International Leased Lines Pricing Review – 2008: Consultation and Proposed Decision

May 2008

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1 INTRODUCTION

Leased Lines constitute an important pre-requisite for the ever-increasing communications demand of modern economies and their inherent information-based societies. These services permit a high-grade communications infrastructure both within a specific country, as well as across neighbouring territories. These communications services are therefore an important input for conducting efficiently business transactions, apart from underpinning the exchange of information of society at large. In the absence of effective competition in the provision of these services, regulation plays an important role in avoiding excessive pricing to end-users, which ultimately results in a positive impact on the economy's competitiveness.

A new regulatory framework for electronic communications networks and services entered into force in Malta in 2004, and requires National Regulatory Authorities (NRAs) to carry out reviews of competition in specific communications markets in order to ensure that regulation remains appropriate in the light of changing market conditions. In its market analysis on Leased Lines[1], the Malta Communications Authority ('MCA' henceforth) delineated a number of distinct relevant markets namely:

- Retail national traditional interface leased lines (minimum set up to, and including 2Mbps).
- Retail international traditional interface leased lines (minimum set up to and including 2Mbps).
- Wholesale terminating segments of leased lines.
- Wholesale national trunk segments of leased lines.
- Wholesale international trunk segments of leased lines.

GO plc ('GO' or 'the Company' henceforth) was designated as having an SMP status in all these markets, and the MCA imposed various retail and wholesale remedies, including cost orientation, price control and access to/and use of specific network facilities on a wholesale level amongst others.

To implement the remedies referenced above, particularly those of cost orientation and price control, the MCA decided to adopt a bottom-up methodology similar to that used for calculating GO's interconnection rates.

Following an extensive consultation process with GO, in February 2008 the MCA published a consultation document entitled 'Local Leased Lines Pricing Review 2008', which featured the proposed prices for local leased lines services. This was followed by

1 See Response to Consultation and Final Decision – "Retail Leased Lines, Wholesale Terminating segments and Wholesale Trunk Segments of Leased Lines (August 2006)"

the publication in April 2008 of a report on consultation and decision on the proposed prices.

In the said consultation document the MCA also notified that it was conducting a further technical consultation with GO and cost modelling exercise on its proposed prices for international leased lines ('IPLCs'), which would consequently be the subject of a public consultative process. The MCA adopted this gradated approach given the inherent interdependencies of IPLCs with other services using the same infrastructure (such as interconnection, local leased lines and IP bandwidth services).

The objective of this document is therefore to put to public consultation the proposed prices for international leased following the finalisation of the technical consultative process with GO on these services.

2 APPROACH USED TO CALCULATE IPLC PRICES

In its Leased Lines Market Analysis, the MCA stated that prices for leased line services should reflect only efficiently incurred costs. In keeping with this objective, the MCA adopted a bottom-up cost modelling approach to calculate leased line prices to be charged by GO.

In theory a bottom-up cost model essentially assumes an efficient operator deploying its network today. In this methodology, the required network elements as well as the resulting operational and capital costs are all modelled from first principles, hence ensuring that only the efficiently incurred costs are taken into account when calculating the price of a given service.

Instead of developing from scratch a bottom-up cost model for international leased lines, the MCA extended the scope of its already existent bottom-up model (BUCM) which was, in turn, developed to calculate fixed-line interconnection rates and consequently modified to incorporate local leased lines. This is because the provision of leased lines and call termination and origination services are characterised by joint and common costs in their use of the core network.

In view of the fact that the objective of the original BUCM was to calculate the efficient cost of fixed-line interconnection services, the project had already focused on the analysis and dimensioning of the switching network elements as these form the bulk of the network elements required for the provision of fixed termination. The extension of the BUCM to incorporate leased lines (including local and IPLCs) involved, amongst others, the following major work streams:

- Analysis of GO's fibre network as well as its ducts, trenches and sub-marine cable;
- Dimensioning the various transmission network elements involved;
- Allocation of the network costs (including fibre, duct and trenches, and the sub-marine cable) across the different services making use of these elements;
- Analysis of the demand volumes by type of service;
- Assessing the efficient level of operating expenditure required.

In line with the distinct relevant wholesale trunk and terminating markets as determined in the Leased Lines Market Analysis, the model was also designed to disaggregate costs in the following general cost segments:

- **Terminating segments** – comprising mainly of the customer premises equipment and underground infrastructure which includes copper, fibre, ducting and trenching

- **Trunk segments** – comprising all elements of the transmission network.

This split in prices is aimed at allowing alternative operators more flexibility in purchasing the required components in a more granular manner.

2.1 SPECIFIC IPLC COMPONENTS: TECHNICAL SCHEMATICS AND CAPACITIES

In the model, the building blocks for the service provisioning of IPLCs were split into 2 main components:

- **Local Leg**, consisting of:
    - **Terminating** segment and
    - **National Trunk** segment
- **International Trunk** segment

The table hereunder depicts the types of IPLCs that were modelled in the BUCM.

Table 1. IPLC Services: Wholesale & Retail

	Wholesale	Retail
Analogue @ 9.6 kb/s	√	√
Digital @ 64kbps	√	√
Digital @ 128kbps	√	√
Digital @ 256kbps	√	√
Digital @ 384kbps	√	√
Digital @ 512kbps	√	√
Digital @ 1024kbps	√	√
Digital @ 2 Mbps	√	√
Digital @ 34 Mbps	√	
Digital @ 155 Mbps (STM-1)	√	

From the above table it can be seen that on the wholesale side this consultative document is also proposing two additional wholesale high-speed services which are currently not offered by GO in its reference offer. This is in line with the access and non-discrimination obligations imposed on GO in the market analysis on leased lines to reflect more closely the self-supply capabilities of the Company. In this regard the market analysis set also an unbounded limit (within technical limitations) to GO's high-capacity wholesale offers that may be mandated by the MCA. Such higher capacity services are considered an essential part of other wholesale operators' requirements for dedicated international capacity and are expected to play a bigger role in the demand for connectivity in the near future.

Figures 1 and 2 hereunder show the generalised technical schemes for the provisioning of international leased lines.

Figure 1 - General Setup for Analogue International Leased Lines

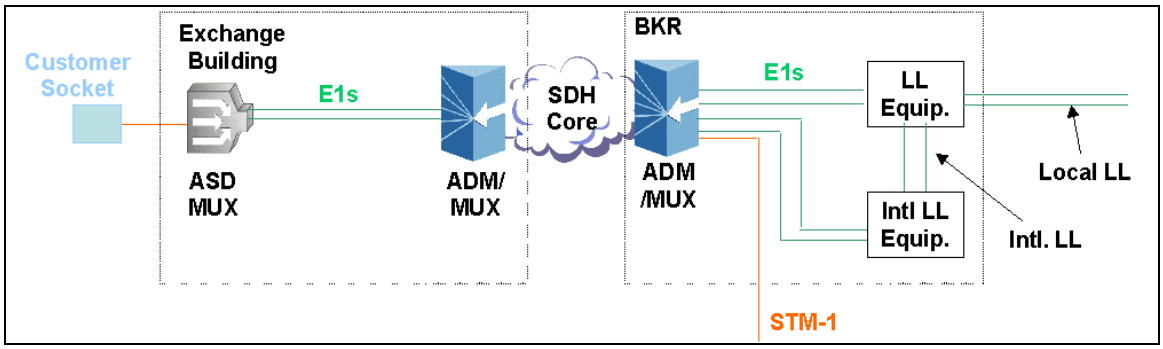
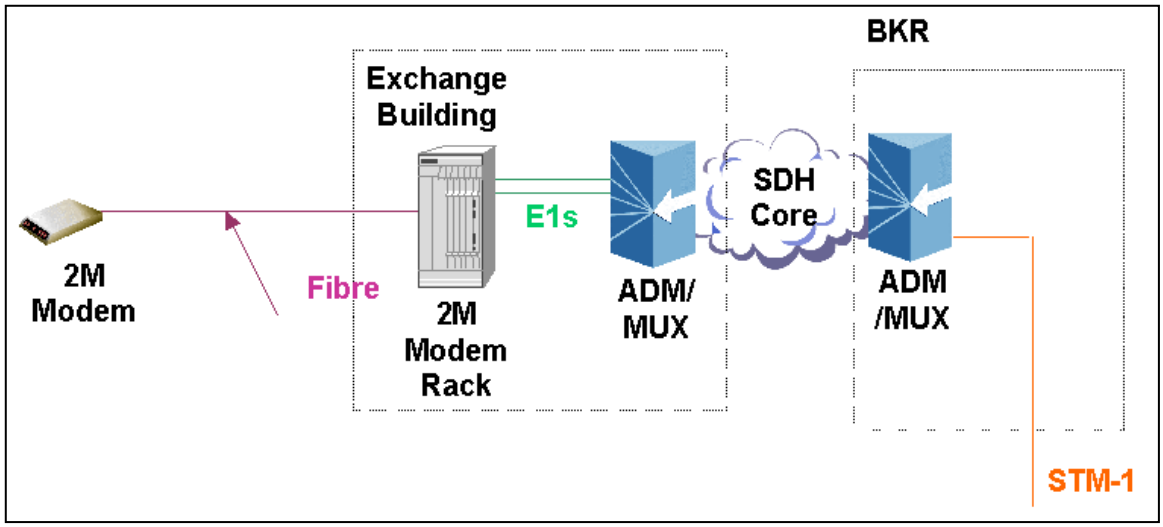


Figure 2 - General Setup for Digital International Leased Lines



In the case of a digital international leased line, the customer premises equipment could be installed with either a modem, a FOX or an ADM. All these permutations were modelled in the BUCM.

The figures above indicate the relevant high-level cost components modelled in the BUCM, namely:

- The local leg of the international leased line;
- The transmission equipment dedicated to international leased lines;
- The submarine cable.

With regards to the local leg of an IPLC, this was considered as a normal local leased line featuring one terminating and one national trunk segments. For this reason the pricing

of the local leg of the IPLC would reflect the applicable portions of the rates published in the MCA decision on local leased of April 2008.

2.2 MODELLING THE COSTS OF IPLCS

The extension of the BUCM to accommodate the calculation of leased lines essentially revolved around the costing and modelling of the cost components presented in Section 2.1. In particular, apart from the dimensioning and the cost allocation of the dedicated transmission equipment needed in the international trunk segment, the BUCM had to model also the attributable cost of the submarine cable usage for IPLCs. To do this the relevant cost of the submarine cable had to be split, basing on capacity-usage, amongst the services that make use of this network component; namely international voice, international leased lines and data/IP-bandwidth related services.

In order to carry out the extension to the BUCM, the MCA collated all the necessary information from GO, as well as conducted various meetings that allowed the Authority to gain a better understanding of the underlying network infrastructure required. The MCA also conducted research on the international leased lines prices currently deployed by other EU Member States.

Following the modelling stage of the project, the MCA provided GO with detailed documentation on this cost modelling exercise, which featured details of the technical dimensioning, direct extracts from the cost model, a detailed description of the attribution methodologies, as well as all the assumptions made in developing and populating the BUCM. On its part, during the said consultation process, GO provided valuable feedback as well as explanations relating to the network elements involved in leased lines service provisioning. The outcome of the BUCM results were therefore the product of several interactions and correspondence between GO and the MCA.

2.3 PRICING OF HIGHER-CAPACITY WHOLESALE LEASED LINES (34MBPS AND STM-1)

As highlighted in Table 1 of Section 2.1, the proposed schedule of regulated wholesale international leased lines comprises those of 34Mbps and STM-1 services. Given the fact that to date there are no such high-speed IPLC's sold by GO to third party wholesale operators, as well as the complexities involved in dimensioning hypothetical volumes of such services (and the effect that hypothetical dimensioning would have on the calculated costs of the actual lower-speed services), the MCA decided to use a set of multiplication factors, based on EU reference rates to extrapolate the modelled 2Mbit price in proportion to its higher-capacity counterparts.

To do this the MCA surveyed the prices[2] of IPLCs in the other European member states as featured in the report compiled by Teligen in 2006, entitled 'Telecoms Price

2 Reference prices refer to IPLCs to a 'near' country

Developments: From 1998-2006'[3]. The MCA limited its reference sample to those countries that reported the prices of the full set of the required service capacities (i.e. 2Mbps, 34Mbps and STM-1). This was done so as to take full account of the relativity between the prices of different capacities offered by each country individually without biasing the sample with countries that do not feature the full price list of the required services.

This effectively resulted in the sample being limited to nine countries shown in Table 2 hereunder. This table shows also multiplication factors of each individual country in relation to its respective 2Mbps service, as well as the prevailing average factor for each specific capacity type.

Table 2. Multiplication factors

Country	2Mbps	34Mbps	155 Mbps
Slovenia	1	4.0	6.3
Lithuania	1	4.3	8.0
Luxembourg	1	4.8	8.2
Italy	1	6.0	12.0
Latvia	1	7.0	14.0
Denmark	1	8.6	25.7
Netherlands	1	11.3	27.3
Estonia	1	8.0	30.0
Average	**1**	**6.7**	**16.4**

3 This report was produced for the European Commission Directorate General of Information Society

3 CURRENT AND PROPOSED IPLC PRICES

3.1 CURRENT INTERNATIONAL LEASED LINE PRICES

Tables 3 and 4 hereunder show the current prices offered by GO for IPLC services. For ease of reference the tables show a complete connection half-way up to Sicily and hence they incorporate also the prevailing charges for the national trunk and terminating segments.

Table 3: Current wholesale IPLC prices including national trunk and terminating segments (Excl. VAT)

Type	Connection Fee		National Trunk & Terminating * (in conjunction with Intl Trunk)		International Trunk **		Total	
	€	MTL	€	MTL	€	MTL	€	MTL
Analogue @ 9.6kb/S (S/D 2w)	559	240	759	326	960	412	1719	738
Digital @ 64kb/S	559	240	1565	672	960	412	2525	1084
Digital @ 128kb/S	559	240	2746	1179	1917	823	4663	2002
Digital @ 256kb/S	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Digital @ 384kb/S	559	240	2746	1179	5754	2470	8500	3649
Digital @ 512kb/S	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Digital @ 1024kb/S	559	240	5884	2526	15341	6586	21225	9112
Digital @ 2048kb/S	559	240	12544	5385	32218	13831	44761	19216
Digital @ 34 Mbps	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Digital @ STM1	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

** n/a under national segments reflects the unavilibilty of offers on the international trunk*

*** Excluding any third party costs that will be incurred to lease and maintain the IPLC*

Table 4: Current retail IPLC prices including national trunk and terminating segments (Excl. VAT)

Type	Connection Fee		National Trunk & Terminating (in conjunction with Intl Trunk)		International Trunk **		Total	
	€	MTL	€	MTL	€	MTL	€	MTL
Analogue @ 9.6kb/S (S/D 2w)	559	240	1104	474	1225	526	2329	1000
Digital @ 64kb/S	559	240	1910	820	1225	526	3135	1346
Digital @ 128kb/S	559	240	3091	1327	2451	1052	5542	2379
Digital @ 256kb/S	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Digital @ 384kb/S	559	240	3091	1327	7352	3156	10443	4483
Digital @ 512kb/S	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Digital @ 1024kb/S	559	240	6229	2674	19604	8416	25833	11090
Digital @ 2048kb/S	559	240	12830	5508	39206	16831	52036	22339

** n/a under national segments reflects the unavilibilty of offers on the international trunk*

*** Excluding any third party costs that will be incurred to lease and maintain the IPLC*

3.2 PROPOSED INTERNATIONAL LEASED LINE PRICES

The proposed prices for IPLCs are depicted in Tables 5 and 6 hereunder. As remarked earlier on, the proposed price list is more granular so as to allow more flexibility in the purchasing of the required connection segments by third parties. With regards to the local segments, as explained earlier, these are consistent with the prices published by the MCA in its decision on local leased lines of April 2008.

Table 5: Proposed wholesale IPLC prices including national trunk and terminating segments (Excl. VAT)

Type	Connection Fee		National Terminating 1 Leg		National Trunk		International Trunk *		Total	
	€	MTL	€	MTL	€	MTL	€	MTL	€	MTL
Analogue @ 9.6kb/S (S/D 2w)	559	240	105	45	615	264	972	417	1692	726
Digital @ 64kb/S	559	240	321	138	631	271	1870	803	2823	1212
Digital @ 128kb/S	559	240	443	190	869	373	1963	843	3274	1406
Digital @ 256kb/S	559	240	443	190	869	373	4661	2001	5972	2564
Digital @ 384kb/S	559	240	443	190	869	373	7857	3373	9169	3936
Digital @ 512kb/S	559	240	443	190	869	373	9247	3970	10559	4533
Digital @ 1024kb/S	559	240	765	329	1500	644	12798	5494	15064	6467
Digital @ 2048kb/S	559	240	1450	623	2842	1220	17926	7696	22218	9538
Digital @ 34 Mbps	559	240	9773	4196	19154	8223	120819	51868	149746	64286
Digital @ STM1	559	240	23839	10234	46720	20057	294698	126514	365257	156805

** Excluding any third party costs that will be incurred to lease and maintain the IPLC*

Table 6: Proposed retail IPLC prices including national trunk and terminating segments (Excl. VAT)

Type	Connection Fee		National Terminating 1 Leg		National Trunk		International Trunk *		Total	
	€	MTL	€	MTL	€	MTL	€	MTL	€	MTL
Analogue @ 9.6kb/S (S/D 2w)	559	240	116	50	682	293	1078	463	1876	805
Digital @ 64kb/S	559	240	356	153	700	301	2074	890	3131	1344
Digital @ 128kb/S	559	240	491	211	964	414	2177	934	3631	1559
Digital @ 256kb/S	559	240	491	211	964	414	5169	2219	6623	2843
Digital @ 384kb/S	559	240	491	211	964	414	8714	3741	10168	4365
Digital @ 512kb/S	559	240	491	211	964	414	10255	4402	11709	5027
Digital @ 1024kb/S	559	240	849	364	1664	714	14193	6093	16706	7172
Digital @ 2048kb/S	559	240	1608	690	3152	1353	19880	8534	24639	10578

** Excluding any third party costs that will be incurred to lease and maintain the IPLC*

The MCA intends to maintain these prices under review by keeping under scrutiny any changes in service take-up and demand patterns that may occur following the deployment of these revised prices, as well as any other developments that may occur on the international sphere. The MCA reserves also the right to revise the total charges of these services following any future changes in the applicable prices of local leased

lines, as these underpin the local terminating and trunk segments of IPLCs, and hence are an integral part of their overall charges.

The MCA is furthermore proposing that the above prices would be made applicable from 1 June 2008.

4 CONSULTATION FRAMEWORK

The MCA invites comments from interested parties regarding this Statement of Proposed Decision. Written representations may be made public by the MCA subject to the MCA's Internal Guidelines on Confidentiality published on 16 December 2004.

The consultation period will run until noon of Wednesday 28th May 2008. Comments should be sent to:

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