



MALTA COMMUNICATIONS AUTHORITY

Broadband QoS Framework – Data Formatting

Consultation Document

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1.0 TABLE OF CONTENTS

1.0	TABLE OF CONTENTS	III
1.	INTRODUCTION.....	1
2.	BACKGROUND.....	2
3.	LEGAL BASIS	3
4.	FORMAT SUITABLE FOR THE PUBLICATION OF BROADBAND QoS INFORMATION.....	4
4.1	The Summary QoS Report	4
4.1.1	Format Specifications.....	5
4.2	Detailed QoS Report.....	8
4.2.1	Regional QoS Tables.....	8
5.	PUBLICATION OF REPORTS	9
5.1	Timing of Publication.....	9
6.	IMPLEMENTATION TIMEFRAMES	11
7.	SUMMARY OF PROPOSALS	12
8.	SUBMISSION OF RESPONSES.....	13

1. INTRODUCTION

Today subscribers demand broadband connections of ever increasing quality which are suitable to support complex and resource demanding applications and services such as entertainment related services, educational, medical and financial services, to mention a few. This wide range of applications and services is also indicative of the importance of a quality broadband connection in our daily lives and to the economic and social development of the country in general.

Broadband subscribers are dependent on information provided by ISPs when considering which of the various broadband packages available on the market is most suited for their needs. To date, ISPs publish the headline speed and the Typical Speed Range (TSR) of their various packages. The TSR has been included in the minimum information on each package, following the publication of an MCA Decision Notice titled “Broadband Internet – Quality of Service Framework” (hereinafter Decision) which establishes, amongst others, a set of QoS parameters suitable to define the basic characteristics of a broadband connection.

The Decision also requires ISPs to measure and report their QoS information for each broadband package every quarter. This consultation document puts forward a number of proposals on the method which is suitable for the publication of the required broadband QoS. The broadband end-user is the focus of this proposed decision since, once implemented, the end-user will have at hand a more detailed picture of the quality of the service which is being provided and is available on the market.

2. BACKGROUND

In January 2013, the MCA published a Decision Notice titled “Broadband Internet – Quality of Service Framework”¹ (hereinafter Decision). One of the main objectives of the Decision requires ISPs to provide detailed QoS information about the broadband connections they offer on the market. This information is intended to enable the subscriber to differentiate between existing products and thus help subscribers to make an informed choice.

The broadband QoS framework was based on the following three main pillars:

1. A number of QoS parameters were identified as those which are sufficient to describe the basic characteristics of the broadband internet connection. The framework also established the methodology to be followed when measuring the QoS parameters. ISPs were required to measure the QoS parameters and report measurements to the Authority on a quarterly basis.
2. ISPs were also required to measure and publish the Typical Speed Range² along with their broadband products. ISPs were also required to measure a set of network performance parameters and make them available to the MCA when required.
3. The Decision also provided for a transitory period of nine months thus allowing ISPs sufficient time to implement the provisions of the Decision. In November 2013 and subsequently every quarter, the Authority has received broadband QoS reports from the ISPs.

The Authority, is now proposing that ISPs shall make this information available to the subscriber. This paper therefore puts forward for consultation a proposal intended to harmonise how QoS information is presented by the ISPs to their end-users.

¹<http://www.mca.org.mt/sites/default/files/attachments/decisions/2013/Decision%20Notice%20-%20Broadband%20Internet%20-%20QoS%20Framework.pdf>

² Ibid – Section 7.

3. LEGAL BASIS

The proposals presented in this consultation are based on the provisions as laid down in section 5.3b of the decision titled “Broadband Internet – Quality of Service Framework” (MCA/D/13-1475) in which it is stated that the Authority reserved the right to establish a reporting format for the publication of QoS information.

This provision is also in line with Article 39 of the Subsidiary Legislation SL399.28 which also empowers the Authority to require undertakings to publish comparable, adequate and up-to-date information for end-users on the quality of their services.

Since the proposed decision presented in this consultation is a continuation of the Decision MCA/D/13-1475, the scope of this consultation will also be limited to QoS publication for fixed broadband services.

Furthermore, the proposed decision does not waive obligations originating from the Decision.

The Authority reserves the right to revise the scope and limitation of the proposed decision to reflect changes in the market.

4. FORMAT SUITABLE FOR THE PUBLICATION OF BROADBAND QoS INFORMATION

It is proposed that QoS information be provided publicly in two separate documents. This section discusses the purpose of the reports and the level of detail to be presented in each.

The first format to be considered in this paper, referred to as “**The Summary QoS Report**”, will take the form of a table in which the salient QoS information of a broadband offer are captured. The main emphasis of this table is that information is conveyed to the subscriber in a clear and concise manner such that it would be easy to understand. The tabular format proposed for the report will also help end-users to compare different services available on the market. It is also the opinion of the MCA that to reach such aim, the format of the table should be standardised across all publications. The proposed report format is outlined in section 4.1 below.

The second format, referred to in this paper as “**The Detailed QoS Report**”, augments the Summary QoS report by including also the geographical aspect of the data. This report segments the QoS information into six geographical areas as identified in the Decision and reproduced in Appendix 1 of this consultation. It is proposed that this report also includes information on the statistical accuracy of the presented QoS data and any other declarations required for the appropriate interpretation of the data.

4.1 THE SUMMARY QoS REPORT

The main objective of the Summary QoS report is to organise all the information for a particular broadband package in a way that is easy for the end-user to view, follow and compare. The format proposed for this table captures, in a single view, the broadband product as advertised by the ISP and the actual QoS performance which the ISP achieves for the same product.

It is proposed that the main features of the table will be standardised to facilitate as far as possible, a side-by-side comparison between tables originating from the same ISP or different ones.

The Authority will also reserve the right to revise and update the table to reflect any experience gained in the field and future developments of the sector.

4.1.1 FORMAT SPECIFICATIONS

It is proposed that the Summary QoS report takes the form of a table using the following template below:

Table 1 Proposed Format of the Summary QoS Report

Line ID	<this line is to be removed>	
1	Name of Internet Service Provider	
2	Broadband Package Identifier	
3	Advertised Headline Speed	
4		
5	Typical Speed Range (TSR)	
6		
7	Quality of Service Indicators as at <Quarter/Year>	
8a	Region	
8b		
9	Download Speed	
10	Upload Speed	
11	Availability of Internet Access	
12	Latency *	
13	Packet Loss *	
14		
15	Link to Detailed Report	
	* Smaller figures denote better performance	

The following list forms the proposal for the key formatting requirements:

- a) The fonts used throughout the table should be simple and legible.
- b) The sequence of the fields in the table forms an integral part of its standardisation and therefore should remain unchanged.
- c) All the rows of the table have to be listed and whenever no data is applicable, the field should be marked as such rather than omitted.
- d) It is recommended that the table should be bordered with a solid line. Internal table borders are not mandatory provided that:
 - a. The two sections are clearly distinct.
 - b. Each line in the table is visually demarcated.
 - c. Both columns are clearly distinct.
- e) All numerical figures should be accompanied by units, unless the figure denotes a ratio such as the case of "Packet Loss Ratio". All ratios are to be expressed in percentage format.
- f) Unless otherwise stated, all numerical figures should be listed with accuracy of up to
 - a. Two decimal places for all numbers which have an absolute value greater than one. E.g. 1.23 instead of 1.22555

- b. Two significant figures for all numbers which have an absolute value smaller than one. E.g. 0.034 instead of 0.03
- g) In the case where the table is optimised to be displayed on small screen devices such as mobile phones and tablets, the format of the table may be simplified provided that no data is omitted from the table and clear legibility of the text is ensured.

Table 2 below elaborates further the requirements associated with each field listed in Table 1 above.

Table 2

Line 1	Name of the Internet service provider (ISP) offering the broadband service. This may take the form of a commercial logo of the service provider, provided that the size of the logo is visually proportionate to the rest of the table.
Line 2	<p>Product identifier refers to the name or label that an ISP may use to refer to its product in marketing and other published material. The ISP should maintain a unique identifier for each broadband product and, as a minimum, retain this uniqueness up to such point when there are neither subscribers making use of the product nor the product is marketed.</p> <p>If the same product is marketed under different names, or it is included in different bundle(s), the ISP may choose to either:</p> <ul style="list-style-type: none"> a) include the list of bundles and/or alternative product names which refer to the same product; or b) generate a separate table for each product and link appropriately to the website.
Line 3	<p>The headline speed is an optional indicator which can be used by the ISP to indicate the speed that the connection can ever reach. A headline speed for the download and upload direction may be separately indicated. The separate figures (when used) are to be appropriately labelled as "Download" and "Upload" as necessary.</p> <p>Numerical figures in this field should be:</p> <ul style="list-style-type: none"> a) Accompanied by units of speed. b) Units in "bits per second" (bps) along with the relevant multiplier (k, M, G etc) are the preferred unit since these are more popular than "bytes per second" (Bps). c) Whenever possible, the units used for both directions should be the same. d) Rounded up/down to the nearest integer <p>Any other numerical reference which is not accompanied by units of speed should be treated as part of the product label and should be therefore included in Line 2 of the table.</p> <p>It is to be noted, that in accordance with the Decision, any connections sold under</p>

	a specific headline speed should be technically able to reach the speed.
Line 5	<p>Typical Speed Range (TSR) is to be displayed using the same units as used for the headline speed. Similar to the headline speed, the TSR indicator for the download and upload direction may be used separately. While the TSR indicator for the download speed is mandatory, the TSR indicator for the Upload speed is only optional if the Headline speed is indicated;</p> <p>Numbers inserted in this field should always be accompanied by the same unit of speed used to indicate the headline speed. If the headline speed is not listed the use of units as listed for Line 3 applies.</p>
Line 7	<p>A suitable date indicating the period of time during which the QoS indicators listed in this table were measured using calendar months and year. The actual date is optional.</p> <p>E.g. January – March 2015, or 01-2015 to 03 - 2015</p> <p>The use of abbreviated terms such as Q1, Quarter 1 etc</p>
Lines 8a	This line is to be omitted in the Summary QoS Report
Lines 9 - 13	<p>The list of QoS indicators listed in lines 9-13 of Table 1 refer to the list of QoS indicators identified in Section 4 of the Decision. The measurement methodology listed in Section 5 of the Decision should be followed during the measurement of the QoS parameters.</p> <p>In order to maintain the brevity of the table, the QoS information should not be classified by region unless the product is tailored to a particular area, in which case appropriate disclosure is necessary. The method used to estimate the average QoS value across the whole territory of Malta and Gozo should be explained in the Detailed QoS Report discussed later in this document.</p> <p>The sequence appropriate to list the parameters should remain as listed as per Table 1 above</p>
Line 9	Download speed – displayed in units identical to those used in the Typical Speed Range indicator headline speed.
Line 10	Upload speed – displayed in units identical to those used in the Typical Speed Range or the headline speed
Line 11	Availability of Internet Access Service – is to be expressed as a percentage.
Line 12	Latency is measured in milliseconds, denoting the one way delay.
Line 20	This line should be used to include a link to the Detailed QoS Report relevant to the period quoted in line 7 of the table.

4.2 DETAILED QoS REPORT

The Detailed QoS Report is an extension of the Summary QoS Report and segments the information presented in the Summary QoS Report into six additional tables where each table will represent the QoS performance of a given broadband product in a particular geographic area. In addition, the report should include all the general information related to the statistical limitations of the data provided, together with any other caveats relevant to the correct interpretation of the data.

It is proposed that the report would be sub-divided into the following sections:

- a) Statistical Information
- b) Regional QoS Tables
- c) Details on Regional Information
- d) A table listing the Localities associated with each region.
- e) A graphical representation of information listed in (c) above. This can take the form of either a single map highlighting the maps using different colours, or a list of six successive maps, each highlighting a single region
- f) A list of definitions of the QoS parameters
- g) Any other appendices as the ISP may deem necessary

Point (b) above merits further discussion which will ensue in section 4.2.1 below

4.2.1 REGIONAL QoS TABLES

In this section, the ISP will list, for each broadband product seven tables using the format depicted in tables 1 and 2 above. For the purposes of this report, line 8a will be used to indicate the region to which the table belongs.

The sequence of the tables should be as follows:

- Malta and Gozo – (Equivalent to the Summary QoS Report)
- Southern Harbour
- Northern Harbour
- South Eastern
- Western
- Northern
- Gozo and Comino

5. PUBLICATION OF REPORTS

The QoS reports should be easily accessible to the broadband subscribers and end-users. This objective can be reached by the ISPs publishing reports on their respective website. In those cases where subscribers do not have access to the Internet, and therefore no access to the QoS reports, the ISPs should make available the QoS reports, in part or in full as required, to such interested parties.

It is proposed that ISPs should make both reports available on their respective website. Reports should cover those broadband products which are either marketed or which still have active subscribers.

For each product that is actively marketed, a link to the most recent Summary QoS Report should be made available on the same page as the marketing material. A separate link is required to each product listed in the marketing page. The link should be visible and easily identifiable by the subscriber.

In the case of those broadband products to which there are active subscribers but are not offered or marketed, the ISP should include the link of the Summary QoS Report on the same page where the terms and conditions for the broadband product are listed.

A history of both reports should be maintained and should be made easily available on the ISP's website. In the case where broadband packages attract a contract of duration longer than 3 months, the ISP should keep a history of tables to cover, as a minimum, the duration of such contract on a rolling basis.

5.1 TIMING OF PUBLICATION

In line with the Decision, the ISPs are required to measure their QoS information on a quarterly basis. ISPs should then publish their reports following an adequate period of time for data analysis and compilation of the reports. It is hereby proposed that ISPs collect QoS information during a calendar quarter followed by publication of results towards the end of the following month after the closure of the quarter. For the avoidance of doubt, Table 3 below provides a timetable for measurement period and subsequent publication of report.

Table 3

Quarter	Measurement Period	Deadline for publication
1	1 st Jan – 31 st March	Last Monday of April
2	1 st Apr – 30 th June	Last Monday of July
3	1 st July – 30 th September	Last Monday of October
4	1 st October – 31 December	Last Monday of January

In the case of a new broadband product to which no subscribers exist, the first QoS data for that specific product should be included in that report occurring after such date when the QoS data for a

full quarter is measured. In the interim period, the ISP may include estimated QoS information provided that the presented estimates are realistic and that the fact the figures denote estimates rather than the actual figures is clearly indicated.

6. IMPLEMENTATION TIMEFRAMES

It is proposed that the publication of the broadband QoS information in the required formats takes place within eight (8) weeks of publication of the final decision. This period of time is considered adequate by the MCA since the mechanisms to collect and process the data are already in place as evidenced by the broadband QoS reports presented to the MCA by the local ISPs.

The Authority will, as part of the decision notice, indicate the date by which ISPs are expected to comply with the requirements laid down by the proposed decision notice.

7. SUMMARY OF PROPOSALS

This paper puts forward for consultation a proposal intended to harmonise how QoS information is presented by the ISPs to the end-users. The main points of this consultation are listed below.

- a) ISPs will be required to publish their broadband QoS information in two separate reports namely the “Summary QoS Report” and the “Detailed QoS Report”.
- b) The main objective of the “Summary QoS Report” is to convey the information to the subscriber in a clear, concise and comparable manner. This report will take the form of a table. The proposal includes a number of formatting elements.
- c) The “Detailed QoS Report” will augment the Summary QoS Report by including the geographical aspect of the data.
- d) ISPs are to publish their QoS reports on their websites. The Summary QoS Report shall accompany the marketing material of the broadband product, while the Detailed QoS Report should be easily accessible. It is proposed that ISPs shall maintain a history of the QoS Reports available on their website.
- e) A schedule detailing the QoS measurement period and the subsequent publication of the reports is proposed.

8. SUBMISSION OF RESPONSES

In accordance with its obligations under Article 4A of the Malta Communications Authority Act [Cap. 418 of the Laws of Malta], the Authority welcomes written comments and representations from interested parties and stakeholders during the national consultation period which shall run from the **9th January 2015** to the **27th February 2015**.

The Authority appreciates that respondents may provide confidential information in their feedback to this consultation document. This information is to be included in a separate annex and should be clearly marked as confidential. Respondents are also requested to state the reasons why the information should be treated as confidential.

For the sake of openness and transparency, the MCA will publish a list of all respondents to this consultation on its website, up to three days following the deadline for responses. The Authority will take the necessary steps to protect the confidentiality of all such material as soon as it is received at the MCA offices in accordance with the MCA's confidentiality guidelines and procedures³. Respondents are however encouraged to avoid confidential markings wherever possible.

All responses should be submitted to the Authority, in writing by no later than 5:00PM CET on the 27th February 2015 and addressed to:

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Extensions to the consultation deadline will only be permitted in exceptional circumstances and where the Authority deems fit. The MCA reserves the right to grant or refuse any such request at its discretion. Requests for extensions are to be made in writing within the first ten (10) working days of the consultation period.

³ http://www.mca.org.mt/sites/default/files/articles/confidentialityguidelinesFINAL_0.pdf

APPENDIX 1

Referring document: Demographic Review 2010

Definitions and Methodological Notes

Section 6. Classifications pg XVII

Localities are classified into districts according to the Malta Geographical Codes (MGC) as follows:

Southern Harbour – Valletta, Senglea, Cospicua, Haż-Żabbar, Fgura, Floriana, Kalkara, Hał Luqa, Marsa, Paola, Santa Luċija, Hał Tarxien, Xgħajra

Northern Harbour – Hał Qormi, Birkirkara, Gżira, Hamrun, Msida, Pembroke, Tal-Pieta`, St Julian's, San Ġwann, Santa Venera, Tas-Sliema, Swieqi, Ta' Xbiex

South Eastern – Żejtun, Birżebbuġa, Gudja, Hał Għaxaq, Hał Kirkop, Marsaskala, Marsaxlokk, Mqabba, Qrendi, Hał Safi, Żurrieq

Western – Mdina, Haż-Żebbuġ, Siġġiewi, H'Attard, Hał Balzan, Hał Dingli, Iklin, Hał Lija, Rabat, Mtarfa

Northern – Hał Għargħur, Mellieħa, Mgarr, Mosta, Naxxar, St Paul's Bay

Gozo and Comino – Victoria, Fontana, Għajnsielem and Comino, Għarb, Għasri, Ta' Kerċem, Munxar, Nadur, Qala, San Lawrenz, Ta' Sannat, Xagħra, Xewkija, Żebbuġ