

Annex - 2

Decision on Ooredoo's RAIO (Price Terms)

1. Introduction

The Telecommunications Regulatory Authority (the “TRA”) is empowered under the Telecommunications Regulatory Act (the “Act”) to regulate the provision of Access and Interconnection (“A&I”) services which must be offered by public telecommunications licensees in the Sultanate of Oman (the “Sultanate”). In this respect, the Act allows the TRA to develop specific rules and procedures regulating the provision of A&I services in the Sultanate, including rules and procedures relating to the resolution of any disputes arising in connection with the provision of A&I. The powers granted to the TRA in this regard apply (albeit to varying degrees) with respect to both public telecommunications licensees designated with dominance as well as all other public telecommunications licensees.

Over the last few years the telecommunications market in the Sultanate of Oman has been expanding; new players have entered the market, bringing competition and new products and services for customers. The TRA works to ensure the development of competition within this sector to benefit the end customer in Oman.

In order to promote competition and ensure that dominant operators in the Sultanate of Oman treat new entrants fairly, the TRA regulates both retail and wholesale services in the telecommunication sector.

As part of such an important duty, the TRA issued the Access & Interconnect Regulation in April 2016, aimed at ensuring that both Omantel and Ooredoo (being dominant operators) implement the corresponding Reference Access & Interconnect Offers (hereinafter, ‘RAIOs’). The first milestone of this process was materialised with the publication on August 4th, 2016, of the Public Consultation on Omantel’s and Ooredoo’s First Draft RAIOs that were originally submitted to the TRA on 29th May 2016 for its review.

Under Chapter Six of the Act, a Public Telecommunication Services Licensee, who is designated by the TRA as having dominance in a specific public telecommunications market, shall advertise a Reference Offer after the approval of the TRA. The Act provides that if the TRA views that the offered prices and conditions by the dominant licensee as unreasonable or unjustified, it may determine the prices and conditions it deems suitable.

Article 48 of the A&I Regulation requires that *“The First Draft RAIO shall include proposed charges for the Regulated A&I Services subject to the RAIO obligation, and shall be supported with sufficient information such as service cost models and associated documentation, demonstrating the Dominant Operator’s compliance with the pricing related requirements of this Regulation and its Annexes.”*

The A&I Regulation requires that the charges of Regulated A&I Services (with the exception of Broadband Resale Service, National Roaming Service and Mobile Access Service) *“shall be fair, reasonable and based on forward looking long run incremental cost (LRIC)*

of efficient service provision”. Whereas the charges of Broadband Resale Service, National Roaming Service and Mobile Access Service are required to be based on Retail-Minus approach.

The A&I Regulation also states that in reviewing and determining the prices for A&I Services, the TRA may choose to:

- i. *“Use the top-down LRIC model prepared by the Operator after making necessary changes, if required; or*
- ii. *Use both the Operator top-down LRIC and its own bottom-up LRIC models in the manner it deems appropriate; or*
- iii. *Use its own bottom-up LRIC models in case no charge is proposed or no top-down LRIC model is provided by the Operator.”*

Although Ooredoo did include its proposed wholesale charges in its draft RAIO, it did not provide to the TRA the LRIC-based calculations of the charges it proposed, as required by the A&I Regulation. At the same time, Ooredoo proposed in multiple instances the same wholesale charges that had been suggested by Omantel in its draft RAIO. Consequently, in these cases the TRA would reuse the same arguments employed in ‘Omantel’s RAIO Decision’ for Ooredoo, and would keep the same suggested rates for the two dominant operators. This approach is further supported by the A&I Regulation which provides that prices for similar regulated services shall be the same unless operators are able to demonstrate that they face significantly different costs of provision which cannot be avoided.

Since Omantel submitted its Top-Down LRIC model to the TRA (in addition to two RAIO Excel-based models namely ‘Bit Stream Model’ and ‘Costing & Pricing Model for RAIO’) in support of its proposed charges and considering the fact that the TRA had earlier finalized its Bottom-Up LRIC models in 2015 in consultation with the industry, the TRA decided to proceed with approach (ii) above, subject to necessary modifications and update of these models. The TRA properly shared its suggested modifications in Omantel’s RAIO models and its TD-LRIC model which will set the grounds of the top-down related outputs to be considered in this Decision.

Having completed the update of its Bottom-Up LRIC model based on fresh data received from operators and having concluded the review of Omantel’s RAIO models and TD-LRIC model, this Decision outlines TRA’s decision on the wholesale charges to be set in Ooredoo’s RAIO by analysing the rates suggested by Ooredoo, the results of the Top-Down and Bottom-Up LRIC models and, where applicable, international benchmarks.

1.1. Structure of the Decision

This Decision has been structured following the same scheme adopted in Ooredoo’s Draft RAIO.

In each of these sections, the charges of the different services included in Ooredoo's RAIO are assessed in detail.

All sections of this Decision are aligned with the set of services presented in Ooredoo's second draft RAIO. Any changes that may take place on the service definition (e.g. removal or addition of services) would have a direct impact on the structure and outcomes of this Decision.

2. The Review Process

The TRA issued the A&I Regulation (Decision 25/2016) on 17th April 2016. On 18th April 2016, the licensees were informed of the issuance of the said Regulation and Ooredoo was required to submit its First Draft RAIO by 29th May 2016.

On 22nd May 2016, Ooredoo requested the TRA to grant extension of 4 weeks for submitting its First Draft RAIO. The TRA vide its letter dated 24th May 24 2016 directed Ooredoo to submit its First Draft RAIO by the given deadline of 29th May 2016.

Ooredoo, along with Omantel, submitted a joint request to the TRA on 26th May 2016 for extension of deadline to submit the First Draft RAIO till 30th July 2016 in the interest of telecom industry of Oman. On 29th May 2016, the TRA, after considering that the delay in RAIO submission will not be in the interest of telecom industry, wrote separate letters to Ooredoo and Omantel in response to their joint request. The TRA indicated the possible collusion between dominant licensees to delay the RAIOs and directed them to submit their First Draft RAIOs by 29th May 2016.

Ooredoo submitted its First Draft RAIO on 29th May 2016. The TRA, while assessing the compliance of First Draft RAIO with the A&I Regulation, observed that costing and pricing models to support the proposed charges have not been provided by Ooredoo. In addition, Ooredoo's First Draft RAIO was not accompanied with a letter signed by its CEO attesting that it fully meets the minimum scope, content and format requirements of the A&I Regulation which is a requirement of Article 49 of the A&I Regulation. The TRA directed Ooredoo on 30th May 2016 to provide its cost models along with the required attestation by 5th June 2016. Ooredoo submitted its revised First Draft RAIO on 5th June 2016 and indicated that it did not include the wholesale prices for those services not offered by Ooredoo.

2.1. Review of Ooredoo's Proposed Prices in the Draft RAIO

On 7th June 2016, the TRA after observing few deficiencies in Ooredoo's First Draft RAIO requested Ooredoo to provide missing information. It was noted that the charges for Bitstream services was proposed on retail-minus instead of LRIC as required in Annex 3.3 of the A&I Regulation. Ooredoo was required to submit the revised draft RAIO by 14th June 2016.

On 14th June 2016, Ooredoo submitted that it proposed the Bitstream service charge using retail minus approach since it did not have cost input for the service to calculate under Top Down model. Ooredoo also submitted its Excel-based costing model in support of its proposed charges for the First Draft RAIO to the TRA.

2.2. Review of Ooredoo's Cost Model

After reviewing Ooredoo's cost model, the TRA noted in its letter dated 4th August 2016 that the model contains five interconnection services only. For other access and interconnection services, no supporting model was provided to the TRA. It also noted that Ooredoo provided a high-level calculation on FAC basis instead of LRIC, as required by the A&I Regulation. The TRA observed that for the service regulated under retail minus approach, Ooredoo proposed 29% as percentage. Ooredoo was requested to provide the evidences and explanation on the calculation for obtaining this percentage by 14th August 2016.

On 16th August 2016, Ooredoo responded that sufficient timeframe was not given to Ooredoo to prepare its TDLRIC models. Ooredoo again highlighted the issue of lack of opportunity given to it since it was only allowed to comment on methodology and assumptions, and requested the TRA to discuss and validate the assumptions made before applying the BULRIC prices. With regard to retail minus calculation, Ooredoo claimed that the proposed percentage was based on the avoidable cost calculation provided in its costing model. Ooredoo also requested the TRA to allow it to re-submit its revised charges.

On 22nd August 2016, the TRA responded to Ooredoo. The TRA did not agree with Ooredoo's claim that timeframe for submitting the first draft RAIO was not sufficient since the draft regulation was shared with Ooredoo one-year prior the issuance of the A&I Regulation. The TRA noted that Ooredoo has made conflicting statements as at one point it stated that it was given the opportunity to comment on the assumptions and methodology and at the same time requested the TRA to allow it to comment on the assumption. Regarding Ooredoo's request to submit revised RAIO, the TRA noted that since the First Draft RAIO is already under public consultation, Ooredoo's suggestion was not in line with the RAIO review procedures provided in the A&I Regulation.

After completing the review of Ooredoo's proposed charges and related cost model, the TRA shared with Ooredoo its comments on the same on 15th December 2016. In its comments, the TRA noted that the cost model contained only few wholesale services and none of the charges were based on TDLRIC principle as required under the A&I Regulation. Besides this, there was insufficient level of detail in the 'Retail-Minus' calculation to the service level. Ooredoo was requested to provide its replies on these comments by 29th December 2016. The TRA also shared its comments on Ooredoo's proposed RAIO charges with the industry on 18th December 2016¹.

On 3rd January 2017, Ooredoo responded to TRA's comments and referred to the recent increase in royalty fee from 7% to 12% and shared its intention to re-submit

¹ Available at https://www.tra.gov.om/pdf/tra_comments_on_Ooredoo's_proposed_charges.pdf

the charges to reflect the new royalty fee. With regards to TRA's comments on absence of LRIC calculations, Ooredoo claimed that it was not able to produce a top-down model within the timeframe stipulated in the Regulation. Ooredoo also submitted that it has adopted the prices proposed by Omantel in its First Draft RAIO. Regarding insufficient level of detail in its Retail Minus calculation, Ooredoo provided its new calculation and highlighted a mistake in its earlier submission.

On 15th January 2017, the TRA in its response noted the limitation of Ooredoo to submit TDLRIC model at this stage. It was also highlighted to Ooredoo that the TRA will incorporate the new royalty rates in its BULRIC models and Omantel's TD models before using the same for determining the charges and Ooredoo was not required to submit the revised models/charges at this stage. The TRA also noted that Ooredoo has completely modified its methodology for calculation of Retail Minus percentage while no supporting documentation was provided in order to justify the input figures. Resultantly, Ooredoo was notified that the TRA is under no obligation to consider its new calculations.

Ooredoo submitted its view on 31st January 2017 and claimed that it had already provided and justified the inputs figures for retail minus percentages. Ooredoo argued that it is not in a position to offer retail minus 29% for national roaming and Broadband services.

The TRA in its letter dated 7th February 2017 indicated to Ooredoo that it will extract as much information as possible from Ooredoo's financial statements and complement it with data from Omantel or other international benchmarks to obtain the minus percentage.

2.3. Update of TRA's BU-LRIC Models

The TRA initiated the process of developing its BULRIC models for fixed and mobile networks with the assistance of an international consulting firm in 2013. In this regard, the TRA issued its consultation document on BULRIC methodology on 6th November 2013. After getting responses from the stakeholders, the TRA issued its Position Statement on 13th April 2014 and the 'Methodology Document on BULRIC Modelling' was finally issued on 22nd April 2014.

Subsequently, on 24th June 2014, the TRA commenced the consultation process on the BULRIC models (both fixed and mobile) with Ooredoo, Omantel and OBC owing to the confidentiality of the data involved. The TRA, following a transparent approach, shared the draft models, description of models, user manuals and WACC model with the consulting parties. The TRA also arranged a meeting on in August 2014 to provide opportunity to stakeholders to discuss their thoughts, comments and questions on the draft models and supporting documentation. Omantel and, in particular, Ooredoo provided detailed comments and proposed improvements in the models. All these comments were analysed by the TRA and the Position Statement in this regard was issued in January 2015. To make the process fair and transparent, the

TRA shared fully flexible models along with supporting documentations with the stakeholders so that the same can be updated and amended by the parties as and when required.

In reviewing and determining Ooredoo's RAIO charges, the A&I Regulation empowers the TRA to use its BULRIC models. The TRA noted that its fixed BULRIC model used actual data for years 2010-2014 and estimated the data for years 2015-2018, whereas the mobile BULRIC model used actual data for years 2011-2014 and estimated the data for years 2015-2018. Although the models provided the results for year 2015, which is required for setting Ooredoo's RAIO charges, the TRA considered it prudent to update the models with latest data for 2015 so as to capture the actual realities to the extent possible. The details of such updates are provided in Annex C of this Decision.

For such updates, the TRA requested Ooredoo on 3rd August 2016 to provide requested data by 21st August 2016. On 7th August 2016, Ooredoo requested the TRA to grant extension for data collection till mid-September 2016. Ooredoo also raised the issue of lack of opportunity provided to Ooredoo for commenting on 2015 BULRIC model development.

Considering Ooredoo's request, the TRA, on 10th August 2016, granted extension for submitting the requested data till 28th August 2016. The TRA also noted that, contrary to Ooredoo's claim, Ooredoo had provided very detailed comments on the BULRIC models, which fact was also reflected in TRA's Position Statement issued in January 2015.

Having noted the deficiencies in Ooredoo's data submission, the TRA sent an invitation to Ooredoo on 25th August 2016, to have an interactive discussion with TRA's consultant on 1st September 2016 where the issues can be discussed in detail. Ooredoo had previously submitted the data for the update of BULRIC models on 31st August 2016.

2.4. Margin-Squeeze Test

In order to ensure that the applicable RAIO charges do not result in margin squeeze, the TRA also conducted a margin-squeeze test based on Ooredoo's retail prices. With the exception of very few services, all other services passed this test. The details of such services and their implications on the applicable prices are provided in section 3 of this Decision.

2.5. Industry Meetings

After completing the review of Ooredoo's proposed charges along with supporting model, the TRA on 5th March 2017 invited all licensees (including Ooredoo) for meetings to be held on 14th and 15th March 2017. This was to ensure transparency

and fairness of the review process. During these meetings, the TRA briefed the participants about the review process of Ooredoo's proposed RAIO charges and the approach it intends to follow in determining Ooredoo's RAIO charges and invited views of the participants.

2.5.1. Submission from Licensees

During these meetings, all the participants appreciated the transparent approach followed by the TRA throughout the review process and requested that the TRA's draft position on the RAIO charges may be shared by the TRA with the industry for consultation before issuing the final decision. The industry also provided its views on the approach which the TRA intends to follow in determining RAIO charges. Considering the views of the industry and to remain consistent with the requirements of the A&I Regulation, the TRA has amended its approach in determining Ooredoo's RAIO charges which is provided in section 2.6 of this Decision.

During the meeting, Ooredoo questioned the use of BULRIC models by the TRA in setting the RAIO prices as in its views TDLRIC model of Omantel is already available. Ooredoo also indicated that it has not accepted the BULRIC models.

TeO requested that it may be provided with further understanding of calculating the retail-minus and LRIC pricing. TeO also requested the TRA to share the price determination before finalizing the RAIOs. TeO reiterated these points in its letter dated 15th March 2017.

Friendi Mobile and Renna Mobile also requested the draft decision on RAIO prices for consultation. Friendi Mobile and Renna Mobile sought clarity on how the 'minus' in retail-minus formula will be calculated and how this will be used in deriving the wholesale charges. Friendi Mobile and Renna Mobile shared their list of questions and comments vide letter dated 15th March 2017 and 19th March 2017 respectively.

2.5.2. TRA's Views on Licensees' Submissions

The TRA noted the comments of all licensees with regards to transparency of the review process. At the same time, the TRA does not agree with the requests from Ooredoo and Omantel to share TRA's BULRIC models due to following reason:

- i. The Regulation does not require the TRA to share its BULRIC models to be used in reviewing the RAIO charges;
- ii. The aim of this review is Ooredoo's RAIO charges and not to reopen the consultation on TRA's BULRIC models which may unduly delay the RAIO approval process;
- iii. The TRA has not changed the methodology in BULRIC models as compared to the one finalized in 2015 with industry consultation;

- iv. Ooredoo and Omantel, in 2015, have been provided with TRA' BULRIC models along with supporting documentation and user manual to help enable the update and amendments to these models;
- v. The details of updates and modifications by the TRA are provided in Annex C of this Decision, in case the licensees want to implement the same.

The TRA does not agree with Ooredoo's argument with regards to its non-acceptance of BULRIC models. Firstly, the TRA never sought acceptance of its BULRIC models from the licensees as such. In fact, the TRA consulted the licensees and sought their views and comments in improving these models. Secondly, the TRA made a number of amendments to these models based on comments from the licensees (especially Ooredoo) and shared the final models in 2015 on which the TRA did not receive any further comments or concerns from Ooredoo until during the RAIO review process in 2016.

Addressing the query from Friendi Mobile and Renna Mobile as to how the 'minus' in retail-minus formula is calculated, the TRA clarifies that the calculation is based on Omantel's costing information. On the issue of how the discount will be used in deriving the wholesale charges, the TRA notes that such methodology should have been part of Omantel's RAIO as required by the A&I Regulation.

2.6. The Methodology Used

The TRA considers that the charges for A&I services are a significant proportion of end-user retail tariffs and that the setting of such charges at a fair level is not only critical to enhance competition in the sector but at the same time encourage efficient infrastructure investment. The TRA is also conscious of the fact that where charges for A&I services are set at levels that are not based on economic costs, it can send incorrect signals to potential entrants for build/buy decisions. This may result in market entry that leads to wasted investment or may deter entry in markets where competition is actually required.

The TRA also realizes that there is a potential for a dominant licensee (like Ooredoo) to reduce prices for its retail services as compared to the wholesale prices it offers to its competitors which would result in margin squeeze.

The TRA is of the view that the above issues are well addressed by the A&I Regulation which requires that charges for A&I services "*shall be fair, reasonable and based on forward looking long run incremental cost (LRIC) of efficient service provision*". In implementing this, the TRA has decided to "*Use both the Operator top-down LRIC and its own bottom-up LRIC models in the manner it deems appropriate*" [Emphasis added].

Keeping in view the non-availability of TD-LRIC model by Ooredoo and limitation or non-availability of information in Omantel's TD-LRIC model or TRA's BU LRIC

models for some services, the following methodology has been used by the TRA in setting Ooredoo's wholesale charges, unless otherwise stated for a specific charge:

- (i) When the charges have been properly justified by Ooredoo and they are aligned with other references, these are accepted.

If the information presented by Ooredoo is not acceptable or has not been duly justified by Ooredoo:

- (ii) Where the information is available in both Omantel's TDLRIC model and TRA's BULRIC model and they are aligned, the average of both figures is considered.
- (iii) Where the information is available in both Omantel's TDLRIC model and TRA's BULRIC model but they are not aligned, either the results from Omantel's TDLRIC model or TRA's BULRIC model are used, and the reasons for its selection are properly explained.
- (iv) Where the information is available only in Omantel's TDLRIC model but not in TRA's BULRIC model, Omantel's TDLRIC model results are used.
- (v) Where the information is available only in TRA's BULRIC model but not in Omantel's TDLRIC model, TRA's BULRIC model results are used.
- (vi) Where there is no valid information from either the TDLRIC or BULRIC models, and Ooredoo's RAIO figures could be adjusted, these figures were adjusted to correct any potential mistakes that could exist.
- (vii) Where there is no valid information from either the TDLRIC or BULRIC models, and Ooredoo's RAIO figures could not be adjusted, the TRA resorted to international benchmarks in order to come up with a reference that could help it estimate the LRIC and efficient wholesale charge to be applied.
- (viii) In all of the above cases, the TRA also assessed that the applicable wholesale charges do not result in margin squeeze using Ooredoo's retail prices and that they are set on the principle of economic replicability as required by the A&I Regulation. If this was not the case, the values extracted from either of the point (i) to (vii) above have been adjusted.

3. TRA’s Final Determination on Ooredoo’s RAIO Charges

This section includes TRA’s analysis of proposed charges for services included in Ooredoo’s Second Draft RAIO and TRA’s decision on the same. Each of these services has been structured according to the section of the RAIO they belong to.

3.1. Annex B-1 – Fixed Call termination

3.1.1. National call termination (Baiza/Min)

Ooredoo proposed a national call termination tariff for Fixed Interconnection Services of 8.00 baiza/min without any supporting documentation to justify this rate.

At the same time, Ooredoo did not include the level of disaggregation required in Annex 3.1 of the A&I Regulation, which indicates that fixed termination charges should be sub-divided by tandem count and length.

Given the lack of valid information on that respect, the TRA resorted to the BULRIC model and Omantel’s TD-LRIC model to extract fixed termination costs with the proper disaggregation. The results obtained from both sources are presented below:

Tandem count	Bottom-Up	Top-Down	Average
Single	1.57	3.06	2.31
Double	1.59	3.14	2.36
Long	1.64	3.47	2.55

Table 3.1: Fixed termination rates obtained from TRA’s BULRIC model and Omantel’s Top-Down System [Source: TRA]

Given the reasonability of the results obtained from both sources, the TRA considers the average figures above as the most suitable solution for this exercise.

Considering the above, the TRA has decided to set the following charges for the service (alternative (ii) identified in section 2.6):

- ▶ Single: **2.31 baiza/min**
- ▶ Double: **2.36 baiza/min**
- ▶ Long: **2.55 baiza/min**

3.1.2. International call termination (Baiza/Min)

Ooredoo proposed a termination tariff for fixed international calls of 11.00 baiza/min without any supporting documentation to justify this rate.

At the same time, the TRA understands that this service would correspond to the termination in Ooredoo’s network of a call brought from an international operator by the Requesting Party. As such, there would be no use of Ooredoo’s international gateway and the charge for this service should be the same as national termination.

Based on the situation outlined above and considering the comments laid out in section 3.1.1, the TRA has decided to set the same wholesale rates as proposed in section 3.1.1:

- ▶ Single: **2.31 baiza/min**
- ▶ Double: **2.36 baiza/min**
- ▶ Long: **2.55 baiza/min**

3.2. Annex B-2 - Fixed Call Transit

3.2.1. National bilateral transit (Baiza/Min)

Ooredoo proposed a national bilateral transit charge of 5.60 baiza/min without any supporting documentation to justify this rate.

At the same time, Ooredoo did not include the level of disaggregation required in Annex 3.1 of the A&I Regulation, which indicates that call transit charges should be sub-divided by tandem count and length.

The table below outlines the costs for Single and Double modalities of the fixed call transit service as extracted from the TRA’s Bottom-Up LRIC model:

Tandem count	Baiza/min
Single	1.89
Double	1.95

Table 3.2: Fixed transit costs [Source: TRA’s Bottom-Up LRIC Model]

Given that no information on this service could be extracted from Omantel’s TD-LRIC system², the TRA decided to set the charge for the service based on the results of the Bottom-Up LRIC model (alternative (v) identified in section 2.6). That is, the charge of the Single Transit service shall be set at **1.89 baiza/min** and the charge of the Double Transit service shall be set at **1.95 baiza/min**.

² Omantel did not share its mapping between TD-LRIC model and RAIO services for fixed transit and the TRA was unable to find an equivalent service in Omantel’s TD-LRIC model.

3.2.2. International bilateral transit (Baiza/Min)

Ooredoo proposed an international bilateral transit charge of 4.60 baiza/min, without any supporting documentation to justify this rate.

The cost for fixed international bilateral transit as extracted from the TRA's Bottom-Up model amounts to 3.23 baiza/min (no information could be found in Omantel's TD-LRIC model for this service). Considering this result, the TRA has decided to set a charge for the service of **3.23 baiza/min** (alternative (v) identified in section 2.6).

3.2.3. National cascade transit (Baiza/Min)

Ooredoo proposed a national cascade transit charge of 4.30 baiza/min + rate charged by the terminating operator, without any supporting documentation to justify this rate.

Given that the cost of the national component of the service should be equivalent to the one regulated for the national bilateral transit (see section 2.2.1 above) the TRA has decided to set a charge of **1.89 baiza/min + rate charged by the terminating operator** for single transit and **1.95 baiza/min + rate charged by the terminating operator** for double transit.

3.3. Annex B-3 - Mobile Call Termination

3.3.1. National call termination (Baiza/Min)

Ooredoo proposed a national mobile call termination rate of 10.50 baiza/min, without any supporting documentation to justify this rate. The results extracted from Omantel's TD-LRIC indicates mobile termination rate 10.57 baiza/minute.

The TRA notes that wholesale charge for mobile call termination in its BU-LRIC model is 4.0 baiza/min. The TRA also notes that the use of BU-LRIC model for determination of mobile termination rates is being practiced in many jurisdictions. For instance, Body of European Regulators for Electronic Communications (BEREC) in its report "*Termination rates at European level – January 2017*" [BoR (17) 101] indicated that in majority of countries BU-LRIC models are used to calculate mobile termination rates. In fact, these countries are applying the Pure BU-LRIC approach in determining the mobile termination rates. The TRA further notes that it has concluded in its 'Methodology Document on BU-LRIC Modelling' issued in April 2014 that currently there is no strong evidence that Pure LRIC levels are appropriate for the Omani market and thus it established the adoption of LRIC+ cost method for relevant wholesale services.

The adoption of a BU-LRIC model, instead of TD-LRIC model, is also essential to maximise the level of efficiency of the results obtained. Indeed, as laid out by the European Commission in its Recommendation on "Regulatory Treatment of Fixed

and Mobile Termination Rates in the EU” [C(2009) 3359], “*The implementation of a bottom-up model is consistent with the concept of developing a network for an efficient operator whereby an economic/engineering model of an efficient network is constructed using current costs. It reflects the equipment quantity needed rather than that actually provided and it ignores legacy costs*”.

The TRA also notes that by using the BU-LRIC model, the resultant charge of 4.0 baiza/min falls within the range registered in other nearby countries:

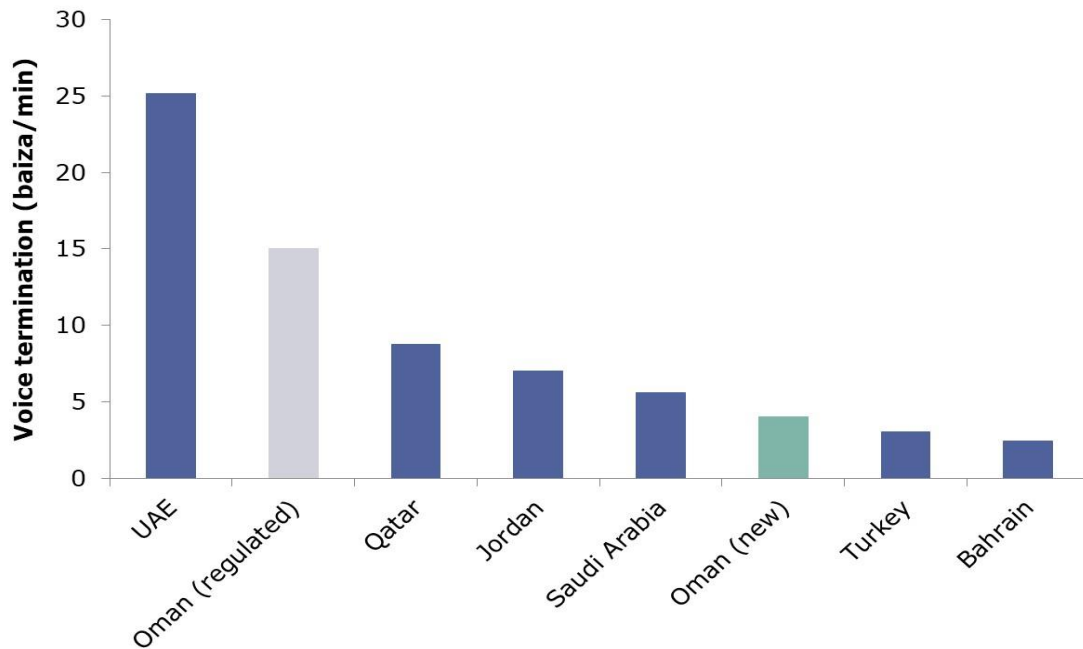


Exhibit 3.1: Comparison of the mobile voice termination rates applicable in other nearby countries [Source: TRA’s internal MTR benchmark]

On the other hand, the results extracted from Omantel’s TD-LRIC (i.e. 10.57 baiza/minute) fell above all the references considered except UAE (which is not a representative figure as it has not been updated the mobile termination rate since 2006).

Considering the above, the TRA has decided to set a mobile termination charge of 4.0 baiza/min (alternative (iii) identified in section 2.6).

At the same time, however, the TRA recognises that the new charge calculated for the service would be 73% below the currently applicable rate of 15 baiza/min. Therefore, in order to avoid any undesired impacts of this regulatory decision (e.g. waterbed effect), a glide path is implemented, leading to the following charges for the service:

- ▶ Till 31st December 2018: **10.0 baiza/min**
- ▶ Till 31st December 2019: **8.0 baiza/min**
- ▶ Till 31st December 2020: **6.0 baiza/min**
- ▶ From 1st January 2021 onwards: **4.0 baiza/min**

3.3.2. International call termination (Baiza/Min)

Ooredoo proposed a mobile termination rate for international calls of 21.60 baiza/min, although it did not provide any valid justifications on how that figure had been obtained.

At the same time, the TRA understands that this service would correspond to the termination in Ooredoo's network of a call brought from an international operator by the Requesting Party. As such, there would be no use of Ooredoo's international gateway and the charge for this service should be the same as national termination.

Based on the situation outlined above and considering the comments laid out in section 3.3.1, the TRA has decided to set the following rates (obtained using alternative (ii) identified in section 2.6):

- ▶ Till 31st December 2018: **10.0 baiza/min**
- ▶ Till 31st December 2019: **8.0 baiza/min**
- ▶ Till 31st December 2020: **6.0 baiza/min**
- ▶ From 1st January 2021 onwards: **4.0 baiza/min**

3.3.3. SMS termination (Baiza/SMS)

Ooredoo proposed a SMS termination tariff of 0.30 baiza/SMS, without any supporting documentation to justify this rate.

Alternatively, the TRA has decided to use the average of the results extracted from its own Bottom-Up model (0.59 baiza/SMS) and Omantel's TD-LRIC system (0.88 baiza/SMS), leading to an applicable charge for the service of **0.74 baiza/SMS** (alternative (ii) identified in section 2.6).

3.3.4. MMS termination (Baiza/MMS)

Ooredoo proposed a MMS termination rate for Mobile Interconnection Services of 6.64 baiza/MMS, which was extracted from Omantel's draft reference offer.

Alternatively, the TRA has decided to use the average of the results extracted from its Bottom-Up model (0.78 baiza/MMS) and the TD-LRIC system (7.26 baiza/MMS), leading to an applicable wholesale charge of **4.02 baiza/MMS** for the service (alternative (ii) identified in section 2.6).

3.4. ANNEX B-4.1 - Mobile Call by Call Carrier Selection

3.4.1. Setup Fee - Mobile Call by Call Carrier selection – NRC

Ooredoo proposed a setup fee for Mobile Call-by-Call Carrier Selection of 21,000 OMR without any supporting documentation to justify this rate.

As detailed in Omantel's RAIO Decision, the applicable wholesale charge for the service is **733 OMR**.

3.4.2. Call origination (Baiza/Min)

Ooredoo proposed a mobile call origination charge of 11.00 baiza/min without any supporting documentation to justify this rate.

Alternatively, the TRA decided to use the same ratio between origination and termination charges as for the equivalent fixed services. Extracting those charges from Omantel's RAIO Decision, the TRA comes up with a ratio of 1.048.

Applying this ratio to the termination charge of 4.00 baiza/min determined in section 3.3.1, the TRA comes up with an applicable charge of 4.20 baiza/min for this service.

As for voice termination, a glide path leads to the following charges for the service:

- ▶ Till 31st December 2018: **10.5 baiza/min**
- ▶ Till 31st December 2019: **8.4 baiza/min**
- ▶ Till 31st December 2020: **6.3 baiza/min**
- ▶ From 1st January 2021 onwards: **4.2 baiza/min**

3.5. ANNEX B-4.2 - Mobile Carrier Pre Selection

3.5.1. CPS Set-up Fee (just one-time payment)

Refer to section 3.4.1. Same considerations apply here. The applicable wholesale charge is **733 OMR** for the service.

3.5.2. Change fee per subscriber (OMR/subscriber)

Ooredoo proposed a change fee per subscriber for Mobile Carrier Pre Selection of 72 OMR, which it extracted from Omantel's draft reference offer.

As detailed in Omantel's RAIO Decision, the applicable wholesale charge for the service is **2 OMR**.

3.5.3. Call origination (Baiza/Min)

Refer to section 3.4.2. Same considerations apply here. The applicable wholesale charges are

- ▶ Till 31st December 2018: **10.5 baiza/min**
- ▶ Till 31st December 2019: **8.4 baiza/min**
- ▶ Till 31st December 2020: **6.3 baiza/min**
- ▶ From 1st January 2021 onwards: **4.2 baiza/min**

3.6. ANNEX B-5.1 - Wholesale Broadband - Wholesale Line Rental

3.6.1. Wholesale Line Rental charges (Initial Service setup fee) (NRC)

Ooredoo proposed an initial service setup fee (for a block of 10 customers) for Wholesale Line Rental of 4,047 OMR, which it extracted from Omantel's draft reference offer. This is equivalent to 404.70 OMR per customer.

As detailed in Omantel's RAIO Decision, the wholesale charge for the service is **87.40 OMR per customer**.

3.6.2. Wholesale Line Rental charges per Customer line charges (NRC)

Ooredoo proposed a NRC per customer line for Wholesale Line Rental of 72 OMR, which it extracted from Omantel's draft reference offer.

As detailed in Omantel's RAIO Decision, the applicable wholesale charge for the service is **2 OMR**.

3.6.3. Wholesale Line Rental charges per Customer line charges (MRC)

Ooredoo proposed a monthly charge per customer for Wholesale Line Rental of 18.55 OMR/line/month, which it extracted from Omantel's draft reference offer.

As indicated in Omantel's RAIO Decision, the applicable wholesale charge for this service should be set based on a retail minus approach, in order to allow the replicability of single-play voice-only retail tariffs. Using the minus of 32% calculated from Omantel's Top-Down system and given that Ooredoo offers a fixed analogue line for voice services at 3.5 OMR/month to its business customers, the TRA comes up with an applicable wholesale rate of **2.38 OMR/line/month** (alternative (viii) identified in section 2.6).

3.6.4. Voice Call Charges – National Voice Calls to Ooredoo

Ooredoo proposed a charge for national voice calls to Ooredoo of (in baiza/min):

$$\text{Call origination} + \text{Call termination charges of the other operator} + \text{Admin} + \text{Royalty} + \text{Tax}$$

The TRA does not see the applicability of an additional Admin, Royalty and Tax charge to this service as the royalty fee and taxes would already be included in the call origination and termination tariffs, and adding them to the calculation would result in double counting of these terms. Further, the applicability of an additional Admin charge to this service does not represent a common international practice in the regulation of the service.

Consequently, the TRA decided that the following approach is to be adopted in the definition of the applicable wholesale charge for the service:

$$\text{Call origination} + \text{Call termination charges of the other operator}$$

As indicated in Omantel's RAIO Decision, the applicable wholesale charge for fixed origination is 2.42 baiza/min.

At the same time, Ooredoo is expected to explain in its Final Draft RAIO how the termination party charges will be determined and justified to the Requesting Party.

3.6.5. Voice Call Charges – International Calls

Ooredoo proposed a charge for international voice calls of (in baiza/min)

$$\text{Call origination} + \text{International Leg} + \text{The termination party charges} + \text{Admin} + \text{Royalty} + \text{Tax}$$

Same comments as for the national voice calls service discussed in section 3.6.4 above apply with regards to the treatment of the admin, royalty and tax components of the formula.

Consequently, the TRA decided that the following approach is to be adopted in the definition of the applicable wholesale charge for the service:

$$\text{Call origination} + \text{International Leg} + \text{The termination party charges}$$

As indicated in Omantel's RAIO Decision, the applicable wholesale charge for fixed origination is 2.42 baiza/min.

At the same time, Ooredoo is expected to explain in its Final Draft RAIO how the international leg charges and termination party charges will be determined and justified to the Requesting Party.

3.7. ANNEX B-5.2a - Wholesale Broadband - Bitstream Layer 2

3.7.1. NRC Charges for STM-1

Ooredoo proposed a NRC for the setup of an STM-1 link for Bitstream Layer 2 services of 5,534 OMR, which it extracted from Omantel's draft reference offer.

As detailed in Omantel's RAIO Decision, the applicable wholesale charge for the service is **1,421 OMR**.

3.7.2. MRC Charges for STM-1

Ooredoo proposed a monthly charge for a STM-1 link for Bitstream Layer 2 services of 19,259 OMR, which it extracted from Omantel's draft reference offer.

The TRA notes that Ooredoo considered Omantel's proposed charge for a STM1 on the Northern Ring, which is the ring with the highest associated cost. However, the TRA does not see a valid reason to solely consider that particular charge. Extracting the applicable charges from Omantel's RAIO Decision for the four different rings, the TRA comes up with applicable wholesale charges for this service of **8,956 OMR/month** for a STM-1 on the Metro Ring, **11,913 OMR/month** for a STM-1 on the Northern Ring, **6,752 OMR/month** for a STM-1 on the Eastern Ring and **8,948 OMR/month** for a STM-1 on the Southern Ring.

3.7.3. NRC Link fee per Customer

Ooredoo proposed an initial link fee per customer for Bitstream layer 2 services of 72 OMR, which it extracted from Omantel's draft reference offer.

As detailed in Omantel's RAIO Decision, the applicable wholesale charge for the service is **15 OMR**.

3.7.4. MRC Link fee per Customer

Ooredoo proposed a monthly link fee per customer for Bitstream Layer 2 services of 12.41 OMR, which it extracted from Omantel's draft reference offer.

As indicated in Omantel's RAIO Decision, this charge was accepted and the TRA agreed to set a regulated fee for the service of **12.41 OMR/month**.

3.7.5. NRC charge Per MSAN Charges per Slot

Refer to section 3.7.3. Same considerations apply here. The applicable wholesale charge is **15 OMR**.

3.7.6. MRC charge Per MSAN Charges per Slot

Ooredoo proposed a monthly charge per MSAN slot for Bitstream Layer 2 services of 138 OMR, which it extracted from Omantel's draft reference offer.

As indicated in Omantel's RAIO Decision, this charge was accepted and the TRA agreed to set a regulated fee for the service of **138 OMR/month**.

3.7.7. NRC charge Per ADSL card per MSAN

The charge per ADSL card proposed by Ooredoo for the initial setup of Bitstream Layer 2 services in a MSAN amounts to 1,857 OMR, which it extracted from Omantel's draft reference offer.

As indicated in Omantel's RAIO Decision, the applicable wholesale charge for this service is **1,217 OMR**.

The TRA also notes that the approach used by Ooredoo of requiring the requesting party to purchase the line card is subject to approval by the TRA.

3.8. ANNEX B-5.2b - Wholesale Broadband - Bitstream Layer 3

3.8.1. NRC Charges for STM-1

Refer to section 3.7.1. Same considerations apply here. The applicable wholesale charge is **1,421 OMR**.

3.8.2. MRC Charges for STM-1

Refer to section 3.7.2. Same considerations apply here. The applicable wholesale charge is **8,956 OMR/month** for a STM-1 on the Metro Ring, **11,913 OMR/month** for a STM-1 on the Northern Ring, **6,752 OMR/month** for a STM-1 on the Eastern Ring and **8,948 OMR/month** for a STM-1 on the Southern Ring.

3.8.3. NRC Link fee per Customer

Refer to section 3.7.3. Same considerations apply here. The applicable wholesale charge is **15 OMR**.

3.8.4. MRC Link fee per Customer

Refer to section 3.7.4. Same considerations apply here. The applicable wholesale charge is **12.41 OMR/month**.

3.8.5. NRC charge Per MSAN Charges per Slot

Refer to section 3.7.5. Same considerations apply here. The applicable wholesale charge is **15 OMR**.

3.8.6. MRC charge Per MSAN Charges per Slot

Refer to section 3.7.6. Same considerations apply here. The applicable wholesale charge is **138 OMR/month**.

3.8.7. NRC charge Per ADSL card per MSAN

Refer to section 3.7.7. Same considerations apply here. The applicable wholesale charge is **1,217 OMR**.

The TRA also notes that the approach used by Ooredoo of requiring the requesting party to purchase the line card is subject to approval by the TRA.

3.9. ANNEX B-5.3 - Wholesale Broadband - Wholesale Transmission

3.9.1. Terrestrial Link Within exchange area (64 kbit/s) – NRC

Ooredoo proposed a NRC for a 64kb/s terrestrial link within the exchange area of 50 OMR without any supporting documentation to justify this rate.

Despite the lack of supporting documentation provided by Ooredoo, the TRA has been able to verify that the charge suggested by Ooredoo is within the lower range of the figures extracted from other international references, as outlined below:

Country	Charge in OMR
Mexico	23.57
Portugal	206.16
Spain	196.24
Greece	181.58
Average	151.89

Table 3.3: International benchmark on NRC for a 64kb/s terrestrial link for wholesale transmission [Source: TRA’s benchmark, see Annex B]

Consequently, the TRA agrees with Ooredoo on an applicable charge of **50 OMR** for the service (alternative (i) identified in section 2.6).

3.9.2. Terrestrial Link 0-100 km (64 kbit/s) – NRC

Refer to section 3.9.1. Same considerations apply here. The applicable wholesale charge is **50 OMR**, obtained using alternative (i) identified in section 2.6.

3.9.3. Terrestrial Link 101-300km (64 kbit/s) – NRC

Refer to section 3.9.1. Same considerations apply here. The applicable wholesale charge is **50 OMR**, obtained using alternative (i) identified in section 2.6.

3.9.4. Terrestrial Link 301-400km (64 kbit/s) – NRC

Refer to section 3.9.1. Same considerations apply here. The applicable wholesale charge is **50 OMR**, obtained using alternative (i) identified in section 2.6.

3.9.5. Terrestrial Link >400km (64 kbit/s) – NRC

Refer to section 3.9.1. Same considerations apply here. The applicable wholesale charge is **50 OMR**, obtained using alternative (i) identified in section 2.6.

3.9.6. Terrestrial Link Within exchange premises (2 Mbit/s) – NRC

Ooredoo proposed a NRC for a 2Mb/s terrestrial link within the exchange premises of 60 OMR without any supporting documentation to justify this rate.

Given the reasonability of this charge compared to the equivalent ‘within exchange area’ service, the TRA agrees with Ooredoo on an applicable charge of **60 OMR** for the service (alternative (i) identified in section 2.6).

3.9.7. Terrestrial Link Within exchange area (2 Mbit/s) – NRC

Ooredoo proposed a NRC for a 2Mb/s terrestrial link within the exchange area of 100 OMR, which it extracted from Omantel’s draft reference offer.

As detailed in Omantel’s RAIO Decision, this charge was accepted and the TRA agreed to set a regulated fee for the service of **100 OMR**.

3.9.8. Terrestrial Link 0-100 km (2 Mbit/s) – NRC

Refer to section 3.9.7. Same considerations apply here. The applicable wholesale charge is **100 OMR**.

3.9.9. Terrestrial Link 101-300 km (2 Mbit/s) – NRC

Refer to section 3.9.7. Same considerations apply here. The applicable wholesale charge is **100 OMR**.

3.9.10. Terrestrial Link 301-400km (2 Mbit/s) – NRC

Refer to section 3.9.7. Same considerations apply here. The applicable wholesale charge is **100 OMR**.

3.9.11. Terrestrial Link >400km (2 Mbit/s) – NRC

Refer to section 3.9.7. Same considerations apply here. The applicable wholesale charge is **100 OMR**.

3.9.12. Terrestrial Link Within exchange premises (34 Mbit/s) – NRC

Ooredoo proposed a NRC for a 34Mb/s terrestrial link within the exchange premises of 200 OMR, which it extracted from Omantel's draft reference offer.

As detailed in Omantel's RAIO Decision, this charge was accepted and the TRA agreed to set a regulated fee for the service of **200 OMR**.

3.9.13. Terrestrial Link 3km rental per local tail (34 Mbit/s) – NRC

Refer to section 3.9.12. Same considerations apply here. The applicable wholesale charge is **200 OMR**.

3.9.14. Terrestrial Link <= 50 km (34 Mbit/s) – NRC

Refer to section 3.9.12. Same considerations apply here. The applicable wholesale charge is **200 OMR**.

3.9.15. Terrestrial Link <=100 km (34 Mbit/s) – NRC

Refer to section 3.9.12. Same considerations apply here. The applicable wholesale charge is **200 OMR**.

3.9.16. Terrestrial Link <=300 km (34 Mbit/s) – NRC

Refer to section 3.9.12. Same considerations apply here. The applicable wholesale charge is **200 OMR**.

3.9.17. Terrestrial Link <=700 km (34 Mbit/s) – NRC

Refer to section 3.9.12. Same considerations apply here. The applicable wholesale charge is **200 OMR**.

3.9.18. Terrestrial Link <=1000 km (34 Mbit/s) – NRC

Refer to section 3.9.12. Same considerations apply here. The applicable wholesale charge is **200 OMR**.

3.9.19. Terrestrial Link Within exchange premises (155 Mbit/s) – NRC

Ooredoo proposed a NRC for a 155Mb/s terrestrial link within the exchange premises of 200 OMR, which it extracted from Omantel's draft reference offer.

As detailed in Omantel's RAIO Decision, this charge was accepted and the TRA agreed to set a regulated fee for the service of **200 OMR**.

3.9.20. Terrestrial Link 3km rental per local tail (155 Mbit/s) – NRC

Refer to section 3.9.19. Same considerations apply here. The applicable wholesale charge is **200 OMR**.

3.9.21. Terrestrial Link <= 50 km (155 Mbit/s) – NRC

Refer to section 3.9.19. Same considerations apply here. The applicable wholesale charge is **200 OMR**.

3.9.22. Terrestrial Link <=100 km (155 Mbit/s) – NRC

Refer to section 3.9.19. Same considerations apply here. The applicable wholesale charge is **200 OMR**.

3.9.23. Terrestrial Link <=300 km (155 Mbit/s) – NRC

Refer to section 3.9.19. Same considerations apply here. The applicable wholesale charge is **200 OMR**.

3.9.24. Terrestrial Link <=700 km (155 Mbit/s) – NRC

Refer to section 3.9.19. Same considerations apply here. The applicable wholesale charge is **200 OMR**.

3.9.25. Terrestrial Link <=1000 km (155 Mbit/s) – NRC

Refer to section 3.9.19. Same considerations apply here. The applicable wholesale charge is **200 OMR**.

3.9.26. Terrestrial Links – MRC

Ooredoo proposed different wholesale charges for terrestrial links based on their capacity and length.

Specifically, the table below outlines the charges proposed by Ooredoo for the 64kbps and 2Mbps links:

Capacity	Within exchange premises	Within exchange area	0-100 km	101-300 km	301-400 km	>400 km
64 kb/s	-	90	130	190	250	325
2 Mb/s	80	270	455	655	875	1,138

Table 3.4: Ooredoo’s proposed monthly charges for 64 kb/s and 2 Mb/s terrestrial links [Source: Ooredoo]

At the same time, the table below outlines its suggested charges for the 34Mbps and 155Mbps links:

Capacity	Within exchange premises	3km rental per local tail	<=50km	<=100km	<=300km	<=700km	<=1000km
34 Mb/s	1,130	1,404	825	884	1,119	2,055	2,422
155 Mb/s	2,719	2,199	2,358	2,417	2,652	4,449	4,816

Table 3.5: Ooredoo's proposed monthly charges for 34 Mb/s and 155 Mb/s terrestrial links [Source: Ooredoo]

However, Ooredoo failed to provide any valid evidence to support the calculation of these figures.

Alternatively, the costs of the same services obtained from the BULRIC model are presented below:

Capacity	Within exchange premises	Within exchange area	0-100 km	101-300 km	301-400 km	>400 km
64 kb/s	-	0.61	1.01	1.44	2.08	2.29
2 Mb/s	18.73	19.41	32.38	46.03	66.50	73.32

Table 3.6: Results from the BULRIC model for 64 kb/s and 2 Mb/s terrestrial links for transmission [Source: TRA]

Capacity	Within exchange premises	3km rental per local tail	<=50km	<=100km	<=300km	<=700km	<=1000km
34 Mb/s	35.50	42.47	151.52	209.53	499.58	1,195.69	2,007.82
155 Mb/s	161.86	193.59	690.77	955.22	2,277.49	5,450.94	9,153.30

Table 3.7: Results from the BULRIC model for 34 Mb/s and 155 Mb/s terrestrial links for transmission [Source: TRA]

Considering the charges presented by Ooredoo and the results from the TRA's BULRIC model, the Authority has analysed the most suitable approach to be followed for each of the capacity/distance combinations for terrestrial links:

- As indicated in Omantel's RAIO Decision, the applicable wholesale charges for 2 Mb/s terrestrial links are set as presented below:

Service (OMR/month)	Within exchange	0-100 km	101-300 km	301-400 km	>400 km
2 Mb/s	192	296	450	605	799

Table 3.8: Applicable wholesale charges in Omantel’s RAIO for the trunk segment of 2 Mb/s terrestrial links [Source: TRA]

The TRA considers that the same charges should apply for Ooredoo.

Ooredoo however included an additional sub-service, ‘within the exchange area’, in its reference offer. The TRA has used the ratio registered between both services’ costs from the Bottom-Up model (1.04) to extract the applicable charge for this service, which is set at **199 OMR/month**.

- In order to extract the monthly charge applicable for the 64kb/s terrestrial link within the exchange area the TRA recognises that using the ratio between the charges presented by Ooredoo for the 64kbps and 2Mbps lines (3.00) is a reasonable proxy and is at the same time aligned with that extracted from other international references:

Country	Ratio 2Mbps/64kbps charge
Ireland	2.96
Greece	1.66
Spain	3.27
Portugal	1.86
Average	2.44

Table 3.9: Ratio between the charge for a 34Mbps terrestrial link within the exchange and a 2Mbps link within the exchange [Source: TRA’s benchmark, see Annex B]

By applying this ratio of 3.00 to the 2Mbps charge ‘within the exchange area’ determined in point 1, the TRA comes up with an applicable wholesale rate for the service of **66 OMR/month**.

- The costs of 64 kb/s links for all distances are obtained by applying the ratio of 3.00 obtained in the ‘within the exchange area’ case (see point 2 above) to each 2 Mb/s link. Given the impossibility to perform reasonable comparisons with other international references (due mainly to differences in the distance thresholds considered), the TRA considers this solution as the most suitable for this exercise.
- As indicated in Omantel’s RAIO Decision, the applicable wholesale charges for 34 Mb/s and 155 Mb/s terrestrial links are set as presented below:

Service (OMR/month)	Within exchange	<100 km	101-300 km	301-400 km	>400 km
34 Mb/s	1,316	1,334	1,410	1,708	1,826
155 Mb/s	2,313	2,331	2,407	2,981	3,098

Table 3.10: Applicable wholesale charges in Omantel's RAIO for the trunk segment of 34 Mb/s and 155 Mb/s terrestrial links [Source: TRA]

The TRA considers that the same charges should apply for Ooredoo. However, it notes that the structure adopted by Ooredoo in its reference offer differs from that of Omantel's, as it considers different distance thresholds. In order to retrieve similar charges for both operators, the TRA decided to scale the charges presented in Table 3.10 using Ooredoo's charges presented in Table 3.5, as the cost ratios between distances have been deemed reasonable by the TRA.

- Given that the distance threshold '<100km' is common for Ooredoo and Omantel, this distance has been taken as a reference from which the following ratios have been calculated:

Ratio	<=50k m	<=100k m
34 Mb/s	0.93	1.00
155 Mb/s	0.98	1.00

Table 3.11: Scaling ratios for terrestrial links shorter than 50km extracted from Ooredoo's proposed charges [Source: TRA]

Applying these ratios to the wholesale charges for 34 Mb/s and 155 Mb/s terrestrial links shorter than 100 km, the applicable charges for links shorter than 50 km are obtained.

- Given that the distance threshold '<300 km' is common for Ooredoo and Omantel, this distance has been taken as a reference from which the following ratios have been calculated:

Ratio	<=300k m	<=700k m	<=1000k m
34 Mb/s	1.00	1.84	2.16
155 Mb/s	1.00	1.68	1.82

Table 3.12: Scaling ratios for terrestrial links shorter than 700km and 1000km extracted from Ooredoo's proposed charges [Source: TRA]

Applying these ratios to the wholesale charges for 34 Mb/s and 155 Mb/s terrestrial links shorter than 300 km, the applicable charges for links shorter than 700 km and 1000 km are obtained.

7. With regards to the 34 Mb/s and 155 Mb/s 3km rental per local tail, the TRA observes that the results for the service stemming from its Bottom-Up model are in both cases 1.20 times higher than for the equivalent service within the exchange premises. Applying this ratio to the applicable charge for the ‘within the exchange premises’ services, the TRA comes up with an applicable fee of **1,574 OMR/month** for 34 Mbps and **2,766 OMR/month** for 155 Mbps.

Using the combination of the points above, the TRA comes up with the following applicable wholesale charges for wholesale transmission using 64 kb/s and 2 Mb/s terrestrial links:

Capacity	Within exchange premises	Within exchange area	0-100 km	101-300 km	301-400 km	>400 km
64 kb/s	-	66	99	150	202	266
2 Mb/s	192	199	296	450	605	799

Table 3.13: Applicable wholesale charges in Ooredoo’s RAI0 for 64 kb/s and 2 Mb/s terrestrial links [Source: TRA]

At the same time, the table below outlines the applicable wholesale charges for 34Mbps and 155Mbps terrestrial links:

Capacity	Within exchange premises	3km rental per local tail	<=50km	<=100km	<=300km	<=700km	<=1000km
34 Mb/s	1,316	1,574	1,245	1,334	1,410	2,589	3,051
155 Mb/s	2,313	2,766	2,275	2,331	2,407	4,037	4,370

Table 3.14: Applicable wholesale charges in Ooredoo’s RAI0 for 34 Mb/s and 155 Mb/s terrestrial links [Source: TRA]

3.10. ANNEX B-5.4 - Wholesale Broadband - Broadband Resale Service

3.10.1. Wholesale Broadband - Broadband Resale Service

The charges for internet broadband resale services are calculated on the basis of the retail-minus pricing methodology, as indicated in the Access and Interconnection Regulation. Ooredoo proposed a minus of 29% but later indicated that it had wrongly calculated this figure.

Given that the information provided by Ooredoo does not allow the TRA to perform a retail minus calculation in compliance with the A&I regulation (e.g. it is not possible to reach the prepaid/post-paid disaggregation as mandated), the retail minus discount has been adjusted by the TRA using information from Omantel's Top-Down system and following the methodology laid out in the Access and Interconnection Regulation. As described in Annex 4 of the A&I Regulation, the discount (minus) is calculated as:

$$Discount = \left(1 - \frac{\text{avoidable cost per subscriber}}{\text{average revenue per retail subscriber}} \right)$$

As stated in article 2.1 (iii) of the same Annex 4 for Internet Broadband Resale Services, the average revenue per retail subscriber shall take account of all retail broadband subscribers served by the Providing Party. The total annual retail revenues were calculated from Omantel's Top-Down system taking account of line rental, connections and data usage. As per Article 2.2 of Annex 4 of the A&I Regulation, the calculation has excluded any services not related to the services that are provided to the Requesting Party, such as anti-spam services or mailboxes. Using the total number of broadband subscribers, the average revenue per retail subscriber was finally obtained.

As stated in Article 2.3 of Annex 4 of the A&I Regulation, avoidable costs shall be calculated on a per subscriber basis for the past year. These shall be based on the costs incurred by the Providing Party and shall take account only of the subscribers included in calculation of the average revenue per retail subscriber calculations. The avoidable costs were calculated for each service and include costs components such as customer acquisition, sales, distribution, marketing, billing and customer care. Using the total number of broadband subscribers, the avoidable cost per retail subscriber was obtained.

Finally, the retail minus discount was calculated as per the formula mentioned above.

Using the adjusted retail minus calculation, the TRA comes up with a minus of **21%** (or equivalently, a discount of 79%) for Internet Broadband Resale services in the consumer segment and **17%** (or equivalently, a discount of 83%) for Internet Broadband Resale services in the corporate segment.

The TRA notes that the minus indicated in this Decision are a minimum and could be renegotiated between operators upon contract agreement subject to non-discrimination obligation.

This discount shall be used to calculate the applicable wholesale unit prices in accordance with the formula below:

$$\text{Wholesale unit price} = \text{average retail revenue per unit} \times \text{discount}$$

The average retail revenue per unit shall be calculated on a quarterly backward-looking basis. For each retail broadband service, there shall be a corresponding Broadband Resale Service. For each retail service, the Providing Party shall calculate an average revenue per unit (per line, per Mb). This shall take account of retail promotions including discounts and special offers. This shall be done in an objective and transparent way. The calculation of average revenue per unit shall be specific to each retail tariff plan.

As stated in the A&I Regulation, the calculation of wholesale prices shall be updated on a quarterly basis and does not need to be included in the RAIO, although the detailed methodology for calculating the prices for wholesale services shall be included and shall be subject to approval by the TRA. Ooredoo is, therefore, required to include a detailed methodology for calculating the prices for wholesale services in its Final Draft RAIO, after discussions and agreements with the licensees, for approval of the TRA. In case the agreement is not reached with the licensees, Ooredoo shall submit its proposed methodology for calculating the prices for wholesale services in its Final Draft RAIO, along with dissenting views of concerned licensees and Ooredoo's comments on such views.

3.11. ANNEX B-6 - Wholesale Trunk Segments of Leased lines

3.11.1. Terrestrial Link Within exchange area (64 kbit/s) – NRC

Refer to section 3.9.1. Same considerations apply here. The applicable wholesale charge is **50 OMR**.

3.11.2. Terrestrial Link 0-100 km (64 kbit/s) – NRC

Refer to section 0. Same considerations apply here. The applicable wholesale charge is **50 OMR**.

3.11.3. Terrestrial Link 101-300km (64 kbit/s) – NRC

Refer to section 3.9.3. Same considerations apply here. The applicable wholesale charge is **50 OMR**.

3.11.4. Terrestrial Link 301-400km (64 kbit/s) – NRC

Refer to section 3.9.4. Same considerations apply here. The applicable wholesale charge is **50 OMR**.

3.11.5. Terrestrial Link >400km (64 kbit/s) – NRC

Refer to section 3.9.5. Same considerations apply here. The applicable wholesale charge is **50 OMR**.

3.11.6. Terrestrial Link Within exchange premises (2 Mbit/s) – NRC

Refer to section 3.9.6. Same considerations apply here. The applicable wholesale charge is **60 OMR**.

3.11.7. Terrestrial Link Within exchange area (2 Mbit/s) – NRC

Refer to section 3.9.7. Same considerations apply here. The applicable wholesale charge is **100 OMR**.

3.11.8. Terrestrial Link 0-100 km (2 Mbit/s) – NRC

Refer to section 3.9.8. Same considerations apply here. The applicable wholesale charge is **100 OMR**.

3.11.9. Terrestrial Link 101-300km (2 Mbit/s) – NRC

Refer to section 3.9.9. Same considerations apply here. The applicable wholesale charge is **100 OMR**.

3.11.10. Terrestrial Link 301-400km (2 Mbit/s) – NRC

Refer to section 3.9.10. Same considerations apply here. The applicable wholesale charge is **100 OMR**.

3.11.11. Terrestrial Link >400km (2 Mbit/s) – NRC

Refer to section 3.9.11. Same considerations apply here. The applicable wholesale charge is **100 OMR**.

3.11.12. Terrestrial Link Within exchange premises (34 Mbit/s) – NRC

Refer to section 3.9.12. Same considerations apply here. The applicable wholesale charge is **200 OMR**.

3.11.13. Terrestrial Link 3km rental per local tail (34 Mbit/s) – NRC

Refer to section 3.9.13. Same considerations apply here. The applicable wholesale charge is **200 OMR**.

3.11.14. Terrestrial Link ≤ 50 km (34 Mbit/s) – NRC

Refer to section 3.9.14. Same considerations apply here. The applicable wholesale charge is **200 OMR**.

3.11.15. Terrestrial Link ≤ 100 km (34 Mbit/s) – NRC

Refer to section 3.9.15. Same considerations apply here. The applicable wholesale charge is **200 OMR**.

3.11.16. Terrestrial Link ≤ 300 km (34 Mbit/s) – NRC

Refer to section 3.9.16. Same considerations apply here. The applicable wholesale charge is **200 OMR**.

3.11.17. Terrestrial Link ≤ 700 km (34 Mbit/s) – NRC

Refer to section 3.9.17. Same considerations apply here. The applicable wholesale charge is **200 OMR**.

3.11.18. Terrestrial Link ≤ 1000 km (34 Mbit/s) – NRC

Refer to section 3.9.18. Same considerations apply here. The applicable wholesale charge is **200 OMR**.

3.11.19. Terrestrial Link Within exchange premises (155 Mbit/s) – NRC

Refer to section 3.9.19. Same considerations apply here. The applicable wholesale charge is **200 OMR**.

3.11.20. Terrestrial Link 3km rental per local tail (155 Mbit/s) – NRC

Refer to section 3.9.20. Same considerations apply here. The applicable wholesale charge is **200 OMR**.

3.11.21. Terrestrial Link ≤ 50 km (155 Mbit/s) – NRC

Refer to section 3.9.21. Same considerations apply here. The applicable wholesale charge is **200 OMR**.

3.11.22. Terrestrial Link ≤ 100 km (155 Mbit/s) – NRC

Refer to section 3.9.22. Same considerations apply here. The applicable wholesale charge is **200 OMR**.

3.11.23. Terrestrial Link ≤ 300 km (155 Mbit/s) – NRC

Refer to section 3.9.23. Same considerations apply here. The applicable wholesale charge is **200 OMR**.

3.11.24. Terrestrial Link ≤ 700 km (155 Mbit/s) – NRC

Refer to section 3.9.24. Same considerations apply here. The applicable wholesale charge is **200 OMR**.

3.11.25. Terrestrial Link ≤ 1000 km (155 Mbit/s) – NRC

Refer to section 3.9.25. Same considerations apply here. The applicable wholesale charge is **200 OMR**.

3.11.26. Terrestrial Links – MRC

Refer to section 3.9.26. Same considerations apply here.

The applicable wholesale charges for 64kbps and 2Mbps links are presented below:

Capacity	Within exchange premises	Within exchange area	0-100 km	101-300 km	301-400 km	>400 km
64 kb/s	-	66	99	150	202	266
2 Mb/s	192	199	296	450	605	799

Table 3.15: Applicable wholesale charges in Ooredoo's RAIO for the trunk segment of 64 kb/s and 2 Mb/s terrestrial links [Source: TRA]

On the other hand, the table below outlines the applicable wholesale charges for the 34Mbps and 155Mbps links.

Capacity	Within exchange premises	3km rental per local tail	<=50km	<=100km	<=300km	<=700km	<=1000km
34 Mb/s	1,316	1,574	1,245	1,334	1,410	2,589	3,051
155 Mb/s	2,313	2,766	2,275	2,331	2,407	4,037	4,370

Table 3.16: Applicable wholesale charges in Ooredoo's RAIO for the trunk segment of 34 Mb/s and 155 Mb/s terrestrial links [Source: TRA]

3.12. ANNEX B-7 - Wholesale Trunk Segments of Leased Lines IPLC

3.12.1. ME Countries E1 – NRC

Ooredoo proposed a NRC for the setup of an E1 leased line for IPLC in ME countries of 7,822 OMR, which it extracted from Omantel's draft reference offer.

As detailed in Omantel's RAIO Decision, the applicable wholesale charge for this service is **3,531 OMR**.

3.12.2. Non-ME Countries E1 – NRC

Refer to section 3.12.1. Same considerations apply here. The applicable wholesale charge is **3,531 OMR**.

3.12.3. ME Countries DS3 – NRC

Ooredoo proposed a NRC for the setup of a DS3 leased line for IPLC in ME countries of 10,682 OMR, which it extracted from Omantel's draft reference offer.

As detailed in Omantel's RAIO Decision, the applicable wholesale charge for this service is **5,309 OMR**.

3.12.4. Non-ME Countries DS3 – NRC

Refer to section 3.12.3. Same considerations apply here. The applicable wholesale charge is **5,309 OMR**.

3.12.5. ME Countries STM1 – NRC

Ooredoo proposed a NRC for the setup of a STM1 leased line for IPLC in ME countries of 13,542 OMR, which it extracted from Omantel's draft reference offer.

As detailed in Omantel's RAIO Decision, the applicable wholesale charge for this service is **7,087 OMR**.

3.12.6. Non-ME Countries STM1 – NRC

Refer to section 3.12.5. Same considerations apply here. The applicable wholesale charge is **7,087 OMR**.

3.12.7. ME Countries E1 – MRC

Ooredoo proposed a monthly charge for an E1 link for IPLC to ME countries of 7,410 OMR, which it extracted from Omantel's draft reference offer.

As indicated in Omantel's RAIO Decision, the applicable wholesale charge for this service is **5,205 OMR**.

3.12.8. Non-ME Countries E1 – MRC

Ooredoo proposed a monthly charge for an E1 link for IPLC to non-ME countries of 6,311 OMR, which it extracted from Omantel's draft reference offer.

As indicated in Omantel's RAIO Decision, the applicable wholesale charge for this service is **3,866 OMR**.

3.12.9. ME Countries DS3 – MRC

Ooredoo proposed a monthly charge for a DS3 link for IPLC to ME countries of 32,044 OMR, which it extracted from Omantel's draft reference offer.

As indicated in Omantel's RAIO Decision, the applicable wholesale charge for this service is **22,177 OMR**.

3.12.10. Non-ME Countries DS3 – MRC

Ooredoo proposed a monthly charge for a DS3 link for IPLC to non-ME countries of 27,552 OMR, which it extracted from Omantel's draft reference offer.

As indicated in Omantel's RAIO Decision, the applicable wholesale charge for this service is **16,250 OMR**.

3.12.11. ME Countries STM1 – MRC

Ooredoo proposed a monthly charge for a STM1 link for IPLC to ME countries of 54,483 OMR, which it extracted from Omantel's draft reference offer.

As indicated in Omantel’s RAIO Decision, the applicable wholesale charge for this service is **40,043 OMR**.

3.12.12. Non-ME Countries STM1 – MRC

Ooredoo proposed a monthly charge for a STM1 link for IPLC to non-ME countries of 54,102 OMR, which it extracted from Omantel’s draft reference offer.

As indicated in Omantel’s RAIO Decision, the applicable wholesale charge for this service is **31,730 OMR**.

3.13. ANNEX B-8 - IP International Bandwidth Capacity

3.13.1. Internet Lease Line Tariffs – NRC

Ooredoo proposed different NRCs for the setup of IP international bandwidth capacity based on the bandwidth purchased, as presented below:

Capacity	Charge in OMR
2 Mb/s	350.00
4 Mb/s	700.00
8 Mb/s	700.00
16 Mb/s	700.00
34 Mb/s	700.00
155 Mb/s	2,000.00

Table 3.17: Ooredoo’s proposed NRCs for IP international bandwidth capacity [Source: Ooredoo]

However, it did not provide any valid supporting documentation to justify these figures. At the same time, the TRA sees no reason why these one-off charges should depend on the bandwidth eventually purchased by the alternative operator. This charge should be the same for all sub-services, independently of the capacity installed.

As detailed in Omantel’s RAIO Decision, the applicable wholesale charge for this service is **397 OMR**, independently of the bandwidth purchased.

At the same time, the TRA notes that if multiple lines are purchased at the same time (in the same purchase order) by an alternative operator, this fee should apply only once.

3.13.2. Internet Lease Line Tariffs – MRC

Ooredoo proposed the monthly charges for internet leased line for IP international bandwidth capacity presented below:

Capacity	Charge in OMR/month	
	Access 3km	Access 6 km
2 Mb/s	2,114	2,114
4 Mb/s	4,014	4,670
8 Mb/s	5,753	6,313
16 Mb/s	8,383	9,163
34 Mb/s	14,744	15,914
155 Mb/s	40,106	41,666

Table 3.18: Ooredoo's proposed monthly charges for IP international bandwidth capacity [Source: Ooredoo]

The TRA sees no reason why the charges for these services should be distance-dependent. At the same time, as detailed in Omantel's RAIO Decision, the TRA obtained an applicable wholesale charge for a STM1 of 1,338 OMR/STM1/month, which corresponds to a wholesale charge of **8.64 OMR/Mbps/month**.

Using the applicable charge of 8.64 OMR/Mbps and discarding the distance dependency, the TRA obtains the following applicable wholesale charges for the service:

Capacity	Charge in OMR/month	
	Access 3km	Access 6 km
2 Mb/s	17	17
4 Mb/s	35	35
8 Mb/s	69	69
16 Mb/s	138	138
34 Mb/s	294	294
155 Mb/s	1,338	1,338

Table 3.19: Applicable monthly charges for IP international bandwidth capacity [Source: TRA]

3.14. ANNEX B-9 - Access to Landing Stations

3.14.1. Access to Landing Stations NRC

Ooredoo proposed a NRC for the setup of the access to a Landing Station of 8,180 OMR, which it extracted from Omantel's draft reference offer.

As detailed in Omantel's RAIO Decision, the applicable wholesale charge for the service is **1,915 OMR**.

3.14.2. Access to Landing Stations MRC (OMR/SQM)

Ooredoo proposed a monthly charge per sqm for the access to landing stations of 999 OMR, which it extracted from Omantel's draft reference offer.

As indicated in Omantel's RAIO Decision, the applicable wholesale charge for this service is **729 OMR/month/sqm**.

3.15. ANNEX B-10 - Access to Earth Stations

3.15.1. Access to Earth Stations NRC

Ooredoo proposed a NRC for the setup of the access to an Earth Station of 6,750 OMR, which it extracted from Omantel's draft reference offer.

As detailed in Omantel's RAIO Decision, the applicable wholesale charge for this service is **1,500 OMR**.

3.15.2. Access to Earth Stations MRC (OMR/SQM)

Ooredoo proposed a monthly charge per sqm for the access to Earth Station of 510 OMR, which it extracted from Omantel's draft reference offer.

As indicated in Omantel's RAIO Decision, the applicable wholesale charge for this service is **302 OMR/month/sqm**.

3.16. ANNEX B-11 - Mobile Access Services MVNO

3.16.1. Set-up (one-time)

Ooredoo proposed a setup fee for Mobile Access Services of 100,000 OMR, without any supporting documentation to justify this rate.

The set-up fee for mobile access services mainly involves reprogramming the main technical elements of an operators' network as well as the administrative tasks surrounding the process. Given the lack of documentation provided by Ooredoo, the TRA is impeded to perform a reasonable calculation which may lead it to achieve a reasonable charge for the service. Consequently, and as the only alternative available, the TRA has resorted to a benchmark to retrieve an estimate of the cost of the service. This benchmark is presented in Table 3.20 below.

Country	Charge (OMR)
Cyprus	41,565
Austria	85,192
Average	63,378

Table 3.20: International benchmark on setup fee for Mobile Access services [Source: Cyta’s reference offer, Case No COMP/M.6497 – HUTCHISON 3G AUSTRIA/ORANGE AUSTRIA]

Given that the cost for the provision of this service should not depend heavily on Omani specificities, the use of international references is perceived as a valid alternative. Applying the 12% royalty fee to the average of the two references available in the public domain leads to an applicable wholesale charge for the service of **72,020 OMR** (alternative (vii) identified in section 2.6).

3.16.2. Services charges

The charges for Mobile Access services are calculated on the basis of the retail-minus pricing methodology, as indicated in the A&I Regulation. Ooredoo proposed a minus of 29%.

Given that the information provided by Ooredoo does not allow the TRA to perform a retail minus calculation in compliance with the A&I regulation (e.g. it is not possible to reach the prepaid/post-paid disaggregation as mandated), the retail minus discount has been adjusted by the TRA using information from Omantel’s Top-Down system and following the methodology laid out in Annex 4 of the A&I Regulation which outlines that the applicable discount shall be calculated as follows:

$$Discount = \left(1 - \frac{\text{avoidable cost per subscriber}}{\text{average revenue per retail subscriber}} \right)$$

As stated in Article 2.1 (iii) of Annex 4 of the A&I Regulation for Mobile Access Services, the average revenue per retail subscriber shall take account of only prepaid subscribers. The total annual retail revenues were calculated from Omantel’s Top-Down taking account of prepaid call services, prepaid SMS/MMS services and prepaid mobile data services. As per Article 2.2 of Annex 4 of the A&I Regulation, the calculation excluded any services not related to the ones provided to the Requesting Party, such as handset costs. Using the total number of prepaid connections, the average revenue per retail subscriber was finally obtained.

As stated in Article 2.3 of Annex 4 of the A&I Regulation, avoidable costs shall be calculated on a per subscriber basis for the past year. These shall be based on the costs incurred by the Providing Party and shall take account only of the subscribers included in the calculation of the average revenue per retail subscriber. Consequently, avoidable costs have been calculated based on the same set of services considered in

the revenue calculation, and has included cost components such as customer acquisition, sales, distribution, marketing, billing or customer care.

Considering the above, the retail-minus discount was calculated as per the formula laid out in the A&I regulation, which has led to a minus of **23% for Resellers** (or equivalently, a discount of 77%) and **26% for Mobile Providers other than Resellers** (or equivalently, a discount of 74%) for national Mobile Access services in the consumer segment. Given that no prepaid customers exist in the corporate segment of Omantel's TD system, a specific minus could not be obtained for the corporate segment and the same minus as in the consumer segment shall apply.

For international roaming, the TRA was not able to obtain a separate minus given the low relevance of the service in the TDLRIC system. As detailed in Omantel's RAIO Decision, the TRA deems reasonable the figure proposed by Omantel in its reference offer and decided to set a minus for international roaming of **2% for Resellers and for Mobile Providers other than Resellers**.

The TRA notes that the minus indicated in the RAIOs are a minimum discount and could be renegotiated between operators upon contract agreement subject to non-discrimination obligation.

In a second step, this discount shall be used to calculate the wholesale unit charges of each resale services in accordance with the formula below:

$$\text{Wholesale unit price} = \text{average retail revenue per unit} \times \text{discount}$$

The average retail revenue per unit shall be calculated on a quarterly backward-looking basis.

As stated in the A&I Regulation, the calculation of wholesale charges shall be updated on a quarterly basis and does not need to be included in the RAIO, although the detailed methodology for calculating the prices for wholesale services shall be subject to approval by the TRA. Ooredoo is, therefore, required to include a detailed methodology for calculating the prices for wholesale services in its Final Draft RAIO, after discussions and agreements with the licensees, for approval of the TRA. In case the agreement is not reached with the licensees, Ooredoo shall submit its proposed methodology for calculating the prices for wholesale services in its Final Draft RAIO, along with dissenting views of concerned licensees and Ooredoo's comments on such views.

3.17. ANNEX B-12 - National Roaming

3.17.1. National Roaming services

The charges for national roaming services are calculated on the basis of the retail-minus pricing methodology as indicated in the A&I Regulation. Ooredoo proposed a minus of 29% but later indicated that it had wrongly calculated this figure.

Given that the information provided by Ooredoo does not allow the TRA to perform a retail minus calculation in compliance with the A&I regulation (e.g. it is not possible to reach the prepaid/post-paid disaggregation as mandated), the retail minus discount has been adjusted by the TRA using information from Omantel's Top-Down system and following the methodology laid out in Annex 4 of the A&I Regulation which outlines that the applicable discount shall be calculated as follows:

$$Discount = \left(1 - \frac{\text{avoidable cost per subscriber}}{\text{average revenue per retail subscriber}} \right)$$

As stated in Article 2.1.(iii) of Annex 4 of the A&I Regulation for National Roaming Services, the average revenue per retail subscriber shall take account of both prepaid and post-paid subscribers. The total annual retail revenues were calculated from Omantel's Top-Down taking account of call services, SMS/MMS services and mobile data services. As per Article 2.2. of Annex 4 of the A&I Regulation, the calculation excluded any services not related to the ones provided to the Requesting Party, such as handset costs. Using the total number of prepaid and post-paid connections, the average revenue per retail subscriber was finally obtained.

As stated in Article 2.3 of Annex 4 of the A&I Regulation, avoidable costs shall be calculated on a per subscriber basis for the past year. These shall be based on the costs incurred by the Providing Party and shall take account only of the subscribers included in the calculation of the average revenue per retail subscriber. Consequently, avoidable costs have been calculated based on the same set of services considered in the revenue calculation, and has included cost components such as customer acquisition, sales, distribution, marketing, billing or customer care.

Considering the above, the retail-minus discount was calculated as per the formula laid out in the A&I regulation, which has led to a minus of **26%** (or equivalently, a discount of 74%) for National Roaming services in the consumer segment and **25%** (or equivalently, a discount of 75%) for National Roaming services in the corporate segment.

The TRA notes that the minus indicated in the RAIOs are a minimum discount and could be renegotiated between operators upon contract agreement subject to non-discrimination obligation.

In a second step, this discount shall be used to calculate the wholesale unit charges of each resale services in accordance with the formula below:

Wholesale unit price = average retail revenue per unit × discount

The average retail revenue per unit shall be calculated on a quarterly backward-looking basis. In the post-paid sector, the revenues for product bundles shall be allocated to the component services in an objective and transparent way. In the prepaid sector, discounts and special offers should be allocated to services in an objective and transparent way. Ad hoc adjustments to retail prices shall also be reflected in the calculation of the average retail revenue per minute.

As stated in the A&I Regulation, the calculation of wholesale prices shall be updated on a quarterly basis and does not need to be included in the RAIO, although the detailed methodology for calculating the prices for wholesale services shall be subject to approval by the TRA. Ooredoo is, therefore, required to include a detailed methodology for calculating the prices for wholesale services in its Final Draft RAIO, after discussions and agreements with the licensees, for approval of the TRA. In case the agreement is not reached with the licensees, Ooredoo shall submit its proposed methodology for calculating the prices for wholesale services in its Final Draft RAIO, along with dissenting views of concerned licensees and Ooredoo's comments on such views.

3.18. ANNEX B-13 - Co-location

3.18.1. Co-location (indoor) (Annual charges per SQR Meter)

Ooredoo proposed a yearly charge for indoor colocation of 612 OMR/sqm without any supporting documentation to justify this rate.

Recognising that this charge would be aligned with the upper range of the figures observed in the international practice and given that no information on this service is available in the cost models, the TRA agrees with Ooredoo in setting an applicable wholesale charge of **612 OMR/year/sqm** for the service.

3.18.2. Purchase of Shelter 3.4x3m

Ooredoo proposed a price for the purchase of a 3.4mx3m shelter of 22,500 OMR without any supporting documentation to justify this rate.

Alternatively, the TRA extracted a purchase cost of 8,201 OMR for a 3mx6m shelter from Omantel's TD-LRIC system (no relevant information is available in the Bottom-Up model for this service). At the same time, the purchase of shelters is not a service frequently offered in the international domain and consequently, Ooredoo's proposed charge could not be confronted to benchmark figures.

Using the figure from Omantel's TD-LRIC, the purchase price of a 3.4mx3m shelter has been calculated using the formula presented below:

$$ChargeShelter(3.4x3) = ChargeShelter(3x6) \cdot \frac{3.4 \times 3}{3 \times 6} = 4,647 \text{ OMR}$$

The TRA thus comes up with an applicable wholesale charge for a 3.4mx3m shelter of **4,647 OMR** (alternative (iv) identified in section 2.6).

3.18.3. Purchase of Shelter 3.4x5m

Ooredoo proposed a price for the purchase of a 3.4mx5m shelter of 25,500 OMR without any supporting documentation to justify this rate.

Alternatively, the TRA extracted a purchase cost of 8,201 OMR for a 3mx6m shelter from Omantel's TD-LRIC system (no relevant information is available in the Bottom-Up model for this service). At the same time, the purchase of shelters is not a service frequently offered in the international domain and consequently, Ooredoo's proposed charge could not be confronted to benchmark figures.

Using the figure from Omantel's TD-LRIC, the purchase price of a 3.4mx5m shelter has been calculated using the formula presented below:

$$ChargeShelter(3.4x5) = ChargeShelter(3x6) \cdot \frac{3.4 \times 5}{3 \times 6} = 7,745 \text{ OMR}$$

The TRA thus comes up with an applicable wholesale charge for a 3.4mx5m shelter of **7,745 OMR** (alternative (iv) identified in section 2.6).

3.19. ANNEX C – Ancillary Services

Ooredoo did not provide any evidence to support the calculation of the proposed charges for ancillary services. At the same time, some of the charges proposed by Ooredoo have been directly extracted from Omantel's draft RAIO.

The charges proposed by Ooredoo are presented below, indicating if they have been extracted from Omantel's draft RAIO.

Category	Service	Charge in OMR	From Omantel's RAIO?
2 Mb/s Port Capacity	Provisioning Fee	100	√
	Monthly Rental	20	×
	Disconnection fee	70	√
155 Mb/s Port Capacity	Provisioning Fee	6,300	×
	Monthly Rental	1,260	×
	Disconnection fee	4,410	×
Implementation of Number Ranges	Fixed Network - Charges per order	300	×
	Toll-free number - Charges per order	300	×
	Mobile phone numbers (MSISDN) - Charges per order	300	×
	Premium rate numbers - Charges per order	300	×
	Other numbers- Charges per order	300	×
Point of Interconnection	Establishment Charges	3,500	√
	Annual Rental	700	√

Table 3.21: Ooredoo's proposed charges for ancillary services [Source: Ooredoo]

As detailed in Omantel's RAIO Decision, the provisioning fee of **100 OMR/port** for 2 Mb/s Port Capacity has been accepted by the TRA, as well as a monthly rental of **15 OMR/month/port**. At the same time, the disconnection fee has been adjusted by the TRA to **15 OMR**. Concerning 155 Mb/s Port Capacity, the TRA is of view that the provisioning and disconnection fee should be similar to the equivalent charges for 2 Mb/s Port Capacity, since the tasks to be performed for these one-off services should not depend on the capacity of the port. At the same time, the TRA considers the cost factor of 63 employed by Ooredoo between 2 Mb/s and 155 Mb/s port capacities to be reasonable. Considering the monthly rental of 15 OMR/port for 2 Mb/s Port Capacity and the factor of 63, the TRA comes up with a monthly rental for 155 Mb/s Port Capacity of **945 OMR/month**.

Concerning the implementation of number ranges, given the reduced materiality of these services, it was not feasible for the TRA to either (i) conduct a benchmark, given that these services are not found in other reference offers or (ii) perform a robust and accurate calculation of the cost of these services. The TRA however deems Ooredoo's proposed charges to be reasonable and consequently, accepts the charge of **300 OMR** proposed by Ooredoo for these services.

Finally, as detailed in Omantel's RAIO Decision, the charge of **700 OMR** for the annual rental of a point of interconnection has been validated by the TRA, while the

charge of 3,500 OMR for the establishment of a point of interconnection has been adjusted to **503 OMR**.

Taking into account the above, the TRA comes up with the following applicable wholesale charges for ancillary services:

Category	Service	Charge in OMR
2 Mb/s Port Capacity	Provisioning Fee	100
	Monthly Rental	15
	Disconnection fee	15
155 Mb/s Port Capacity	Provisioning Fee	100
	Monthly Rental	945
	Disconnection fee	15
Implementation of Number Ranges	Fixed Network - Charges per order	300
	Toll-free number - Charges per order	300
	Mobile phone numbers (MSISDN) - Charges per order	300
	Premium rate numbers - Charges per order	300
	Other numbers- Charges per order	300
Point of Interconnection	Establishment Charges	503
	Annual Rental	700

Table 3.22: Applicable wholesale charges for ancillary services [Source: TRA]

Annex A

Summary of the Applicable RAIO Charges

Based on TRA's views laid out in the different sections of this Decision, the table below provides a summarised vision of the new applicable charges for each of the RAIO services, in comparison with the rates initially proposed by Ooredoo:

Service Category	Service Name	Unit	Ooredoo's Proposed Charge	TRA's Determined Charge
Annex B-1. Fixed Call termination	National call termination - Single	Baiza/min	8.00	2.31
	National call termination - Double	Baiza/min		2.36
	National call termination - Long	Baiza/min		2.55
	International call termination	Baiza/min	11.00	Single: 2.31 Double: 2.36 Long: 2.55
Annex B-2. Fixed Call Transit	National bilateral transit - Single	Baiza/min	5.60	1.89
	National bilateral transit - Double	Baiza/min		1.95
	International bilateral transit	Baiza/min	4.60	3.23
	National cascade transit	Baiza/min	4.30 + rate charged by terminating operator	Single: 1.89 + rate charged by terminating operator; Double: 1.95 + rate charged by terminating operator
Annex B-3. Mobile Call Termination	National call termination	Baiza/min	10.50	2018: 10.0 2019: 8.0 2020: 6.0 2021: 4.0
	International call termination	Baiza/min	21.60	2018: 10.0 2019: 8.0 2020: 6.0 2021: 4.0
	SMS termination	Baiza/SMS	0.30	0.74
	MMS termination	Baiza/MMS	6.64	4.02

Service Category	Service Name	Unit	Ooredoo's Proposed Charge	TRA's Determined Charge
ANNEX B-4.1. Mobile Call by Call Carrier Selection	Setup Fee-Mobile Call by Call Carrier selection -- NRC	OMR	21,000	733
	Call origination	Baiza/min	11.00	2018: 10.5 2019: 8.4 2020: 6.3 2021: 4.2
ANNEX B-4.2. Mobile Carrier Pre Selection	CPS Set-up Fee (just one-time payment)	OMR	21,000	733
	Change fee per subscriber	OMR/subscriber	72	2
	Call origination (Baiza/Min)	Baiza/min	11.00	2018: 10.5 2019: 8.4 2020: 6.3 2021: 4.2
ANNEX B-5.1. Wholesale Broadband - Wholesale line rental	Wholesale Line Rental charges (Initial Service setup fee) (NRC)	OMR/customers	404.70	87.40
	Wholesale Line Rental charges per Customer line charges (NRC)	OMR/line	72	2
	Wholesale Line Rental charges per Customer line charges (MRC)	OMR/month/line	18.55	2.38
	Voice call charges – National Voice Calls to Ooredoo	Baiza/min	Call origination + Call termination charges of the other operator + Admin + Royalty + Tax	Call origination + Call termination charges of the other operator

Service Category	Service Name	Unit	Ooredoo's Proposed Charge	TRA's Determined Charge
	Voice call charges – International Calls	Baiza/min	Call origination + International Leg + The termination party charges + Admin + Royalty + Tax	Call origination + International Leg + The termination party charges
ANNEX B-5.2a. Wholesale Broadband - Bitstream Layer 2	NRC Charges for STM-1	OMR	5,534	1,421
	MRC Charges for STM-1	OMR/month	19,259	Metro: 8,956 North:11,913 East: 6,752 South: 8,948
	NRC Link fee per Customer	OMR/customer	72	15
	MRC Link fee per Customer	OMR/month/customer	12.41	12.41
	NRC charge Per MSAN Charges per Slot	OMR/MSAN slot	72	15
	MRC charge Per MSAN Charges per Slot	OMR/month/MSAN slot	138	138
	NRC charge Per ADSL card per MSAN	OMR/card	1,857	1,217
ANNEX B-5.2b. Wholesale Broadband - Bitstream Layer 3	NRC Charges for STM-1	OMR	5,534	1,421
	MRC Charges for STM-1	OMR/month	19,259	Metro: 8,956 North:11,913 East: 6,752 South: 8,948
	NRC Link fee per Customer	OMR/customer	72	15
	MRC Link fee per Customer	OMR/month/customer	12.407	12.41
	NRC charge Per MSAN Charges per Slot	OMR/MSAN slot	72	15
	MRC charge Per MSAN Charges per Slot	OMR/month/MSAN slot	138	138
	NRC charge Per ADSL card per MSAN	OMR/card	1,857	1,217

Service Category	Service Name	Unit	Ooredoo's Proposed Charge	TRA's Determined Charge
ANNEX B-5.3. Wholesale Broadband - Wholesale Transmission	Terrestrial Link Within exchange area (64 kbit/s) -- NRC	OMR/line	50	50
	Terrestrial Link 0-100 km (64 kbit/s) -- NRC	OMR/line	50	50
	Terrestrial Link 101-300km (64 kbit/s) -- NRC	OMR/line	50	50
	Terrestrial Link 301-400km (64 kbit/s) -- NRC	OMR/line	50	50
	Terrestrial Link >400km (64 kbit/s) -- NRC	OMR/line	50	50
	Terrestrial Link Within exchange premises (2 Mbit/s) -- NRC	OMR/line	60	60
	Terrestrial Link Within exchange area (2 Mbit/s) - NRC	OMR/line	100	100
	Terrestrial Link 0-100 km (2 Mbit/s) -- NRC	OMR/line	100	100
	Terrestrial Link 101-300km (2 Mbit/s) -- NRC	OMR/line	100	100
	Terrestrial Link 301-400km (2 Mbit/s) -- NRC	OMR/line	100	100
	Terrestrial Link >400km (2 Mbit/s) -- NRC	OMR/line	100	100
	Terrestrial Link Within exchange premises (34 Mbit/s) -- NRC	OMR/line	200	200
	Terrestrial Link 3km rental per local tail (34 Mbit/s) -- NRC	OMR/line	200	200
	Terrestrial Link <= 50 km (34 Mbit/s) -- NRC	OMR/line	200	200
	Terrestrial Link <=100 km (34 Mbit/s) -- NRC	OMR/line	200	200
	Terrestrial Link <=300 km (34 Mbit/s) -- NRC	OMR/line	200	200
	Terrestrial Link <=700 km (34 Mbit/s) -- NRC	OMR/line	200	200
	Terrestrial Link <=1000 km (34 Mbit/s) -- NRC	OMR/line	200	200

Service Category	Service Name	Unit	Ooredoo's Proposed Charge	TRA's Determined Charge
	Terrestrial Link Within exchange premises (155 Mbit/s) -- NRC	OMR/line	200	200
	Terrestrial Link 3km rental per local tail (155 Mbit/s) -- NRC	OMR/line	200	200
	Terrestrial Link <= 50 km (155 Mbit/s) -- NRC	OMR/line	200	200
	Terrestrial Link <=100 km (155 Mbit/s) -- NRC	OMR/line	200	200
	Terrestrial Link <=300 km (155 Mbit/s) -- NRC	OMR/line	200	200
	Terrestrial Link <=700 km (155 Mbit/s) -- NRC	OMR/line	200	200
	Terrestrial Link <=1000 km (155 Mbit/s) -- NRC	OMR/line	200	200
	Terrestrial Link Within exchange area (64 kbit/s) -- MRC	OMR/month/line	90	66
	Terrestrial Link 0-100 km (64 kbit/s) -- MRC	OMR/month/line	130	99
	Terrestrial Link 101-300km (64 kbit/s) -- MRC	OMR/month/line	190	150
	Terrestrial Link 301-400km (64 kbit/s) -- MRC	OMR/month/line	250	202
	Terrestrial Link >400km (64 kbit/s) -- MRC	OMR/month/line	325	266
	Terrestrial Link Within exchange premises (2 Mbit/s) -- MRC	OMR/month/line	80	192
	Terrestrial Link Within exchange area (2 Mbit/s) - MRC	OMR/month/line	270	199
	Terrestrial Link 0-100 km (2 Mbit/s) -- MRC	OMR/month/line	455	296
	Terrestrial Link 101-300km (2 Mbit/s) -- MRC	OMR/month/line	655	450
	Terrestrial Link 301-400km (2 Mbit/s) -- MRC	OMR/month/line	875	605

Service Category	Service Name	Unit	Ooredoo's Proposed Charge	TRA's Determined Charge
	Terrestrial Link >400km (2 Mbit/s) -- MRC	OMR/month/line	1,138	799
	Terrestrial Link Within exchange premises (34 Mbit/s) -- MRC	OMR/month/line	1,130	1,316
	Terrestrial Link 3km rental per local tail (34 Mbit/s) -- MRC	OMR/month/line	1,404	1,574
	Terrestrial Link <= 50 km (34 Mbit/s) -- MRC	OMR/month/line	825	1,245
	Terrestrial Link <=100 km (34 Mbit/s) -- MRC	OMR/month/line	884	1,334
	Terrestrial Link <=300 km (34 Mbit/s) -- MRC	OMR/month/line	1,119	1,410
	Terrestrial Link <=700 km (34 Mbit/s) -- MRC	OMR/month/line	2,055	2,589
	Terrestrial Link <=1000 km (34 Mbit/s) -- MRC	OMR/month/line	2,422	3,051
	Terrestrial Link Within exchange premises (155 Mbit/s) -- MRC	OMR/month/line	2,719	2,313
	Terrestrial Link 3km rental per local tail (155 Mbit/s) -- MRC	OMR/month/line	2,199	2,766
	Terrestrial Link <= 50 km (155 Mbit/s) -- MRC	OMR/month/line	2,358	2,275
	Terrestrial Link <=100 km (155 Mbit/s) -- MRC	OMR/month/line	2,417	2,331
	Terrestrial Link <=300 km (155 Mbit/s) -- MRC	OMR/month/line	2,652	2,407
	Terrestrial Link <=700 km (155 Mbit/s) -- MRC	OMR/month/line	4,449	4,037
	Terrestrial Link <=1000 km (155 Mbit/s) -- MRC	OMR/month/line	4,816	4,370
ANNEX B-5.4. Wholesale Broadband	Broadband Resale Service	Retail Minus	-	CON:21% COR:17%
ANNEX B-6. Wholesale Trunk Segments of Leased lines	Terrestrial Link Within exchange area (64 kbit/s) -- NRC	OMR/line	50	50
	Terrestrial Link 0-100 km (64 kbit/s) -- NRC	OMR/line	50	50

Service Category	Service Name	Unit	Ooredoo's Proposed Charge	TRA's Determined Charge
	Terrestrial Link 101-300km (64 kbit/s) -- NRC	OMR/line	50	50
	Terrestrial Link 301-400km (64 kbit/s) -- NRC	OMR/line	50	50
	Terrestrial Link >400km (64 kbit/s) -- NRC	OMR/line	50	50
	Terrestrial Link Within exchange premises (2 Mbit/s) -- NRC	OMR/line	60	60
	Terrestrial Link Within exchange area (2 Mbit/s) - NRC	OMR/line	100	100
	Terrestrial Link 0-100 km (2 Mbit/s) -- NRC	OMR/line	100	100
	Terrestrial Link 101-300km (2 Mbit/s) -- NRC	OMR/line	100	100
	Terrestrial Link 301-400km (2 Mbit/s) -- NRC	OMR/line	100	100
	Terrestrial Link >400km (2 Mbit/s) -- NRC	OMR/line	100	100
	Terrestrial Link Within exchange premises (34 Mbit/s) -- NRC	OMR/line	200	200
	Terrestrial Link 3km rental per local tail (34 Mbit/s) -- NRC	OMR/line	200	200
	Terrestrial Link <= 50 km (34 Mbit/s) -- NRC	OMR/line	200	200
	Terrestrial Link <=100 km (34 Mbit/s) -- NRC	OMR/line	200	200
	Terrestrial Link <=300 km (34 Mbit/s) -- NRC	OMR/line	200	200
	Terrestrial Link <=700 km (34 Mbit/s) -- NRC	OMR/line	200	200
	Terrestrial Link <=1000 km (34 Mbit/s) -- NRC	OMR/line	200	200
	Terrestrial Link Within exchange premises (155 Mbit/s) -- NRC	OMR/line	200	200
	Terrestrial Link 3km rental per local tail (155 Mbit/s) -- NRC	OMR/line	200	200

Service Category	Service Name	Unit	Ooredoo's Proposed Charge	TRA's Determined Charge
	Terrestrial Link <= 50 km (155 Mbit/s) -- NRC	OMR/line	200	200
	Terrestrial Link <=100 km (155 Mbit/s) -- NRC	OMR/line	200	200
	Terrestrial Link <=300 km (155 Mbit/s) -- NRC	OMR/line	200	200
	Terrestrial Link <=700 km (155 Mbit/s) -- NRC	OMR/line	200	200
	Terrestrial Link <=1000 km (155 Mbit/s) -- NRC	OMR/line	200	200
	Terrestrial Link Within exchange area (64 kbit/s) -- MRC	OMR/month/line	90	66
	Terrestrial Link 0-100 km (64 kbit/s) -- MRC	OMR/month/line	130	99
	Terrestrial Link 101-300km (64 kbit/s) -- MRC	OMR/month/line	190	150
	Terrestrial Link 301-400km (64 kbit/s) -- MRC	OMR/month/line	250	202
	Terrestrial Link >400km (64 kbit/s) -- MRC	OMR/month/line	325	266
	Terrestrial Link Within exchange premises (2 Mbit/s) -- MRC	OMR/month/line	80	192
	Terrestrial Link Within exchange area (2 Mbit/s) - MRC	OMR/month/line	270	199
	Terrestrial Link 0-100 km (2 Mbit/s) -- MRC	OMR/month/line	455	296
	Terrestrial Link 101-300km (2 Mbit/s) -- MRC	OMR/month/line	655	450
	Terrestrial Link 301-400km (2 Mbit/s) -- MRC	OMR/month/line	875	605
	Terrestrial Link >400km (2 Mbit/s) -- MRC	OMR/month/line	1,138	799
	Terrestrial Link Within exchange premises (34 Mbit/s) -- MRC	OMR/month/line	1,130	1,316

Service Category	Service Name	Unit	Ooredoo's Proposed Charge	TRA's Determined Charge
	Terrestrial Link 3km rental per local tail (34 Mbit/s) -- MRC	OMR/month/line	1,404	1,574
	Terrestrial Link <= 50 km (34 Mbit/s) -- MRC	OMR/month/line	825	1,245
	Terrestrial Link <=100 km (34 Mbit/s) -- MRC	OMR/month/line	884	1,334
	Terrestrial Link <=300 km (34 Mbit/s) -- MRC	OMR/month/line	1,119	1,410
	Terrestrial Link <=700 km (34 Mbit/s) -- MRC	OMR/month/line	2,055	2,589
	Terrestrial Link <=1000 km (34 Mbit/s) -- MRC	OMR/month/line	2,422	3,051
	Terrestrial Link Within exchange premises (155 Mbit/s) -- MRC	OMR/month/line	2,719	2,313
	Terrestrial Link 3km rental per local tail (155 Mbit/s) -- MRC	OMR/month/line	2,199	2,766
	Terrestrial Link <= 50 km (155 Mbit/s) -- MRC	OMR/month/line	2,358	2,275
	Terrestrial Link <=100 km (155 Mbit/s) -- MRC	OMR/month/line	2,417	2,331
	Terrestrial Link <=300 km (155 Mbit/s) -- MRC	OMR/month/line	2,652	2,407
	Terrestrial Link <=700 km (155 Mbit/s) -- MRC	OMR/month/line	4,449	4,037
	Terrestrial Link <=1000 km (155 Mbit/s) -- MRC	OMR/month/line	4,816	4,370
ANNEX B-7. Wholesale trunk segments of leased lines IPLC	ME Countries E1 - NRC	OMR/line	7,822	3,531
	Non-ME Countries E1 – NRC	OMR/line	7,822	3,531
	ME Countries DS3 – NRC	OMR/line	10,682	5,309
	Non-ME Countries DS3 – NRC	OMR/line	10,682	5,309
	ME Countries STM1 – NRC	OMR/line	13,542	7,087
	Non-ME Countries STM1 - NRC	OMR/line	13,542	7,087
	ME Countries E1 - MRC	OMR/month/line	7,410	5,205

Service Category	Service Name	Unit	Ooredoo's Proposed Charge	TRA's Determined Charge
	Non-ME Countries E1 - MRC	OMR/month/line	6,311	3,866
	ME Countries DS3 - MRC	OMR/month/line	32,044	22,177
	Non-ME Countries DS3 - MRC	OMR/month/line	27,552	16,250
	ME Countries STM1 - MRC	OMR/month/line	58,483	40,043
	Non-ME Countries STM1 - MRC	OMR/month/line	54,102	31,730
ANNEX B-8. IP International Bandwidth capacity	2 Mbit/s Internet Lease Line Tariff - NRC	OMR	350	397
	4 Mbit/s Internet Lease Line Tariff - NRC	OMR	700	397
	8 Mbit/s Internet Lease Line Tariff - NRC	OMR	700	397
	16 Mbit/s Internet Lease Line Tariff - NRC	OMR	700	397
	34 Mbit/s Internet Lease Line Tariff - NRC	OMR	700	397
	155 Mbit/s Internet Lease Line Tariff - NRC	OMR	2,000	397
	2 Mbit/s Internet Lease Line Tariff - Access 3km - MRC	OMR/month	2,114	17
	2 Mbit/s Internet Lease Line Tariff - Access 6km - MRC	OMR/month	2,114	17
	4 Mbit/s Internet Lease Line Tariff - Access 3km - MRC	OMR/month	4,014	35
	4 Mbit/s Internet Lease Line Tariff - Access 6km - MRC	OMR/month	4,670	35
	8 Mbit/s Internet Lease Line Tariff - Access 3km - MRC	OMR/month	5,753	69
	8 Mbit/s Internet Lease Line Tariff - Access 6km - MRC	OMR/month	6,313	69

Service Category	Service Name	Unit	Ooredoo's Proposed Charge	TRA's Determined Charge
	16 Mbit/s Internet Lease Line Tariff - Access 3km - MRC	OMR/month	8,383	138
	16 Mbit/s Internet Lease Line Tariff - Access 6km - MRC	OMR/month	9,163	138
	34 Mbit/s Internet Lease Line Tariff - Access 3km - MRC	OMR/month	14,744	294
	34 Mbit/s Internet Lease Line Tariff - Access 6km - MRC	OMR/month	15,914	294
	155 Mbit/s Internet Lease Line Tariff - Access 3km - MRC	OMR/month	40,106	1,338
	155 Mbit/s Internet Lease Line Tariff - Access 6km - MRC	OMR/month	41,666	1,338
ANNEX B-9. Access to Landing Stations	Access to Landing Stations NRC	OMR	8,180	1,915
	Access to Landing Stations MRC	OMR/month/sqm	999	729
ANNEX B-10. Access to Earth Stations	Access to Earth Stations NRC	OMR	6,750	1,500
	Access to Earth Stations MRC	OMR/month/sqm	510	302
	Set-up (one-time)	OMR	100,000	72,020
ANNEX B-11. Mobile Access Services MVNO	All services	Retail minus	-	<i>National:</i> 23% for Resellers and 26% for other Mobile Providers <i>Internat.:</i> 2% for Resellers and for other Mobile Providers
ANNEX B-12. National Roaming	Services charges	Retail minus	-	CON:26% COR:25%
	Co-location (indoor)	OMR/year/sqm	612	612

Service Category	Service Name	Unit	Ooredoo's Proposed Charge	TRA's Determined Charge
ANNEX B-13. Co-location	Purchase of Shelter 3.4x3m	OMR	22,500	4,647
	Purchase of Shelter 3.4x5m	OMR	25,500	7,745
ANNEX C. Ancillary services	2 Mb/s Port Capacity - Provisioning Fee	OMR	100	100
	2 Mb/s Port Capacity - Monthly Rental	OMR/month	20	15
	2 Mb/s Port Capacity – Disconnection fee	OMR	70	15
	155 Mb/s Port Capacity - Provisioning Fee	OMR	6,300	100
	155 Mb/s Port Capacity - Monthly Rental	OMR/month	1,260	945
	155 Mb/s Port Capacity – Disconnection fee	OMR	4,410	15
	Number Implementation - Fixed Network	OMR/order	300	300
	Number Implementation - Toll-free number	OMR/order	300	300
	Number Implementation - Mobile phone numbers (MSISDN)	OMR/order	300	300
	Number Implementation - Premium rate numbers	OMR/order	300	300
	Number Implementation - Other numbers	OMR/order	300	300
	Establishment of a Point of Interconnection	OMR	3,500	503
	Annual rental charge of a Point of Interconnection	OMR/year	700	700

Table A.1: TRA's applicable wholesale charges [Source: TRA]

Annex B

List of International References Considered

In line with the methodology followed by the TRA in its determination of the wholesale charges, it has made use of international benchmarks to assess the reasonability and efficiency of Ooredoo's proposed charges. As part of this approach, the TRA has reviewed the applicable rates in a number of countries.

The countries covered in the benchmark have been included so as to achieve a sufficient representation of countries considered best practice (covering GCC, Middle East, American, Asian and European countries). The table below shows the list of countries that have been used for this analysis:

Region	Country
GCC and Middle East	Bahrain
	United Arab Emirates
	Jordan
Europe	Ireland
	Spain
	Romania
	Poland
	France
	United Kingdom
	Cyprus
	Italy
	Greece
Portugal	
Americas	Mexico
Asia	India
	Pakistan
TOTAL	16

Table B.1: List of countries included in the benchmark [Source: TRA]

The table below describes the specific sources that have been employed in each case, including the links to the relevant websites:

Country	Services	Reference Offer document	Date Released
Bahrain ³	Fixed Access and Interconnection	Batelco's reference offer – Schedule 3	17/10/2016
	Mobile termination	Reference Offer Orders on Bahrain Telecommunications Company B.S.C., Viva Bahrain B.S.C., and Zain Bahrain B.S.C. setting the regulated call termination rates	17/09/2015
United Arab Emirates	Fixed Interconnection	Interconnection prices issued on TRA UAE's website	01/10/2015
Jordan	Fixed Interconnection	Regulatory decision on charges for fixed interconnection services based on TSLRIC+ models	16/11/2011
Ireland	LLU and Leased Lines	eircom Network Price List	01/01/2017
	Fixed Access	open eir Access Reference Offer	October 2016
	Bitstream	open eir Bistream Service Price List	February 2017
	Fixed Interconnection	open eir Reference Interconnect Offer	30/01/2017
Spain	Fixed Interconnection	Oferta De Interconexión De Referencia Sobre La Red Telefónica Conmutada De Telefónica De España	2016
	Leased Lines	Oferta De Referencia De Líneas Alquiladas De Telefónica De España	2012
	WLR	Oferta de Acceso Mayorista a la Línea Telefónica (AMLT)	June 2015
	LLU	Oferta de Acceso al Bucle de Abonado De Telefónica De España	November 2014
Romania	Fixed Interconnection	Oferta de Referință pentru Interconectare a Telekom Romania Communications S.A	March 2016
Poland	Fixed Interconnection	TP Access Reference Offer Concerning Interconnection	23/11/2012
France	Fixed Interconnection	Offre de référence d'interconnexion d'Orange Téléphonie Fixe	21/09/2016
	Mobile Interconnection	Offre de référence d'interconnexion sur le réseau mobile métropolitain d'Orange	01/01/2017
	LLU	Offre d'accès à la boucle locale d'Orange	30/09/2016

³ The annual turnover based royalty fee of 0.8% applicable in Bahrain has been subtracted for all Bahraini figures presented in this Decision.

Country	Services	Reference Offer document	Date Released
United Kingdom	WLR	Openreach's website – WLR pricing	23/01/2017
	LLU	Openreach's website – Local Loop Unbundling pricing	23/01/2017
Cyprus	Mobile Access	Reference Offer for Access to the Mobile Network of Cyta	08/01/2016
Italy	Mobile Termination	Offerta Di Riferimento Di Telecom Italia - Servizio di terminazione delle chiamate vocali su rete mobile	28/10/2016
	Bitstream	Offerta Di Riferimento Di Telecom Italia - Servizi Bitstream e relativi servizi accessori	22/02/2016
	Leased Lines	Offerta Di Riferimento Di Telecom Italia - Servizi trasmissivi a capacità dedicata	30/10/2015
	Fixed Interconnection	Offerta Di Riferimento Di Telecom Italia - Servizi Di Raccolta, Terminazione E Transito Delle Chiamate Nella Rete Telefonica Pubblica Fissa	23/11/2016
	WLR	Offerta Di Riferimento Di Telecom Italia - Servizio Wholesale Line Rental	22/02/2016
Greece	LLU	OTE's Local Loop Unbundling Pricelist	05/10/2016
	Leased Lines	OTE's Wholesale Leased Lines Pricelist	05/10/2016
	WLR	OTE's Wholesale Line Rental Pricelist	05/10/2016
	Fixed Interconnection	OTE's Interconnection Pricelist	05/10/2016
Portugal	LLU	PT - Oferta de Referência para Acesso ao Lacete Local (ORALL)	31/08/2016
	Leased Lines	PT - Oferta De Referência De Circuitos Alugados (Orca)	03/10/2016
	Fixed Interconnection	PT - Oferta de Referência de Interligação	04/01/2017
Mexico	Fixed and Mobile Interconnection	Acuerdo de tarifas de interconexión DOF – TelCel y TelMex	2016
	Leased Lines	Acuerdo mediante la cual el pleno del Instituto Federal de Telecomunicaciones aprueba el modelo de costos del servicio mayorista de arrendamiento de enlaces dedicados locales, entre localidades y de larga distancia	13/06/2016

Country	Services	Reference Offer document	Date Released
		internacional que prestará Teléfonos de México S.A.B. de C.V. y Teléfonos del Noroeste S.A. de C.V.	
	LLU	Oferta de Referencia para la Desagregación del Bucle Local (Telmex)	2016
India	Submarine Cable Interconnect	Submarine Cable Landing Station-Reference Interconnect Offer For the Cable Landing Station at LVSB, Prabhadevi, Mumbai (Tata Communications)	2007
Pakistan	Fixed Access and Interconnection	Pak Telecom's Reference Interconnect Offer for Fixed-Line Operators	2007

Table B.2: Description of the sources considered in the benchmark [Source: TRA]

Given the wide range of countries included in the benchmark analysis, multiple different currencies are registered in the definition of the wholesale charges applicable which need to be converted to OMR. In doing so, the average 2016 exchange rate between each pair of currencies has been extracted from Oanda as presented below:

Country	Currency	Exchange Rate (OMR/local currency)
Bahrain	Bahraini Dinar	1.021
United Arab Emirates	Emirati Dirham	0.105
Jordan	Jordanian Dinar	0.543
Ireland	Euro	0.426
Spain	Euro	0.426
Romania	Euro	0.426
Poland	Polish zloty	0.098
France	Euro	0.426
United Kingdom	British Pound	0.520
Cyprus	Euro	0.426
Italy	Euro	0.426
Greece	Euro	0.426
Portugal	Euro	0.426
Mexico	Mexican Peso	0.021
India	Indian Rupee	0.006
Pakistan	Pakistani Rupee	0.004

Table B.3: Exchange rates considered in the determination of the equivalent OMRs of the regulated charges observed internationally [Source: Oanda]

The TRA notes that the benchmark tables presented throughout this Decision have extracted all the valid information from the benchmarked countries presented above. However, it is likely that in several occasions only a reduced subset of countries was reported in the benchmark tables; this could be the result of the benchmarked service's cost not being reported in the other countries analysed.

Annex C

List of Modifications Introduced in BULRIC Models

This annex lists the modifications introduced when updating the BULRIC models for fixed and mobile networks with latest data for 2015 so as to capture the actual realities of the market to the extent possible.

A.1. Model for mobile networks

The modifications introduced are:

- (i) Inputs update based on the information provided by Omantel and Ooredoo, including:
 - ❖ Demand
 - ❖ Coverage
 - ❖ Spectrum
 - ❖ 2G/3G/4G technological split
 - ❖ Royalty fees
- (ii) Calculation of MVNO services' costs
- (iii) Introduction of the dimensioning algorithms for the following resources: CCS/CPS Software and International Gateway (IGW)
- (iv) Introduction of the relationships between BU model's services and RAIO services

A.2. Model for fixed networks

The modifications introduced are:

- (i) Introduction of new RAIO services:
 - Sub-loop unbundling
 - Voice origination for prepaid calling cards
 - Voice termination for international incoming calls
 - MSAN charges per slot
 - Split for the voice domestic transit between single and double
- (ii) Inputs update based on the information provided by Omantel, including:
 - Demand
 - Royalty fees
- (iii) Minor formula adjustments in worksheets "10H CALC SERVICES COST", "10H CALC SERVICES COST" and "6C CALC DIM CIVIL INFRAS"
- (iv) Introduction of the dimensioning algorithms for the following resources: CCS/CPS Software, International Gateway (IGW) and Calling Card Platform (CCP)
- (v) Introduction of the relationships between BULRIC model's services and RAIO services