



February 15, 2002

Mrs. Sallyanne Miller
Technology Sectors Unit
Radiocommunications Agency
10R/2E
Wyndham House
189 Marsh Wall
London E14 9SX

Dear Mrs. Miller:

Please accept the Information Technology Industry Council's response to the Consulting Document issues by the Radiocommunication Agency.

Introduction

The Information Technology Industry Council (ITI) represents the leading U.S. providers of information technology products and services. In 2000, ITI member companies employed more than one million people in the United States and exceeded \$668 billion in worldwide revenues. Since 1995 the IT industry has been the dominant force behind the U.S. economy's acceleration in productivity growth and has been directly responsible for one third of the U.S. economic growth.

ITI would like to address the issues raised in the Consulting Document issued by the Radio Communication Agency (RCA) in October, 2001 since ITI's members manufacture 802.11b and Hyperlan II equipment operating in the 2.4 and 5 GHz frequency bands.

Background of 2.4 and 5 GHz Devices

Over the past several years, the types of services that the WLAN devices could provide expanded in accordance with the advances in technology. Originally designed to provide a wireless link to a remote location or for temporary connections, these devices have evolved to systems capable of providing low cost ISP type services to service provider customers. These devices are currently capable of providing a wireless public access connectivity to mobile user's whether in an office environment, at an airport or train station. Moreover, these services do not compete against the bigger service providers. Instead, they enhance the level of service the service provider can offer to it's customers.

Those earlier systems were placed on the market in accordance with any and all national radio standards. Currently, these systems must now meet the applicable ETSI radio standards in accordance with the provisions of the R&TTE Directive before they can be placed on the market. Since the 2.4 GHz band is not harmonized in the EU at this time, a frequency notification must also be submitted to the regulatory agency 30-days before the device can be placed on the market.

Currently, the systems being deployed in the UK are restricted from offering any type of public access service in this band. In part, these restrictions are a result of a concern that this band will become *polluted* or unusable as more of these unregulated services are placed on line.

Another reason for the restrictions is to provide some protection for incumbent public access services operating in other bands. The current regulations protecting incumbent public access service providers are no longer practical anymore. In fact, they may actually hinder some of the operators of the protected services from deploying cost effective alternatives or complimentary type services to their customers.

Also, more recently, the RCA allowed some public access services to be operated on a case by case basis requiring the provider to obtain a special license or waiver to operate the service in a specific location. These licenses were granted on a first-come, first-served limited basis. This process restricts any competing services from obtaining a license and operating a competing service in the area. This process may unintentionally promote unfair competition.

Three Scenarios

The consultation paper, released in October, 2001, addresses issues surrounding permitting public access services to be operated in unlicensed bands. The consultation paper provides three possible scenarios for how to address the use of these systems for public access service.

However ITI would like to address the 2.4 and 5 GHz systems that only provide a connection to the Public Access Networks. These systems would be deployed in places such as train stations, airports, and coffee houses to provide a wireless connection for the mobile user to the Public Access system wired cable modem or T1 line instead of using a wired Ethernet connection. Since the WLAN can operate at Ethernet speeds the wireless connection offers the mobile traveler real mobility and the ability to walk around the hot spot and still stay connected.

Scenario One

The first scenario would require the service provider to obtain a license to operate the service. Again this would only be a license to operate one hub (not applying to the whole Public Network system which could include 3G or cable modems and routers).

ITI suggests the RCA examine the Canadian approach to licensing these devices. Canada recently released a study document, SRP 2285, which addresses issues in the 2.4 GHz band. Based on the Canadian review of the current licensing proposal in the 2.4 GHz band, the study

recommends that the licensing requirements for these devices be phased out. Also, these systems have some additional protection since they are treated as a licensed service.

Scenario Two

The second scenario limits these types of services to indoor use only. This scenario is impractical, especially for anyone wishing to offer public access on these frequencies bands to people waiting in airports or working on campus-type settings. Systems are already deployed offering these services without any noticeable affect to service or creating any interference. Again since the system is only providing a hub connection to the mobile user to the system, and not the actual service itself/

ITI supports the findings in the independent study done for the RA, which suggest removing the restrictions on Public Access use for WLAN.

Other Issues

The proposal also suggests requiring each base station be to be registered with the agency. ITI believes registering each base station is extremely impractical and does not provide any benefit to either the user or the regulatory agency since it is only registering the wireless connection point to the wired public access service or 3G system.

Furthermore, the technical study commissioned by the RCA for this consultation in November, 2001, by Mason Communications and DotEcom, recommends the RCA should relax the requirement for restrictions of public services immediately in order to foster competition and keep current with the trends in technology.

Another concern raised by the UK proposal is how to address the interference issues with unlicensed services. The concern is there will be an increase in interference as these devices are deployed to operate a public service connection. However, these devices operate on a non-interference basis to other services.

Under the current UK regulations and in accordance with the ETSI standard (EN 300.328.1 addressing systems operating in the 2.4 GHz band) devices are limited to a maximum of 100mW EIRP. This 100mW EIRP limit is the maximum power allowed for a WLAN device whether operating as an ISP system or not. Therefore, a typical 2.4 GHz WLAN, operating as a public service device, poses no more of an interference threat than a WLAN operating as a non-public service . Furthermore, the low power limits in the current ETSI standard will restrict the size of the permitted cell further reducing the potential for interference to radio services outside the area of coverage.

The IEEE 802.11 and the Hyperlan standards address some frequency management issues by providing several non-overlapping channels that permit multiple systems to operate in close proximity while avoiding interference through the use of Dynamic Frequency Shift with a listen before talking scheme. These types of schemes will avoid interference to other RLAN's or other radio services operating in the same frequency band. In fact, 4 Watt EIRP WLAN systems are currently providing ISP services in some countries without any significant reports of interference problems reported from other services. In any event, the interference problems in

the field will be the responsibility of the operators of the ISP systems. However, systems properly installed, maintained and operated in accordance with the regulations should not cause any disruptions to services outside the band.

Unlike the licensed services where a provider may not have the license to operate in a specific area, the unlicensed operator may not be able to deploy his equipment for lack of available spectrum without causing or receiving interference that disrupts the service. However, the UK study, the section 8 conclusions state the RLAN devices are able to co-exist without any problems.

Another concern is the protection of competing services in licensed bands and to protect them from unfair competition. It should be noted that in most case's the very service providers who sought protection from unfair low cost competition have determined that the 802.11b,802.11a , and Hyperlan devices are actually a compliment and not a competitor to their roll out of 3G or 4G.

In fact, some of the big service providers have determined that by implementing these services in the 2.4 and 5 GHz bands will allow them to actually roll out some of the proposed 3G and 4G proposed services now, instead of waiting for the complete 3G and 4G networks to be developed and fully deployed.

Permitting the unlicensed bands for Public Access also allows the service provider to offer a low power, low cost alternative for installations where cost and high power is a concern. For example, there are concerns that high power 3G or 4G systems could interfere with ground and airborne avionics at airports. A low power system would alleviate this concern. Also, a school could deploy a low cost service for its students reducing the costs and time associated with wiring one or more buildings.

Specific Responses to Questions

ITI offers the following responses to the questions raised by the consultation.

Q1 : What are the potential gains and benefits to the UK of allowing commercial services in the license exempt bands in terms of new innovative services, promoting competition, and making Briton the best place to do business.

Even with modern communications, the business person still must travel. This produces down time while waiting at the airport or train station. However, a WLAN device deployed to provide services could link the traveler to the Internet. This permits the traveler to be more productive by handling other matters while outside his office including.

Q2: Will the introduction of public telecommunications services into existing license exempt band , within the conditions of use identified in Appendix B, result in an unacceptable levels of interference to existing systems.

ITI does not believe that by authorizing these systems to provide public access there will necessarily be an increase of interference in the 2.4 and 5 GHz bands. The potential for increases in interference is no greater for services operating to provide public access than for those systems operating as private networks. In fact the opposite is true. The private network operator would only be concerned about operation to his internal clients and less likely to care if other competing systems were in operation. Alternatively, the public service provider would need to determine if their system had sufficient bandwidth to avoid problems.

Q3: Would the introduction of public telecommunication services into the existing license-exempt bands and with in current conditions of use identified in appendix B, result in congestion of the frequency band.

As discussed in our response to question two, the public service provider would not necessarily increase the congestion in the frequency band. Furthermore, with the use of techniques like DFS and using non overlapping frequencies, some of the congestion in the band could be avoided entirely.

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 suggestions about other techniques.

Current technology exists to help reduce interference between various systems operating in the license exempt bands. In fact, standards groups like 802.11a., 802.11b, and Hyperlan all address these very issues. Furthermore, as new techniques and methodologies are introduced, they will be incorporated into the standards to avoid congestion or interference problems.

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

Basically, Internet connection type service. Currently, people can sit in coffee shops like Starbucks in the US, or Mos burger restaurant in Japan *and surf the net* while they eat and drink. Travelers can get the latest weather info or travel delays all while awaiting their train or plane. Also, public service providers can provide an inexpensive connection for the homeowner to broadband via 2.4 and 5 GHz technology.

Q6: Assuming there would be lower quality of service available from the public telecommunications services in the license exempt spectrum, how could the potential end user's be informed of this.

ITI disagrees with the RCA that there would be a lower quality service offered by these devices. Even operating at the lower data rates, the amount of data transferred is still greater then currently planned for most 3 G applications. WLAN are capable of delivering data wirelessly at Ethernet speeds. Therefore, the user will benefit from

using these high data rate systems to transfer files over the Internet from places such as train stations, airports , and bus terminals.

Q7: Which if any frequencies identified in Appendix B are not suitable for the introduction of public telecommunications services and why.

This depends on the type of service. The 2.4 and 5 GHz bands are ideal for data and even some VoIP operations. These types of services are currently in operation or being placed in operation worldwide in these bands.

Q8: Are there any potential problems associated with allowing commercial services in the license exempt band?

ITI does not believe there would be any major problems allowing this service in the band.

Q9: Assuming that public telecommunications services are allowed permitted in the license exempt band, what would be considered a suitable time scale for making these changes.

ITI supports the conclusion drawn in the executive summary of the independent study indicating that it should be done as soon as possible to help promote these services in the license-exempt band.

Conclusion

ITI supports the idea of WLAN systems to be used to provide public access. Our positions are further supported by the independent study conducted by Mason Communications for the RCA and on actual case histories of these systems operating similar services in other countries with a minimum of regulations. ITI believes that by allowing these type of services to be offered, low cost and complimentary services can be offered to customers in helping facilitate 3G and 4G deployment.

Thank you for accepting our suggestions and responses to the Radiocommunication Agency Consultation Document.

Respectfully submitted,

William H. Johnson
Manager, Technology Policy