delivery with minimal funding and resources available. Will Fees be set per licence? Is there a max no. of licences any one user can purchase?

Q. 15. Do you agree with ComReg's view that a *first-come first-served* award process is the most efficient mechanism for assigning on-site, local-area, wide-area and national telemetry licences? Please give reasons in your response.

No. All users deserving of a licence must be allowed access to one. Geographically located users i.e. local authorities should be given preference on those frequencies that will best accommodate their region within the cellular frequency re-use pattern.