F. No. 15-30/18(CA)/PTA/316 16th November 2018

Determination on Mobile Termination Rate

Dates of Hearings: 25th October 2017 and 18th October 2018

Venue of Hearings: PTA H/Qs, Islamabad

The Authority Present:

Muhammad Naveed	Chairman
Ali Asghar	Member (Compliance & Enforcement)

The Issue:

"Mobile Termination Rate"

Determination of the Authority

1. Introduction

1.1 The Pakistan Telecommunication Authority (the "Authority") is a body corporate established pursuant to Section 3 of the Pakistan Telecommunication (Re-organization) Act, 1996 (the "Act"), which performs, among others, the following functions:

i. regulate the establishment, operation and maintenance of telecommunication systems and the provision of telecommunication services in Pakistan;
ii. promote and protect the interest of users of telecommunication services in Pakistan;
iii. promote the availability of a wide range of high quality, efficient, cost effective and competitive telecommunication services throughout Pakistan;
iv. regulate arrangements amongst telecommunication service providers of sharing their revenue derived from provisions of telecommunication service; and

v. regulate competition in the telecommunication sector and protect consumer rights.

1.2 Whereas under clause (h) of sub-section (2) of Section 5 of the Act, the Authority is empowered to provide guidelines for, and determine, the terms of interconnection arrangements between licensees where the parties to those arrangements are unable to agree upon such terms.

1.3 Sub-rule (11) of Rule 13 of the Pakistan Telecommunication Rules 2000 (the "Rules") requires the Authority to take into account the following matters when determining the terms and condition of an interconnection agreement, including the interconnection charges:

a) the promotion of non-discrimination between operators in similar circumstances providing similar services;
b) the promotion of competition;
c) relevant operators should allow flexibility to the other operators as to the points of connection, manner of conveyance of traffic and the routing of intelligence;
d) protection of the interest of customers;
e) maintenance of the public switched network and inter-operability of services; and
f) the relative market position of the parties.

1.4 Sub-rule (4) of Rule 16 of the Rules provides: *"The SMP operator's interconnection charges shall, as soon as practicable, be based on LRIC in the manner determined by the Authority and shall include a reasonable rate of return on LRIC costs but the SMP operator shall not be obliged to charge on the basis of LRIC until it has put in place the necessary accounting and management information systems which shall enable it to do so in accordance with a reasonable time table determined by the Authority. The SMP operator shall also be entitled to recover a contribution to its common costs in the manner determined by the Authority. For these purposes, "common costs" means costs that are incurred in connection with the production of multiple products or services and remain unchanged as the relative proportion of those products or services varies. Pending the introduction of LRIC in accordance with this sub-rule the SMP operator's interconnection charges shall be based, as far as possible, on cost-oriented interconnection charges for similar* *services provided by telecommunication operators in other countries providing comparable telecommunication services to those provided by the SMP operator."*

1.5 Clause 5.7 of the Telecommunication Policy 2015 provides following principles of interconnection charges:

a) The obligation on licensees to interconnect for the origination and termination of telephony traffic remains, so that calls may be established between any two numbers in Pakistan and/or between international calls originated and terminated within/outside Pakistan.
b) Operator specific fixed and mobile termination rates will be determined for those operators with SMP in a relevant fixed or mobile market. A clear and open schedule of charges should be first encouraged and subsequently will be overseen by the PTA to ensure fair and competitive market.
c) For licensees designated as SMP in the relevant market, the schedule of charges and the standard termination charge will be determined using a cost orientation approach appropriate to pricing in a wholesale market. PTA will therefore propose appropriate cost regime for interconnection and apply it to licensees that have SMP in the relevant market. This regime will have due provisions for IP based interconnection in line with international best practices applied to such interconnection in Next Generation Networks (NGN). Any other upcoming technology may also be considered.
d) Termination rates and schedules of charges will be reviewed every three years or earlier if the market conditions so require. Costs will take account of documented plans for infrastructure and service roll out that have been formally approved by the licensee concerned. If such plans change materially over the period during which the termination rate and other charges apply, the termination rate and other charges will be re-determined. The use of such termination rates is intended to promote the roll out of networks.
e) Operators that are not subject to SMP in the relevant market may use commercially agreed termination rates. All licensees will inform PTA of applicable termination rates and any changes to those rates. PTA will arbitrate between the parties if required.

1.6 Above interconnection obligations on individual operators will be subject to any action taken as a consequence of the application of the Competition Rules to be developed by MoIT under Clause 5.1 of Telecommunication Policy.

1.7 Clause 9.4.1 of the Policy requires PTA to ensure that all licensees provide affordable services. PTA is further required to review the appropriateness and adequacy of telecom services prices available from licensees on a regular basis. The prices will be on the basis of cost plus a reasonable rate of return.

1.8 Pursuant to the powers given under clause (h) of sub-section (2) of Section 5 of the Act, the Authority issued the Interconnection Guidelines, 2004 (the "Guidelines"). The Guidelines provides certain principles of interconnection, which includes:

i. interconnection and related services and facilities shall be provided on the basis of unbundled network elements and charged accordingly. A requesting operator shall only pay for the network components or facilities of the interconnection that it requires;
ii. the operators shall not unfairly discriminate the terms of interconnection among different operators. An operator shall offer same interconnection terms to other operators as compared to his own similar operations or affiliates;
iii. charges for interconnection services shall be cost-oriented;
iv. cost of inefficiencies of an operator should not be passed on to other operators through higher interconnection charges; and
v. interconnection arrangements should encourage efficient and sustainable competition.

1.9 Clause 18 of the Guidelines requires the Authority to approve the level and structure of interconnection charges. As per clause 18.2 of the Guidelines, interconnection charges are to be based on following principles, namely:

a) The structure of interconnection charges shall reflect the behavior of the underlying costs. Relevant interconnection costs may have different relationships with interconnection activity i.e. some costs may be fixed while others may vary with usage. To the maximum possible extent, fixed costs shall be recovered through fixed charges while variable costs shall be recovered through a per unit charge related to the underlying activity. Moreover, peak and off-peak charges should be set where there is a significant difference in costs.

b) Interconnection charges shall be set on objective criteria and follow the principle of transparency and cost orientation. The burden of proof that the charges are derived from relevant costs, including a reasonable rate of return on investment, shall lie with the operator providing interconnection to his network. The Authority has the right to demand full justification for the interconnection charges being demanded by the operator providing interconnection. The interconnecting operator may set and charge different rates, terms and conditions for providing interconnection for different categories of telecommunications services, where such differences can be objectively justified on the basis of the type of interconnection provided. The Authority shall ensure that such differences do not result in distortion of competition.
c) Interconnection charges shall be sufficiently unbundled to ensure that an operator requesting interconnection is not required to pay for network elements or facilities not required for the service to be provided.
d) Interconnection charges shall not include hidden cross-subsidies, particularly of anti-competitive nature.
e) Interconnection charges shall include a fair share of joint and common costs and costs incurred in providing equal access and number portability, and of the cost of ensuring essential requirement.

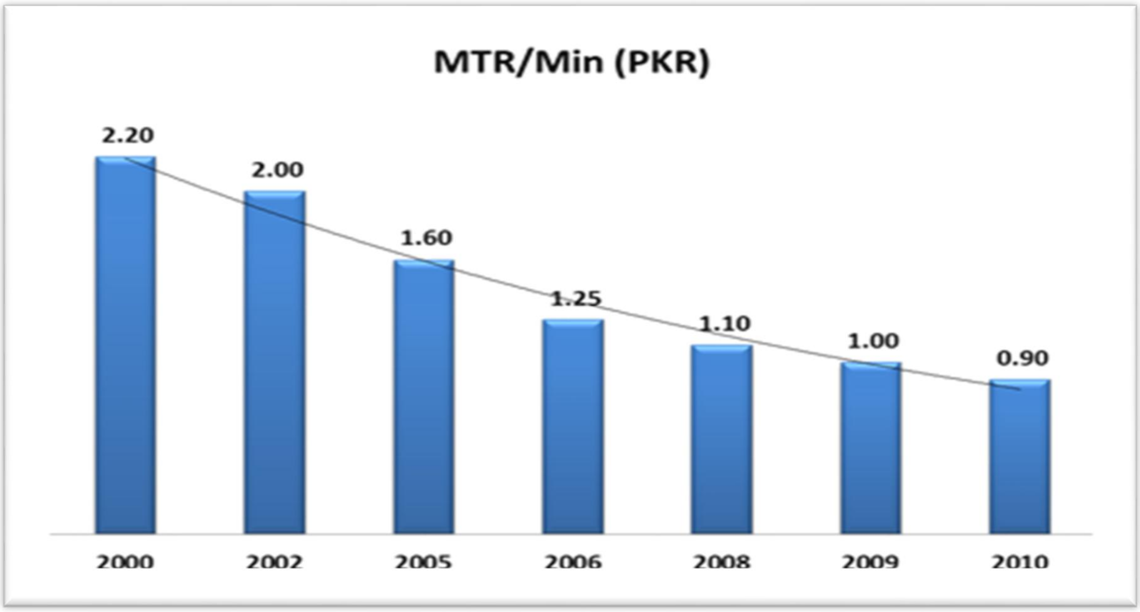
1.10 The Guidelines also provide that the interconnection charges that do not conform to the Guidelines may be varied by the Authority. Clause 18.6 of the Guidelines provides that where adequate cost information is not readily available, the Authority may establish interconnection charges on the basis of benchmarking.

2. Background

2.1 PTA determined MTR of Rs. 2.20 per minute w.e.f. 1st December 2000 after the implementation of Calling Party Pays (CPP) regime. Later on, the rate was revised to Rs. 2.00 per minute in 2002 on the basis of international benchmarking for a period of two years. In July 2005, PTA determined fixed-to-mobile and mobile-to-mobile interconnection charges on the basis of Fully Allocated Cost (FAC) and international benchmarking. Resultantly, a glide path was given to the industry wherein MTR was reduced to Rs. 1.60 per minute from August 2005 to June 2006 and Rs. 1.25 per minute from June 2006 to June 2007. In 2006, PTA engaged services of renowned consultancy firm Ovum Plc. for determination of interconnection charges on the basis of Bottom-up Long Run Incremental Cost

(LRIC) and Top Down Fully Allocated Cost (FAC). Based on the study results, PTA vide its Determination dated 14th May 2008, reduced MTR to Rs. 1.10 per minute from June 2008 to December 2008, Rs. 1.00 per minute from January 2009 to December 2009 and Rs. 0.90 per minute from January 2010.

Figure-1



Source: PTA

2.2 Pakistan's cellular mobile sector has undergone substantial changes since the last review of MTR in 2008. The introduction of 3G, 4G LTE i.e. 'mobile broadband' is undoubtedly the foremost landmark. Cellular teledensity has increased from 54.6% in June 2008 to 73.24% as of September 2018 and ARPU is around USD 2 per SIM. Cellular mobile subscribers now stand at 152 million as of September 2018 as compared to 88 million in 2008. More importantly, telecom revenues have jumped from Rs. 279.6 billion in 2008 to Rs. 464 billion in 2017. There have also been significant regulatory and market developments. Mobilink and Warid have merged into a single entity thereby reducing the number of cellular operators to four. Consumer tariff structures have also changed drastically. Over the years, the differential in the on-net and off-net call rates has increased and operators are offering an increasing number of on-net offers including free on-net calls. MTR plays a critical role in driving the retail tariffs especially for off-net calls. In view of the changing market structure of the cellular mobile segment and considering that the last change in MTR was made in 2010, a review of the existing MTR @ Rs. 0.90/min is required in Pakistan.

3. Consultation on MTR

3.1 PTA issued consultation paper on MTR on 29th September 2017 using benchmarking analysis for the determination of MTR in Pakistan. Cost based approach is an appropriate method for determining MTR, however, choosing an alternative approach i.e. international benchmarking is justified in the current scenario for Pakistan where cost-based data is not available. There are number of countries that have adopted benchmarking methodology for determining termination rates such as Australia, New Zealand, Namibia and Bahrain. According to International Telecommunication Union (ITU), benchmarking is the second most adopted approach by the telecom regulators after LRIC model to determine MTR. Furthermore, Interconnection Guidelines, 2004 allows PTA to determine termination rates on international benchmarking in the absence of cost-based estimates. Therefore, PTA proposed in the Consultation Paper to determine an interim MTR based on international benchmarking and in the meanwhile, a cost based interconnection study would be carried out. Subsequently, MTR may be reviewed / determined in the light of results of cost-based study.

Benchmarking Analysis

3.2 In order to determine MTR through international benchmarking, country case studies were carried out and a total of 7 countries were selected in the benchmarking on the basis of comparable economic/telecom markets and regulatory environment. A set of both economic and telecom indicators were identified in a comparative table.

3.3 To calculate MTR for Pakistan using the benchmarking approach, MTR data of the selected countries is used. MTRs of sample countries in their local currencies were converted to US cents using PPP (Purchasing Power Parity) adjustments applied to 60% of each country's MTR to allow for the differences in the relative cost of living between benchmark countries (see Table 1 below). [1] This proportion was based on a standard assumption used when benchmarking, that broadly 60% of the

[1] Ovum study in 2008 for PTA on the interconnection charges in Pakistan has also applied PPP adjustment to 60% of MTR price.

annualized costs of telecommunications operators are represented by labor costs and thereby reflective of local rates of pay and the cost of living.

Table 1: Benchmarking Analysis

Country	MTR/min in local currency	MTR/min (PPP adjusted in US cents)	MTR/min US cents	MTR/min US cents (adjusted w.r.t. Pak ARPUs)	ARPU (US$)	PPP Conversion Rate
India	0.14	0.572	0.2116	0.1811	3.40	17.233
Bangladesh	0.18	0.455	0.2242	0.2966	2.20	29.524
Sri Lanka	0.50	0.719	0.3298	0.2068	4.64	51.082
Thailand	0.27	1.640	0.7649	0.1954	11.39	12.146
Malaysia	0.0365	1.826	0.8090	0.1153	20.42	1.438
Australia	0.017	1.237	1.2879	0.1018	36.80	1.413
United Kingdom	0.005	0.677	0.6098	0.0957	18.55	0.693
Pakistan	0.90	2.146	0.8585	0.8585	2.91	29.951
Source: PTA's Consultation Paper on MTR, September 2017						

3.4 Average benchmark MTRs have been calculated using mean and median of PPP adjusted MTRs and compared with the PPP adjusted MTR of Pakistan. It is observed that current MTRs of Rs. 0.90 in Pakistan is around 110% higher than the mean benchmark MTR and is around 198% higher than the median benchmark. Resultantly, MTRs for Pakistan are calculated as Rs. 0.43 and Rs. 0.30 per minute by mean and median benchmark respectively.

Table 2: Benchmark MTR for Pakistan

	MTR / min (PPP adjusted in US cents)		MTR / min in US cents (adjusted w.r.t. Pak ARPUs)	
	Average MTR / min	**Median MTR / min**	**Average MTR / min**	**Median MTR / min**
	1.018	0.719	0.170	0.181
Proposed Pakistan MTR in PKR	0.43	0.30	0.179	0.190

3.5 Average Revenue per User (ARPU) in cellular mobile markets of the sample countries are between USD 2.2 to USD 36.8. For alternate benchmarking, ARPUs of sample countries have been used relative to Pakistan's ARPU. Using this benchmarking method, mean benchmark MTR is Rs. 0.179 and median is Rs. 0.190.

Issues for Consultation

3.6 Keeping in view the above analysis on MTR, following issues were circulated to the industry for consultation:

i. The benchmarking analysis undertaken in this paper shows that MTR calculated for Pakistan is between Rs. 0.30 to Rs. 0.43 per minute as per PPP adjustment. This shows that current MTR of Rs. 0.90 per minute is 111% to 198% higher than the calculated MTR using benchmarking. Therefore, following is proposed:
   a. As an interim measure, determination of MTR in Pakistan @ Rs. 0.80 per minute from 01st December 2017 to 30th November 2018, and @ Rs. 0.70 per minute from 1st December 2018 onwards.
   b. PTA will undertake cost-based study to review and determine termination rates as per Telecommunication Policy 2015.

ii. Reduction of MTR is expected to help operators to offer better off-net call rates and reduce the current differentials of on-net and off-net rates.

iii. Reduction in MTR is also expected to reduce grey traffic as it will decrease incentive for illegal termination.

4. Operators' Comments on the Consultation Paper and Authority's Response

4.1 After receiving industry comments on the consultation paper, first hearing was held on 25th October 2017. As per written comments and discussion during the first hearing, Telenor and Jazz were not in favour of change in MTR, whereas, Zong suggested MTR @ Rs. 0.30 and Ufone proposed MTR @ Rs. 0.70 with gradual reduction to Rs. 0.30 in next three years and LDIs proposed MTR@ Rs. 0.30. In view of divergent views, further comments from the stakeholders were sought, however, the operators reiterated their earlier stance. To conclude the review of MTR, 2nd Hearing was held on 18th October 2018 at PTA Headquarters. Operators' comments

/observations and proposed MTR are provided in the preceding section along with PTA's response.

PMCL's Comments

4.2 PMCL is of the view that voice MTR should not be reviewed in isolation, rather the regulator should be looking at the profitability challenges and ARPU levels of telecom operators. PTA is undertaking the study in isolation and MTR reduction in short term may result positive impact for few operators, but it could be detrimental in the long term for all operators.

4.3 Studies indicate that*, there* is *no or limited evidence of any link between MTR reduction and* reduced mobile prices, increased usage and market share of smaller mobile network operators (*Frontier Economics, 2012)*. Further, there is no clear link between reduction in MTR and reduction in retail prices particularly in mature markets (Ovum 2017)

4.4 Due to devaluation of Pak Rupee, the MTR should be increased in the same ratio as cost of interconnection is predominantly composed of imported equipment paid in USD. So, it is proposed that either leave the current MTR unchanged @ Rs. 0.90 per minute until a cost model can be completed or increase MTR according to benchmarking provided by PMCL, which has estimated average MTR of USD cents (PPP adjusted) 2.43, which is 12% higher than the current MTR in Pakistan of USD cents (PPP adjusted) 2.14.

4.5 Further, the countries selected in 2017 benchmarking by PTA are not reasonably comparable. Some of the methods that can be used to select countries for MTR benchmarking are Re-evaluation on the basis of PTA/Ovum Selected countries in 2008, Benchmarking guide by ITU, Comparable GDP or Comparable ARPUs and subscriber Base.

PTA's Response:

4.6 In the consultation paper, PTA has proposed very conservative reduction in MTR compared to the required reduction as per benchmarking results.

4.7 As per Telecommunication Policy 2015 and Pakistan Telecommunication Rules 2000, PTA is required to determine mobile termination rates close to cost of interconnection. In this regard, it is worth mentioning here that PTA's determination dated 14th May 2008 had already determined MTR through LRIC model for the year 2010 in the range of Rs. 0.69-0.73 per minute. Further, it is also well-established fact that cost of networks including interconnect of mobile operators has substantially decreased since PTA's last determination of MTR in 2008. Therefore, circumstances require for regulatory intervention. Moreover, PTA has adopted a conservative approach and proposed glide path reduction instead of drastic reduction in MTR.

4.8 In order to address concerns of Jazz on the selection of countries for benchmarking, PTA has also carried out an extensive exercise to calculate MTR with a larger sample of countries for benchmarking analysis. Comparable countries have been included in the exercise using various benchmarking parameters including GDP per capita, population, population density, mobile penetration and subscriber base. Average benchmark MTRs have been calculated using mean and median of PPP adjusted MTRs and compared with the PPP adjusted MTR of Pakistan using the methodology as explained in section 3 above. Resultantly, MTRs for Pakistan are calculated as Rs. 0.48 and Rs. 0.42 per minute by mean and median benchmark respectively (see Table 3), which are close to earlier benchmarking reported in the consultation paper. Further, benchmarking provided by Jazz is not relevant as it mainly consists of East European countries and has not applied a factor of 60% for PPP adjustment as per the methodology of Ovum study 2008. Therefore, the Authority cannot accede to the request of Jazz to increase MTR even after increasing the sample as suggested by Jazz.

Table 3: Benchmarking Analysis using a larger sample of countries

Sr. No.	Country	MTR/min in local currency	MTR/min US cents	MTR/min (PPP adjusted in US cents)	PPP Conversion Rate
1.	**India**	0.06	0.0822	0.233	17.97
2.	**Bangladesh**	0.14	0.1674	0.327	32.29
3.	**Sri Lanka**	0.50	0.2900	0.672	53.94
4.	**Thailand**	0.19	0.5758	1.175	12.062
5.	**Malaysia**	0.0292	0.7002	1.488	1.45
6.	**Australia**	0.017	1.2319	1.223	1.396
7.	**United Kingdom**	0.005	0.6579	0.698	0.69
8.	**Philippines**	0.5	0.9414	2.005	18.420
9.	**Algeria**	1.093	0.9188	2.423	31.9

10.	**Austria**	0.008	0.0663	0.612	0.820
11.	**France**	0.007	0.8046	0.853	0.790
12.	**Germany**	0.011	1.2644	1.363	0.770
13.	**Indonesia**	261.63	1.7608	4.354	4,300.70
14.	**Italy**	0.010	1.1264	1.267	0.720
15.	**Japan**	3.09	2.7263	2.966	98.870
16.	**Kenya**	0.99	0.9746	1.599	49.140
17.	**Korea**	14.5	1.2906	1.570	825.720
18.	**Mexico**	0.071	0.3575	0.644	8.500
19.	**Nigeria**	3.9	1.0730	2.290	125.720
20.	**Portugal**	0.004	0.0022	0.394	0.610
21.	**Russia**	0.840	1.2720	2.606	24.030
22.	**South Africa**	0.120	0.8457	1.494	6.230
23.	**Spain**	0.007	0.8046	0.968	0.650
24.	**Tanzania**	15.6	0.6810	1.573	719.820
25.	**Ukraine**	0.02	0.0713	0.187	7.550
26.	**Zambia**	0.2	1.7153	3.694	3.990
27.	**Pakistan**	0.90	0.6767	1.947	32.207
Note: Figures in this table are as per latest available information. [2]					

Telenor's Comments:

4.9 Change in market share of operators is based on operator efficiency and innovation in service design. Operators losing market share is due to competition and does not warrant a reduction in MTR.

4.10 Any reduction in MTR will severely hit the industry revenues at top-line irrespective of the market share. It is important to note that the pattern of off-net calling is function of competitive packages being offered by any operators.

4.11 It is critical for business viability not to reduce MTR from the current basis. As operators obtain profits from having termination charges set at higher levels and these profits are subsidized in other services (subscription or handsets – going

[2] Data on PPP conversion rates is obtained from World Economic Forum online database available at https://www.imf.org/external/pubs/ft/weo/2018/01/weodata/download.aspx. Data on MTR has been gathered from relevant regulatory authorities and BEREC report on termination rates at European Level available at https://berec.europa.eu/eng/document_register/subject_matter/berec/reports/8162-termination-rates-at-european-level-january-2018.

forward the offering of large screen devices) in order to encourage more people to join network. However, with lower MTRs, MNO derive less interconnection revenue, implying a smaller transfer to the end user, and so increase retail prices to rebalance profits.

4.12 In 2012, Frontier Economics was commissioned by Vadafone to determine whether MTR cut has reduced mobile prices, increase usage and helping smaller mobile network operators to be price competitive in EU countries, findings are;

- There is no evidence that faster MTR cuts have led to lower mobile prices and increased usage.
- There is limited evidence of any link between MTR reductions and the market share of smaller operators.
- Accelerated MTR cuts could be detrimental to network investment and mobile penetration.

4.13 Reduction in MTR will increase the incentives for grey traffic on mobile networks other than Telenor Pakistan as other network have created artificial barrier to access their users through different measures. So, in Telenor's view, MTR may not be reviewed as the current determined rate of PKR 0.90 is balanced in a way to promote economic efficiencies.

4.14 Furthermore, as operators have stringent budgets and investment plans are locked for the year, any change in MTR should become effective from 1st January 2019 and should remain unchanged for a period of at least three years because operators are planning to renew their GSM licenses in 2019. Also, a separate international termination rate be implemented at USD 0.025 for both mobile and fixed-line licensees.

PTA's Response:

4.15 A review of European market by Body of European Regulators for Electronic Communications (BEREC)[3] in its latest report published on 14th June 2018 has shown that still a significant number of regulators determine MTR based on BU LRAIC+ model or benchmarking.

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[3] https://berec.europa.eu/eng/document_register/subject_matter/berec/reports/8162-termination-rates-at-european-level-january-2018

4.16 In the region, India on 19th September 2017 has reduced MTR from IND Rupee 0.14 per minute to IND Rupee 0.06 per minute (USD cents 0.08) with effect from 1st October 2017 to 31st October 2019 and zero MTR with effect from 1st January 2020. Bangladesh has further reduced MTR from Tk 0.18 to Tk 0.14 (USD cents 0.17) per minute, including Tk 0.04 for the interconnection Exchange operator and Tk 0.10 for the terminating operator. It may also be noted that Bangladesh has directed CMOs not to discriminate between on-net and off-net calls and set uniform minimum rate for on-net and off-net calls at Tk 0.45, thereby, removing disparity between on-net and off-net call rates.

4.17 Above in view and the benchmarking analysis of PTA presented in its Consultation Paper on MTR and in the above section, it is evident that current MTR of Rs. 0.90 per minute in Pakistan is way above the optimal level and counterproductive to achieve economic efficiencies in the market. It is, therefore, imperative to review the MTR downwards immediately using glide path approach followed by a cost-based determination of MTR. Furthermore, it is a generally accepted principle that interconnection charges / termination rates cannot be considered as a source of revenue, rather should be treated as a reimbursement for call being terminated on other network. It has also been observed that some of the operators are discounting their on-net traffic as they are generating more revenues from off-net traffic due to traffic imbalance.

4.18 PTA is of the view that lowering of MTR will facilitate a more competitively neutral framework among the operators to compete in. This would allow more competitive and innovative offerings such as offering of free off-net bundles etc. which would be beneficial for the consumers.

4.19 With regards to Telenor's observations on international terminations rate, a separate industry consultation can be carried out to review the rates.

CMPak (Zong)'s Comments:

4.20 This entire submission should consider the fact that a mere reduction of 10 paisa in the next calendar year would do little to nothing in passing on real benefits in the form of reduced off-net prices/calling options to consumers and more likely to favor operators as a means to 'heal' the high MTR cost borne for the past many years.

4.21 The MTR should be adjusted downwards to match the proposed PPP adjusted benchmarking analysis. Proposed reduction in MTR is PKR 0.30 from 1st Dec 2017 to 30th Nov 2018, followed by cost-based MTR determination.

PTA's Response:

4.22 We understand that an immediate reduction of MTR by 10 paisa may not have major impact on the off-net prices, however, a gradual reduction in MTR is expected to have reasonable impact on the off-net prices. Therefore, as per international best practice, a glide path approach is proposed, which is more appropriate instead of a drastic change proposed by CM Pak i.e. from Rs. 0.90 to Rs. 0.30.

PTML (Ufone)'s Comments:

4.23 PTML engaged an independent international consultant for conducting its costing study based on Fully allocated cost model; ''FAC''. As per the study estimates, the cost of termination for Ufone would be ~ PKR 0.25 per minute. The same would be even lower for larger operators. It's worth mentioning that through LRIC, this cost was determined at PKR 0.69-0.73 per minute in year 2008 as per PTA's decision dated 25th May 2010. High MTR has resulted in the shift of balance of payment from the smaller operators to the larger operators.

4.24 In PTML's view, reduction in MTR will not address issue at hand with the smaller operators in Pakistan telecom market w.r.t their competitiveness and sustainability. It is imperative that in conjunction with the proposed wholesale price remedies attention and appropriate intervention is taken w.r.t the principles of setting retail tariffs and in particular on-net and off-net tariffs.

4.25 PTA should adopt following measures with the immediate effect.

- A phased reduction of MTR pending the completion of LRIC + cost models.
- Imposition of asymmetric interconnection MTR in favour of smaller CMO's as a percentage uplift. The following profile (glide path) is proposed as a 'percentage uplift on the MTR'

Years	Larger Operator(s)	Smaller Operator(s)
2018	PKR 0.70	~130.0% (PKR 0.90)
2019	PKR 0.60	~122.5% (PKR 0.75)
2020	PKR 0.50	~115.0% (PKR 0.60)
2021	PKR 0.40	~107.5% (PKR 0.45)

- Imposition of retail price controls establishing the principles of tariff setting including but not limited to, the collapse of on-net off-net price differentials, the enforcement of no cross subsidy rules contained in the Telecom Act, linking retail price to costs to ensure the economic space in tariffs and bundles is sufficient for economically efficient competition to occur and tariffs of dominant operators are replicable and Data price floors linked to cost of provision, in the wake of shift of voice traffic to IP based communication.
- Market review and cost study through independent consultant for introduction of asymmetry in interconnection regime.

4.26 Furthermore, to mitigate the “club effects”, it is important to introduce retail price control and cost-based study.

4.27 On-net off-net price differentiation has been one of the major strategies used by the operators to gain market share, resulting in lowering of on-net call charges in the form of promotional offers and bundles. In many markets, the regulatory authorities have seen this as discriminatory and anti-competitive. Given Jazz and Telenor’s market positions, PTML therefore believe that it is essential that the Authority carry out an immediate market review and impose appropriate and necessary regulatory remedies to maintain effective competition in the market.

4.28 Curien conducted a review of literature concerning on-net off-net price differentiation. It concluded that on-net price cuts are found to have a significantly greater negative impact on smaller operators in terms of profit per subscriber.

4.29 Various approaches used by regulatory authorities to combat structural anomalies such as club effect and are proposed by PTML as regulatory remedies to be taken by PTA are:

- Determination of Mobile termination rates (Cost based study/ Benchmarking)
- Restriction on on-net discounting/ linking of MTRs to on-net retail prices whereby PTML proposes PTA to take other regulatory measures in parallel such as linking of the MTRs to on-net retail prices or introducing price floors by concluding the consultation on on-net and off-net tariffs by CMOs. PTML strongly feels that effective retail tariffs for mobile off-net calls should be no greater than those set for on-net calls. Furthermore, the minimum retail price should be no less than the sum of the cost of call origination and call termination.
- Introduction of Asymmetry in wholesale Prices (MTRs) which means to reduce the MTRs of larger operators ahead of reducing smaller operators’ MTRs. The practice has been adopted in many advanced countries allowing smaller

operators’ MTR to decline more slowly, and at a later date, than the MTRs of their larger competitors.
The objective of this so called delayed reciprocity is to maintain the goal of symmetric termination rates but with an immediate but progressive effect on the last entrant over the next period so that the new entrant can benefit from a temporary asymmetry which will help reduce the club effect.

- Delayed Reciprocity: PTML is of the view that if glide paths applied to all operators without distinguishing those experiencing more economies of scale from those still facing high unit costs, then the latter would be strongly disadvantaged. In order to avoid regulation introducing distortions in market competitiveness, MTR levels would ideally follow the same time frame observed for economies of scale. In practice, such regulation can take the form of a delay of the application of glide-paths to operators’ MTRs.
  The idea of ‘’Delayed reciprocity’’ was originally conceived by European NRAs to set up a workable regime for regulation of termination rates in cases where reliable cost model results were not yet available.

4.30 PTML fully endorses PTA initiative to review MTR in Pakistan. However, on its own it is insufficient to correct the market structure problems that have developed in the cellular mobile services market and narrow the gap between on-net and off-net charges and protect smaller operators from market foreclosure. PTA is strongly urged to consider not only the wholesale remedies such as an MTR review but also retail remedies that address the retail differentials between on-net and off-net call prices. At present, there is no retail tariff intervention as indicated by PTA itself in the Mobilink Warid Merger Order (Sec. 7.1.2.16-v) and other information memorandums of successful spectrum auctions; therefore, the on-net off-net tariffs have evolved to a point of patent discrimination. In conjunction with the proposed MTR review it is essential that retail price controls and cost-based study are also introduced at the same time in order to mitigate the negative impacts of club effects.

PTA’s Response:

4.31 PTA recognizes the concerns of Ufone being a smaller operator with regards to price differentials between on-net and off-net calls and on-net discounting in Pakistan’s mobile market. PTA is aware of above mentioned factors and it is expected that reduction of MTR through this determination and subsequent review of interconnection charges based on cost-based model will help in addressing above issues.

4.32 PTA appreciates Ufone for sharing the results of its cost modelling, which are supportive of PTA's proposed review of MTR in Pakistan. However, PTA is of the view that asymmetric MTR in the absence of cost-based study is not supported at this stage because current consultation is based on benchmarking analysis and proposing an interim measure till the determination of cost-based MTR. Ufone's proposal of asymmetric MTR would be reviewed during next proposed review of MTR on cost-based interconnection models.

PTCL's Comments:

4.33 PTCL is of the view that MTR determination will narrow down the gap between the on-net and off-net calls in order to encourage competition and discourage grey traffic. Price differential of on-net/off-net calls due to higher MTR provides a cost-effective way (use of on-net bundle offers) to terminate illegal international traffic on cellular networks.

4.34 Higher MTR discourages customers of fixed line operators to call to mobile operators thus reducing the profits of fixed line operators. Asymmetry in MTR and FTR favor mobile operators to subsidize on-net calls. Also, MTR reduction is expected to (1) eliminate Club effect; and (2) provide level playing field to small operators.

4.35 In 2008, PTA provided premium over actual cost in its MTR determination. The actual cost was in the range of Rs. 69 to Rs. 0.73 for year 2010. PTCL believes that MTR should be gradually reduced to PKR 0.30, with a gliding path as provided below:

Effective Date	**MTR (PKR per minute)**
1st December 2017	0.70
1st May 2018	0.60
1st December 2018	0.50
1st May 2019	0.40
1st December 2019	0.30

4.36 In parallel, PTA should start the costing study for termination rates without any delay as directed in the Telecom policy 2015.

PTA's Response:

4.37 PTA is aware of differentials of on-net and off-net calls and on-net discounting in Pakistan market and expects that proposed reduction of MTR vide this determination and subsequent review of interconnection charges based on cost models will help in addressing above issues. As mentioned earlier, at this stage, PTA does not support asymmetric MTR in the absence of cost-based study, and the same may be reviewed in the phase of MTR review based on cost models of interconnection. As per best international practice, PTA supports a glide path approach for the reduction in MTR, however, drastic reduction of MTR in this review is not agreed on the basis of benchmarking analysis.

NTC's Comments:

4.38 The proposed MTR calculated for Pakistan is acceptable by NTC as interim measure, which may be further determined not less than once every two years. On-net off-net differentials may be equalized i.e. flat rates may be offered for both in future. Furthermore, a policy decision may be made to neutralize market and discourage monopolistic competition by CMOs which should be cancellation of LDI Licenses offered to CMOs over the period for better economic growth and to encourage new investments in telecom sector.

PTA's Response:

4.39 PTA acknowledges concerns on the differentials of tariffs for off-net and on-net calls and expects that current review of MTR will have positive impact on the industry in terms of lower off-net tariffs and competition.

LDI Operators' Comments:

4.40 ADG LDI (Pvt) Ltd, Circlenet (Pvt) Ltd, 4B Gentel International (Pvt.) Ltd, Telecard Ltd, Worldcall Telecom Ltd, Red Tone Communications (Pvt) Ltd, Wisecom Communications (Pvt) Ltd, in their joint letter and Multinet Pakistan (Pvt) Ltd in its individual letter have appreciated PTA's effort to review MTR, and noted following findings of the consultation paper:

- The last review on MTR was conducted back in 2008 whereas, as per Clauses 5.1.12 and 5.7.4 of the Telecom Policy 2015, the MTR should be reviewed at least once every two years

- Pakistan has the highest MTR as per PTA's own Benchmarking Analysis
- PTA's Benchmark Analysis justified a lower MTR

4.41 PTA's proposed MTR of Rs.0.80 is not in line with the findings of its own consultation paper, notably:

- Proposed reduction of Rs. 0.10 in the MTR will not alter the fact that Pakistan will continue to have the highest MTR in the region and amongst the eight countries mentioned in PTA's study.
- The proposed MTR of Rs. 0.80 will not give relief to ex-patriot.

4.42 Following was recommended by LDI operators:

- The MTR should be Rs. 0.30 for adhoc period; and
- Cost based study should be concluded in 3 to 6 months as mentioned in subject letter.
- A meeting at PTA headquarters with LDIs is requested before conclusion of MTR.

Dancom's Comments

4.43 Dancom is of the view that Pakistan has the highest MTR as compared to South and South-Asian Countries till date. The proposed MTR of Rs. 0.80 is not supported for the reasons such as increase in customer base of mobile operators and for past 8 years, the MTR is kept at same level i.e. Rs. 0.90. In view of this, we recommend that:

- The MTR should be between PKR 0.20 to 0.30.
- Termination rate to be commercially negotiated on volume basis
- PTA shall determine an upper cap limit for MTR of PKR 0.30
- It'll be mandatory for all operators to provide interconnection to other operator.

4.44 It is also recommended that fixed line termination rate should also be reviewed accordingly.

Wateen Telecom's Comments

4.45 Wateen has stated that the grounds for MTR review are based on true facts and figures, however, proposed MTR of Rs. 0.80 is not in line with the findings of the consultation paper. Proposed reduction of Rs. 0.10 in the MTR will not alter the fact that Pakistan will continue to have the highest MTR in the region and amongst the eight countries.

4.46 In view of the aforesaid fact, it is strongly recommended that the revised MTR should be Rs. 0.50 and cost-based study should be concluded in 3 to 6 months.

PTA's Response:

4.47 PTA appreciates LDI operators for supporting PTA to initiate consultation on the review of MTR and understand that an immediate reduction of MTR by 10 paisa may not have major impact on the industry, however, a gradual reduction in MTR is expected to have reasonable outcome. As per international best practice, a glide path approach is adopted, which is more appropriate instead of a drastic change proposed by LDI operators. Further review of MTR will be carried out using cost-based models for interconnection services.

COMSATS's Comments:

4.48 Today, almost all of the international traffic as well as significant part of domestic traffic is carried over IP. It is therefore critical that the Authority takes into consideration the costs associated with IP interconnection. The cost of carrying voice on IP networks is negligible – almost zero as carrying voice in the form of data packets requires very little bandwidth.

4.49 Effective tariff of voice calls per minute in the cellular mobile market was Rs. 0.60 per minute in FY 2014-15 and is on a declining trend. As a matter of principle; the Authority should not propose any MTR above Rs. 0.60 per minute going forward.

PTA's Response:

4.50 It may be noted that the current process of MTR review is an interim measure towards achieving cost based charges for termination of calls among the operators in Pakistan. Subsequent review of MTR will be based on cost models of interconnection services and would also consider cost associated with IP interconnection. As per international best practice, PTA has proposed a glide path approach for the reduction in MTR and abrupt reduction of MTR to Rs. 60 per minute in this review is not agreed based on benchmarking analysis.

Nayatel's Comments:

4.51 Majority of users tend to make calls from Mobile to Mobile, this shift of mobile calling has affected fixed local loop calling. To safeguard the interest of FLL to Mobile Calling the MTR rates should be lowered. Therefore, we propose MTR as

0.75/min for the period of 1st December 2017 till 30th November 2018, and 0.65/min for the period of 1st December 2018 onwards.

PTA's Response:

4.52 As per international best practice, PTA supports a glide path approach for the reduction in MTR.

Summary:

4.53 Summary of operators' proposed MTR and PTA's analysis is provided below:

<table>
<tr><th>Operator(s)</th><th>Proposed MTR / Min</th><th>PTA's Analysis</th></tr>
<tr><td>PMCL (Jazz)</td><td>Rs. 0.90 or increase
Cost of interconnection has increased due to currency depreciation and increased cost of equipment in Pak rupee

PTA's selection of countries in 2017 is biased as only low MTR countries selected in the benchmarking.

More comparable countries should be included in the benchmarking.</td><td rowspan="3">Benchmarking provided by Jazz is not relevant as it mainly consists of East European countries and Jazz has not correctly carried out benchmarking as per methodology of Ovum's study in 2008 resulting in upward bias. Therefore, MTR cannot be increased as proposed by Jazz.

It is well established fact that cost of network including interconnection service has substantially decreased since PTA's last determination of MTR in 2008.

Recent cost-based study of Ufone has also revealed MTR cost around Rs.0.30 on Fully Allocated Cost (FAC). Furthermore, it is also well-established fact that termination rates would further reduce in case of Long Run Incremental Cost (LRIC) basis.</td></tr>
<tr><td>Telenor Pakistan</td><td>Rs. 0.90
Reduction in MTR will severely hit revenues. Any change should not be effective before Jan 2019. Further, separate International termination rate of USD 0.025 should be implemented for both mobile and fixed.</td></tr>
<tr><td>CM Pak (Zong)</td><td>Rs. 0.30</td></tr>
</table>

<table>
<tr><td>PTML (Ufone)</td><td>Asymmetric MTR and gradual reduction: starting from Rs. 0.90 (for smaller operator) and Rs. 0.70 (for larger operator), and gradual reduction to Rs. 0.40 and Rs. 0.45 by 2021.</td><td rowspan="7">This is cost of the smallest operator. Larger operators (Jazz and Telenor) are expected to have even lower cost.

It is pertinent to highlight that, in the region, countries are continuously decreasing their MTR, e.g. recently India has decreased MTR from INR 0.14 to INR 0.06 and to be made ZERO from 2020; Bangladesh has reduced from Tk. 0.18 to Tk. 0.14 in August 2018; Philippines from PHP 2.5 to PHP 0.50 and Malaysia is decreasing MTR from Ringgit 0.0292 to 0.0196 from 2019.

Therefore, all the parameters (benchmarking, cost-based study and regional trends) do not justify current level of MTRs in Pakistan and requires substantial reduction. However, for gradual reduction, PTA has proposed conservative reduction in MTR, as an interim measure. Another review will be initiated based on cost models.

With reference to Telenor's request for International termination rate, a separate consultation may be carried out.</td></tr>
<tr><td>PTCL</td><td>Gradual reduction in MTR i.e. Rs. 0.70 per min from 1st Dec 2017and Rs. 0.30 per min from 1st December 2019.</td></tr>
<tr><td>COMSATS</td><td>Not above Rs. 0.60</td></tr>
<tr><td>Multinet, ADG LDI, 4B Gentel, Worldcall, Wisecom, Circlenet, Telecard, Redtone</td><td>Rs. 0.30</td></tr>
<tr><td>Wateen Telecom</td><td>Rs. 0.50</td></tr>
<tr><td>Nayatel</td><td>Rs. 0.75 from 1st December 2017 and Rs. 0.65 from 1st Dec 2018 onwards.</td></tr>
<tr><td>DANCOM</td><td>Between Rs. 0.20 to Rs. 0.30.</td></tr>
</table>

5. The Order

5.1 Based on benchmarking analysis, charges prevailing in comparable countries and operators' comments / submissions, the Authority hereby determines the following mobile termination rates for all types of calls (i.e. local, long distance and international incoming calls) terminated on mobile networks from other mobile networks or fixed networks, for the period mentioned hereunder:

Period	Mobile Termination Rate (Rs. per minute)
From 1st January 2019 to 31st December 2019	0.80
From 1st January 2020 onwards	0.70

5.2 The above-mentioned mobile termination rates shall continue to prevail unless otherwise revised by the Authority.

5.3 The settlement of interconnection traffic shall be done on per second basis for all types of calls (local, long distance or international).

5.4 The operators may mutually agree on lower mobile termination rates. The operators are also free to offer discounts to other operators on mutually agreed and non-discriminatory basis.

5.5 The Authority shall carry out cost-based study to determine interconnection charges and a separate consultation on international termination rate in due course of time.

Muhammad Naveed Chairman	Ali Asghar Member (Compliance & Enforcement)

This order is signed on _____day of November 2018 and comprises _24_ pages.