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## RA consultation on Use of Licence-Exempt Spectrum for Provision of Public Telecommunication Services

### Introduction

Thus plc is one of the UK's leading providers of voice, data, Internet and call centre services. The company offers businesses throughout the UK a full range of communication solutions which can be integrated, or bespoke, to suit individual customers' needs.

Thus welcomes the opportunity to respond to the Radiocommunications Agency's October 2001 consultation document on "Use of Licence-Exempt Spectrum for Provision of Public Telecommunication Services" and the associated draft Regulatory Impact Assessment (RIA).

### Executive Summary

Thus believes that the current licensing schemes are broadly satisfactory for non-RLAN/HIPERLAN bands. However, for the current RLAN band (2.4GHz) and in future the HIPERLAN band (5GHz), they are unsatisfactory and require amendment, due to the amount of equipment that is or will become available for use in this band.

The availability of cost-effective equipment potentially allows alternative networks to be built, that obviate the requirement for local loop connectivity through fixed links. The local loop market is dominated by the incumbent fixed operator (85+% of copper into premises) and is not competitive. With the disappointing response to local loop unbundling, and limited deployment of equipment at 28GHz, there is no immediate prospect that BT's dominance will be challenged.

Wireless RLAN or HIPERLAN access would provide competing service providers with an economically attractive alternative to using BT's copper and help reduce BT's dominance.

Of the three options for future exemption regulations identified in the RIA, we would strongly favour Option 3: *"Remove the prohibition of public telecommunication services from existing Exemption Regulations and allow services to be established with the minimum possible regulatory constraints, relying on technological solutions to limit congestion"*.

## Detailed Answers

Q1: What are the potential gains and benefits to the UK of allowing commercial services in licence-exempt bands, in terms of new innovative services (business models), promoting competition, and making Britain the best place to do e-business?

A1. The current fixed line market is dominated by the incumbent fixed operator, BT. BT owns 85+% of all fixed lines in the UK. Cable companies are making inroads in some areas, but they still control less than 15% of the market.

Local Loop Unbundling was intended to give Other Licensed Operators (OLOs) access to BT's copper to provide telephony and broadband services. The take-up has been disappointing, with only 2 out of around 30 prospective entrants now remaining. These players have stated they will go into a maximum of 150 digital local exchanges in the UK (out of around 5,600) which will do little to increase the overall level of competition. Even BT's rollout of ADSL has only reached ~60% of the population, and BT has stated that the rest of the country is not economic.

The response to the RA's auction of BFWA spectrum at 28GHz was also disappointing, with many lots unsold. Deployment has now started in some franchise areas, but as with LLU, the impact on competition is likely to be restricted to limited geographic areas and the business market.

RLANs and HIPERLANs could allow commercial broadband services to be provided over wireless links with much lower initial investment than required for LLU and BFWA. The rollout commitment typically demanded for licensed spectrum and the cost of deploying such a network is prohibitive for many players. Allowing service providers to utilise licence-exempt spectrum and roll-out on a "as required" basis would lower the entry barriers and extend availability and competition in a key segment of the market, residential and smaller business users. The great benefit of broadband is not so much the higher speed (though this can also be of value) but the "always-on" nature of the services. Increasing the number of residential, SOHOs and SMEs with affordable access to broadband would contribute directly to the government's objective of making Britain the best place to do e-business.

RLANs and HIPERLANs can operate in shared environments (ie a base station serving several end-users) so that the actual bandwidth received per user is only a few hundred kilobits per second, but this is suitable for low bandwidth video and most Internet applications.

As well as extending coverage and competition, commercial use of RLAN and HIPERLAN spectrum will lead to innovative new applications, eg exploiting the greater mobility/portability of wireless terminals.

**Q2:** Will the introduction of public telecommunication services into existing licence-exempt frequency bands, within the conditions of use identified in Appendix B, result in unacceptable levels of interference to existing users, and if so, in what geographic locations might this be expected?

A2. Although there will be some interference issues at 2.4GHz, we believe that most problems can be overcome, and this should not be a barrier to commercial deployment. With low power devices restricted to LAN use, any interference effects will be local, and may be minimised by mesh deployment. (It is envisioned that the RLAN band may become polluted by the prevalence of Bluetooth devices, but these are short-range and will only interfere at the local level.)

The HIPERLAN band is currently reserved for WLAN use and should remain unpolluted if other equipment use is restricted in this band. Technology deployed at 5GHz should employ transmit power control and other mitigation techniques to minimise the effects of interference.

**Q3:** Would the introduction of public telecommunication services, into existing licence-exempt allocations, and within the current conditions of use identified in Appendix B, result in congestion of the frequency bands?

A3. The RLAN band will become congested regardless. The technology deployed at 5GHz should utilise techniques to minimise the effects of interference, eg CDMA or OFDM modulation and transmit power control. With adaptive power control, the more densely populated an area, the more power adaption can take place, and the more efficient the spectrum use.

Q4: In bands where channel access techniques have been identified for specific services, will these techniques be sufficient to avoid future congestion? If not, please give information about other techniques that might be applicable.

A4. No response

Q5: What type of public telecommunication services could be offered in licence-exempt spectrum and what is the anticipated market potential?

A5. We believe the following categories of service would offer the most market potential and should be allowed for commercial provision:

- self-provisioned networks (as at present) where a business extends a LAN by wireless means;
- affordable broadband access for residential, SOHO and SMEs (as an alternative to DSL and cable modems) to support both data and voice services;
- access services provided by airports, coffee shops etc to 'nomadic' users, either for a direct fee or as part of the overall service package;
- temporary point-to-point connectivity pending access to licensed spectrum.

We believe that free "public" use should be restricted, such that uncontrolled open networks do not proliferate. Rather, the band should be available to OLOs to provide an alternative local loop, and ensure that existing Telecomms Act and Licence conditions are adhered to.

Q6: Assuming that there would be a lower quality of service available from public telecommunication services using licence-exempt spectrum, compared to those using licensed spectrum, how could potential end users be informed of this?

A6. Depending on the service offered, end users need not get a lower quality of service. Broadband Internet access is potentially such an example. For services where reduced quality of service was apparent, the cost of the service may be the differentiator, and the end user would be paying less to achieve the lower quality of service.

Q7: Which, if any, frequency bands identified in Appendix B are not suitable for the introduction of public telecommunication services and why?

A7. Currently Thus envisions only the RLAN and HIPERLAN bands would be suitable, due the proliferation of suitable cost-effective equipment in these bands. Should equipment vendors produce equipment in mass-market volumes for use in other near line-of-sight bands, then Thus would welcome their inclusion.

Q8: Are there any potential problems associated with allowing commercial services in licence-exempt spectrum?

A8. If the bands are completely opened, allowing "free" public networks and access, there is a risk that unregulated networks may emerge which could evade the existing regime for telecommunications regulation, or at least pose problems for enforcement. For example, if such networks provided anonymous access to the Internet and other resources, this could hinder interception and policing of illegal activities such as terrorism, distribution of child pornography etc.

Q9: Assuming that public telecommunication services are permitted in licence-exempt spectrum, what would be considered suitable time scales for making these changes in each of the bands identified in Appendix B?

A9. Assuming the only bands covered are RLANs and HIPERLANs, then the existing consultation period for HIPERLAN should be considered a reasonable timeframe for both bands.

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