

Packet Switched Voice Services

Consultation Report & Authorisation Guidelines

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1 Introduction

Packet switched voice services have been available for several years however with the boom in Internet use, increasing interest in this technology and associated applications is evident. Most of this interest is focussed on the possibility of delivering voice traffic using the Internet Protocol – Voice over IP.

Voice over IP (VoIP) provides the ability to send voice calls and faxes over IP-based data networks. Not only can VoIP support telephone-to-telephone-links, through suitable adapters but also voice communications from telephone to PC or from PC to PC. This enables networks' resources to be utilised far more efficiently. Internet Protocol has proven its ability to efficiently integrate voice traffic into the flow of data on IP networks, enabling voice and data services to be delivered to users from a single, multi-service network.

Voice over IP is ready to provide major benefits to all concerned, from service providers, enterprises to consumers. Such benefits include sustainable cost reduction for service providers and enterprises thus resulting in increased revenues. It will also enhance productivity for enterprises, increase choice and cost savings for consumers whilst convergence of voice and data will improve convenience.

The potential benefits of VoIP include integration with multimedia and multiservice applications, something which today's traditional telephone system can struggle to compete with. The ability to link phone calls to web sites and/or e-mails is also expected to prove extremely attractive. New voice service providers can therefore develop product offerings rapidly by utilising new or existing data networks for voice transport.

In a consultative document published earlier this year, the Authority sought to consult with all interested parties about a regulatory regime applicable to

packet switched voice services, typified by Voice over IP. This regime has to be congruent with current Maltese legislation as well as European Union guidance that should eventually be adopted.

In the consultative document, the criteria for identifying voice telephony services were listed and a proposed framework for regulating packet switched voice services, where necessary, was proposed. A summation of the responses received is provided here.

This document sets out the criteria that the MCA will apply in determining the appropriate authorisations that will be granted to providers of packet switched voice services once an application is successfully processed.

This paper is not a legal document and is being published without prejudice to the legal position or the rights and duties of the MCA to regulate the telecommunications market generally.

2 Legislative Background

The Consultative Document covered the legislative background in detail that will not be duplicated here. However for convenience the criteria that establish the grounds for a service to be considered as Voice telephony are being reproduced. These are

1. **Telephony must be the subject of a commercial offer** - Commercial should be understood in the common sense of the word, where the transport of voice is provided as a separate commercial activity, i.e. provided against payment and with the intention of making a profit.
2. **Telephony must be provided for the public** – the service is available to all members of the general public on the same basis
3. **Telephony must be provided to and from public switched network termination points** - Between public switched network termination points means that the voice communication service has to connect two network termination points on the PSTN at the same time. These termination points are those defined as subscribers using numbers from the national telephone numbering plan. Consequently, if access to the Internet is obtained via leased circuits for example, the service could never be considered as voice telephony, even if the call terminates on the public switched network.
4. **Telephony must involve direct transport and switching of speech in real time** – this implies that to qualify as telephony a, voice service has to have bounded and guaranteed connection intervals.

Voice services over the Internet in general continue to fall outside the definition of voice telephony, except where each of the conditions established above are met.

This means, except in very specific cases where the aforementioned conditions are satisfied, that Internet access/service providers may offer voice on Internet under their current licenses.

Conversely, voice communication services fulfilling the four conditions listed above and appearing as substitutes for voice telephony services provided by traditional means should be regarded as voice telephony and be submitted to the relevant regulatory regime, in consideration of the principle of technological neutrality.

A distinction must be drawn between voice over the Internet protocol (VoIP) and voice over the Internet. The former encompasses all kinds of conveyance of voice using the Internet protocol as a routing and transmission technology. Telecommunications operators increasingly use the Internet Protocol (IP) as a transmission technology for voice services in the core of their networks, as an alternative or a substitute to other transmission technologies such as asynchronous transfer mode (ATM) or synchronous digital hierarchy (SDH). The use of or the migration to IP technology within the core of public switched telephone networks does not affect the regulatory position of the companies concerned, nor require any change in the licences or authorizations under which they operate. The latter is a subset of the former and covers only such voice services that are provided over the public Internet, defined as a network of networks. Since the public Internet operates on a best-effort basis, if a service provider offers a voice service that traverses the public Internet, this service cannot be deemed "real-time" as there are no service quality guarantees.

In 2002, the EU established a new regulatory framework for electronic communications services. This framework must be adopted by member states by July 2003. In the case of Malta's accession to the EU, the framework's provisions would have to be transposed into Maltese legislation, scheduled to occur by the end of 2003. The MCA has recently published its proposal for a migration strategy from the current regime to the new framework via an interim step for electronic communications authorisation.

For the purposes of these guidelines, the provisions of the new EU regulatory framework, while acting as a desirable target, cannot yet be implemented.

Maltese legislation makes no specific reference to voice over IP. The definition of telephony in Maltese law is similar to that used by the EU and basically requires the same 4 criteria, since it is *“the commercial provision for the public of direct transport of real-time speech through the public switched network or networks such that any user can use equipment connected to a network termination point to communicate with another user connected to another termination point.”*

Under the Telecommunications (Regulation) Act (Cap. 399), no person shall install or operate a telecommunications system or provide a telecommunications service in Malta unless registered as an authorised provider. The licence to operate a telecommunications system or to provide a telecommunications service may be granted in the form of an individual licence or in accordance with a general authorization by the Malta Communications Authority.

The provision of VoIP is clearly a telecommunications service. Therefore these guidelines will establish how the MCA will treat authorisation requests for such services.

3 Responses to Consultation

Initially, the consultation period was set to run until Friday 1st November, however, a two-week extension to this deadline was granted after the MCA received two requests for additional time to be made available for responses. Responses were received from:

- Maltacom plc
- Central Information Management Unit (CIMU)
- Melita Cable plc
- Euroweb Ltd.
- Vodafone Malta Ltd.

Informal comments were also received from several other parties, including several Internet Service Providers and some prospective new market entrants. The MCA would like to thank all respondents for their valuable input.

Broadly speaking, with the notable exception of Maltacom plc, all responses were favourable and expressed agreement with the principles outlined in the consultative document. The fact that the great majority of respondents were positive in their assessment led the MCA to base the compilation of these guidelines on the principles expounded in the consultative document.

Matrices of the questions asked in the document and a summation of the various responses are provided in **Appendix A1**.

Complete responses considered not to contain confidential information will be posted on the MCA website.

4 Authorisation Criteria

The one key determination that must be made is whether the packet-switched voice service can be classified as “voice telephony” or not. In order to achieve this, the MCA has decided to apply the operant criteria described earlier in this document.

A service determined to be “voice telephony” needs to be treated differently from an authorisation standpoint in comparison to a service that is categorised as “data”.

Appendix A2 provides a chart that pictorially depicts the categorisation process. This shall now be explained in detail.

1. **Availability to General Public:**

Upon receipt of an application for authorisation, the MCA shall determine whether that service is to be made available to the general public. If this is the case, then the categorisation process continues since the first of the 4 listed criteria would be satisfied. If the service is not publicly available then inherently it cannot be classified as voice telephony.

2. **Commercial Offering:**

Analysis of the commercial aspect of the offer will be carried out. If this criterion is met, further categorisation is required and authorisation from the MCA must be sought.

3. **Use of PSTN end-points:**

If the voice service originates AND terminates on a PSTN end-point (i.e. a fixed line telephone), then the third criterion will be met. If this criterion does not apply, then the service cannot be considered a voice service. Therefore, since the service uses data packets for transportation, it can only be

considered a data service. In the case of VoIP, the Internet Protocol is used. Internet services can only be delivered by a duly authorised Internet or Other Data Networks Service Provider licensed under Legal Notice 170/1999 (amended by Legal Notice 223/2000). An organisation wishing to provide voice service that are categorised only as data would therefore need to seek appropriate authorisation from the MCA. The terms and conditions associated with a license to operate as an Internet or Other Data Networks service provider are listed in the relevant legal notice and sample license.

4. Real-Time Operation:

The service offered cannot be considered to be a real-time service if the data packets containing the voice information traverse the public Internet. This world wide network was not designed to provide consistent quality of service and so there can be no guarantees afforded as to the delay, latency, jitter or availability of any packetised voice communications passing through it. If the service in question does traverse the public Internet then this criterion cannot be met and hence it cannot be classified as voice telephony. On the other hand, it could be conceivable that a VoIP service uses private leased circuits or virtual private networks with clearly defined and bounded service levels and quality that would meet the real-time criteria.

The service could only potentially be classified as “voice telephony” if ALL four criteria are met. Even so, it would be important to distinguish between voice services that are PSTN-equivalent and those that are not. It would not be equitable to impose the same terms and conditions on the two service types. Hence a service that met all four criteria listed above but which also meets ANY of the following would be considered by the MCA to be a voice telephony service. If the service

- is marketed as a substitute for PSTN voice services,
- appears to a user to be a substitute for the PSTN **or**

- is the user's sole means of access to the PSTN

then the MCA will consider the service to be "publicly available voice telephony" and will be regulated accordingly under a new authorisation that is being proposed and which is expected to come into force early in 2003. The terms and conditions associated with this service type will be listed under an eventual amendment to Legal Notice 151/2000.

Clearly, any operator wishing to provide packet switched voice services over a system that requires licensing under the Telecommunications Services (General) Regulations 2000 (LN 151/2000) or Telecommunications (Regulation) Act - Cable Systems 2001 (LN 167/2001), would first have to be appropriately licensed prior to becoming eligible for authorisation to provide a voice telephony service.

5 Conclusion

The MCA considers that a VoIP service should only be regulated as *public voice telephony* if any of the following conditions apply:

- The service is described and marketed as a substitute for the Public Switched Telecommunications Network (PSTN) voice services; or
- The service appears to the customer to be a substitute for public voice telephony; or
- The service provides the customer's sole means of access to the traditional circuit switched PSTN.

Clearly, the above will only be applicable in cases where ALL four criteria listed in local and European law regarding the classification of telephony apply. Where a service is considered to be public voice telephony, the relevant obligatory requirements will have to be met. For example, these include requirements to provide access to emergency services, directory enquires and operator services. A new license covering "publicly available voice telephony service" is being proposed and this will be described in an amendment to LN 151/2000.

However, where a VoIP service is clearly being offered as an addition to the traditional circuit switched PSTN voice telephony service or as a secondary service, it is likely not to be considered as public voice telephony.

In the case where a service provider wishes to provide an indirect access service using a carrier-selection code or prefix over an IP network or the Internet, then for reasons of interconnection to a dominant market position (DMP), or other, operator, a voice telephony service authorisation would be required.

The MCA will have a technology-neutral approach to VoIP regulation. Therefore, regulation that is relevant to voice telephony and interconnection is likely to be relevant irrespective of the technology. However, not all VoIP services are considered to be public voice telephony. Many Internet telephony services are not used, and cannot be used, by customers as a substitute for their existing telephone service.

Any organisation intending to also become an operator of:

- Public fixed telecommunications systems and services
- Fixed wireless telecommunications systems and services
- Cable Systems

will need to obtain the relevant licence and be bound by its obligations.

ISPs are only permitted to offer Internet access in their present license. However, packet voice services that traverse the public Internet cannot be considered to be telephony and as such should be regulated according to a regime applicable to Internet or Other Data Networks Service Providers. It is therefore the MCA's intention that Internet Service Providers will be free to offer VoIP as long as their service offering conforms to the criteria mentioned previously. Existing ISPs need no new or additional authorisations. New entrants will have to go through the authorisation procedure before commencing commercial operations.

Companies installing private networks may require authorization from the MCA. Notification of intention to install and operate such a network would have to be received by the MCA. Special attention will be given to networks that span more than a single entity or physical location. It is not envisaged that any licensing conditions will be imposed on private networks, or the deployment of IP-enabled PABXs. There are no regulatory implications for

the importation and use of equipment designed to facilitate VoIP service delivery except from the fact that it must conform to the provisions of the R&TTE Directive if such equipment is to be connected to the PSTN. Legal Notice 329 of 2001 transposed the R&TTE Directive 99/5/EC. The scope of these regulations is to ensure that imported goods are safe, do not cause interference with other equipment and are compatible with local services.

The evolution of the packet switched voice services market has just commenced and participation in this sector is envisaged to be healthy. New entrants now face minimal barriers and therefore choice to the consumer may be broadened. Customers can potentially make cheaper international calls but the quality of service is not typically guaranteed. Care therefore ought to be exercised by subscribers to such services especially in the case where any pre-payment is involved. The MCA wishes to see VoIP services marketed in an appropriate manner without any false or exaggerated claims being made as to service quality or reliability. Adherence to relevant Codes of Practice will be closely monitored to deliver a substantial degree of consumer protection.

The regulatory approach specified in these guidelines will serve in the interim period up to the introduction of a new authorisation regime that is consonant with the 2003 EU Regulatory Framework for Electronic Communications. It is envisaged that the new authorisation regime will, in the main, operate a general authorisation scheme. These guidelines will apply as from the 1st January 2003. Licensing, legal or technical queries should be addressed to the

Malta Communications Authority

"Il-Piazzetta", Suite 43/44, Tower Road, Sliema, SLM 16, Malta.

Tel: (+356) 21 336 840. Fax: (+356) 21 336 846

Website: www.mca.org.mt

E-mail: info@mca.org.mt

License application forms may be downloaded from the above website and submitted to the Authority for consideration.

Appendix A1 – Response Matrices

CQ 1: Packet voice classifications

Are you in agreement with these classifications?

Maltacom	Do not agree with the concept of classification.
Melita Cable/VOL	In agreement.
Vodafone	Agree. Classes are indicative of technologies available.
Techinvest	Broadly agree with the classifications proposed.
CIMU	Clear definitions are needed to avoid confusion.

CQ 2: Regulatory Framework

Do you agree with the proposed format for the regulatory framework for VoIP services?

Maltacom	Do not agree to the proposed format – claim CP is “incomplete & often confusing”, “incoherent”. State that the new EU framework should be adopted.
Melita Cable/VOL	GA should be introduced asap.
Vodafone	Feels omitted from list of VoIPSPs and that they are able to do non-PSTN VoIP day 1.
Techinvest	Agree. GA should be introduced asap.
CIMU	Asks about licensing entity & procedures.

CQ 3: Authorisation Guidelines

Do you feel that the guidelines are reasonable & adequate?

Maltacom	Neither reasonable, adequate or technology-neutral. Necessitates "Byzantine" processes. Seen as reactive. Want EU regulatory framework.
Melita Cable/VOL	Guidelines are "not unreasonable"
Vodafone	Reasonable & adequate.
Techinvest	Agree with categories 1 & 2. Feel that category 3 would be impossible to regulate. *
CIMU	Where would MAGNET fit?

** Explained later*

CQ 4: Service Provider Obligations

Do you consider the obligations to be reasonable & justified?

Maltacom	Section is "unclear" and "not developed" adequately. MCA should make more "concrete" proposals.
Melita Cable/VOL	Broadly agree. There may be some exceptions.
Vodafone	Reasonable. Soft touch approach is favoured. Comments about interconnection regime.
Techinvest	Agree on the whole. Some individual comments.
CIMU	Ask questions re. Interconnection, service quality.

CQ 5 (8): Timeframes

Do you agree with the proposed timeframes?

Maltacom	Since the CP is "contradictory & muddled, at best confusing & at times, obscure" they can't judge.
Melita Cable/VOL	In agreement.
Vodafone	No objection.
Techinvest	No difficulty.
CIMU	Would like to test prior to 2003.

Other Remarks

Maltacom	Any diversion from the new EU regulatory framework would be backward looking. MCA should seek to protect competition & not Maltacom's competitors.
Melita Cable/VOL	Concur in general with thrust of CP if designation of telephony is as described.
Vodafone	---
Techinvest	Urge that licensing requirements should not be barrier to entry. ISPs can do VoIP as long as it is not PSTN substitute.
CIMU	Proactive consideration by MCA is "highly positive". Document appropriately & correctly presents understanding & consideration of key factors.

Appendix A2 – Authorisation Criteria Establishment Process

