



Information Memorandum

Spectrum Auction for Next Generation
Mobile Services (NGMS)/5G in Pakistan
for Award of 700, 1800, 2100, 2300,
2600, and 3500 MHz Bands

9 January 2026

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1. Introduction

- a) The Pakistan Telecommunication Authority (“PTA”), established under section 3 of the Pakistan Telecommunication (Re-organization) Act, 1996 (the “Act”), in compliance with the policy directive of Government of Pakistan (the “GoP”), is proceeding to grant License(s) for the use of spectrum in the 700, 1800, 2100, 2300, 2600, and 3500 MHz bands and to grant the successful bidders the right to establish, maintain and operate telecom networks, and to support the further development of Pakistan’s digital infrastructure. The process of the award is titled as “Spectrum Auction for Next Generation Mobile Services (NGMS)/5G in Pakistan 2026 (NGMS/5G Auction)”.
- b) This Information Memorandum (“IM”) sets out the rules, processes, planned timetable and other background information to help prospective Applicants to decide if they wish to participate in the NGMS/5G Auction. An overview of Pakistan’s telecommunication sector is provided at <https://www.pta.gov.pk/category/annual-reports-1432096911-2023-05-30>.
- c) Prospective / interested Applicants are advised to seek their own expert advice to participate in the award process and on matters concerning financial, legal, technical or other implications of the award process and associated policies.
- d) There will be a consultation on this IM. This process will provide an opportunity for prospective Applicants and other interested parties to ask questions about the NGMS/5G Auction. PTA reserves the right to determine what comments are relevant and require modification of the Spectrum Auction and hence require it to publish amendments to this IM. All questions and comments can be submitted by email at 5Gauction2026@pta.gov.pk. PTA may respond to queries by publishing on PTA’s website. Queries not received till 24 hours before the end of the consultation period, may not be responded by PTA. Following this consultation, PTA and its Consultant (NERA) will prepare and publish a final version of the Information Memorandum, considering comments received from stakeholders through the consultation. PTA will also conduct an information session for prospective Applicants to explain the auction process and rules and respond to further questions. This information session would take place after the Final IM is published, so only clarification questions will normally be accepted and considered.
- e) The information contained in this IM is accurate as per available information at the time of posting on PTA’s website. In addition, neither PTA, nor the GoP nor any of their members or officers or employees or advisers make any representation or warranty regarding the accuracy or completeness of the information contained in this IM or any other written or oral information made available to any interested party or

its advisers. GoP and PTA expressly disclaim any responsibility or liability in respect of any such information or any inaccuracy in this IM or omission from this IM.

- f) In the remainder of this section, an overview of the following is provided:
 - i) Section 1.1: The Spectrum Available in the NGMS/5G Auction;
 - ii) Section 1.2: The award process;
 - iii) Section 1.3: An indicative timeline; and
 - iv) Section 1.4: The legal framework for the NGMS/5G Auction.
- g) Specialized terms used in this IM are defined in Section 9.

1.1. Overview of the Spectrum Available in the NGMS/5G Auction

1.1.1 The NGMS/5G Auction will offer 597.2 MHz of spectrum below 6 GHz. This includes additional spectrum in two existing IMT bands (1800 and 2100 MHz) and newly available spectrum in four additional IMT bands (700, 2300, 2600 and 3500 MHz) that have not previously been allocated to cellular mobile operators in Pakistan. Table 1 provides an overview of spectrum available in the NGMS/5G Auction.

Table 1: Available Spectrum by Band (MHz)

Band	700 MHz	1800 MHz	2100 MHz	2300 MHz	2600 MHz	3500 MHz	TOTAL
Bandwidth (in MHz)	30 (2x15)	7.2 (2x3.6)	40 (2x20)	50	190	280	597.2

1.1.2 Further information about the available spectrum and License terms and conditions associated with the spectrum is provided in Section 2.

1.2. Overview of the Award Process

1.2.1 The License(s) to use the NGMS/5G spectrum will be awarded through five-stage award process:

- a) **Application Stage** – The period when bidders may submit applications to participate in the auction.
- b) **Qualification Stage** – The period between receipt of applications and announcement of Qualified bidders.
- c) **Allocation Stage** – The main auction stage which determines the quantity of spectrum in each frequency band awarded to Winning Bidders.

- d) **Assignment Stage** – A process following the main auction that determines the specific frequencies to be assigned to Winning Bidders.
- e) **Grant Stage** – The period between the completion of the Assignment Stage and the grant of License(s) to Winning Bidders.

- 1.2.2 Sections 3-7 provide a detailed description of the award process, one section per stage.
- 1.2.3 The auction stages (Allocation Stage and Assignment Stage) will be conducted using an Electronic Auction System (the “EAS”). Preliminary information about the EAS is provided in Sections 5 and 6. More detailed information and training regarding the use of the EAS will be provided to Qualified bidders during the Qualification Stage, as described in Section 4.
- 1.2.4 For the avoidance of doubt, the term “Applicant” in the IM is used both specifically to refer to companies that apply in Stage 1 and more generally from Stage 2 onwards to refer to a company that is still active in the process. From Stage 2 onwards, the term “Qualified bidder” is introduced to refer to any Applicant that was qualified to participate in the auction (and is not subsequently removed). And from Stage 3 onwards, the term “Winning Bidder” is introduced to refer to any Applicant that was awarded spectrum in the Allocation Stage (and is not subsequently disqualified). These descriptions are relevant only for the duration of the NGMS/5G award process. Once the License(s) have been granted, the successful Applicants will have the status of “Licensee”.

1.3. Indicative Timeline for the NGMS/5G Auction

- 1.3.1 Table 2 provides an indicative timeline(s) for the award process to assist potential Applicants in the preparation of their applications. PTA will determine the overall timetable of the NGMS/5G Auction, taking account of the circumstances prevailing at the time of each individual step. Updates to the timeline may periodically be announced on PTA website or communicated directly to Applicants that are active in the process.

Table 2: Indicative Timeline for the Award Process

Process Steps	Timeline
Publication of IM and start of Consultation Period	[T0]
Deadline for submission of Consultation Responses	[T0+20]
Publication of Final IM	[T0+26]
Information Session for Prospective Applicants	[T0+ 31]
Application deadline (including deadline for pre-bid deposit) latest by 4.00 PM (PST)	[T0+ 34]
PTA announces list of Applicants	[T0+ 34]
PTA announces list of Qualified Bidders	[T0+ 39]

Process Steps	Timeline
Bidder Seminar for Qualified Bidders (Distribution of bidder participation instructions/manual)	[T0+40]
Mock Auction(s) for Qualified Bidders	[T0+41]
Main Auction (Allocation Stage) starts	[T0+47]
Assignment Stage Starts	TBD (upon closing of Allocation Stage Auction)
Announcement of Provisional Auction Results	Upon completion of Assignment Stage
Deadline for Submission of Performance Bank Guarantee(s)	Within 15 business days after announcement of Provisional Auction Results
Grant of License(s) to Winning Bidders	After submission of Performance Bank Guarantee(s)

Note: T0 is the IM publication date i.e 9th January 2026. All dates and timings are indicative and subject to change as deemed necessary by PTA.

1.4. Legal Framework

1.4.1 The documents that form the legal framework for the NGMS/5G Auction, applicable to all Applicants include:

- a) Pakistan Telecommunication (Re-organization) Act, 1996 including all rules and regulations made thereunder;
- b) All relevant policy directives of the GoP; and
- c) All PTA determinations, directives, guidelines and Standard Operating Procedures (SOPs) etc.

1.4.2 Documents relevant to the legal framework are generally available on the PTA website¹. Four key documents are i) Telecommunications Policy 2015² ii) Policy Directive for Test and Development of Future Technologies Particularly for Fifth Generation (5G) Wireless Networks in Pakistan³ iii) FAB Radio Frequency Spectrum (Allocation, Management and Monitoring) Regulations, 2021 and iv) Policy Directive for Release of Additional Spectrum Auction in Pakistan 2026 dated 6th Jan 2026⁴.

¹ <http://www.pta.gov.pk>

² <https://www.pta.gov.pk/assets/media/2025-02-13-Telecommunications-Policy--2015-dt-11-12-2015.pdf>

³ https://www.pta.gov.pk/assets/media/policy_directive_281217.pdf

⁴ <https://www.pta.gov.pk/assets/media/2026-01-08-Issued-Policy-Directive-for-IMT-Spectrum-dated-6th-January-2026.pdf>

- 1.4.3 For additional information pertaining to NGMS/5G Auction, please refer to the websites of the Ministry of Information Technology and Telecommunication (MoIT&T)⁵ and Frequency Allocation Board (FAB)⁶.
- 1.4.4 Further information about legal terms and conditions, including conditions for participation in the award process, payment terms and the performance Bank Gurantee, is provided in Section 7 and 8.

⁵ <http://www.moitt.gov.pk>

⁶ <http://www.fab.gov.pk/>

2. License Description

This section will set out the structure of the License(s) that will be granted and describes the spectrum available for award as well as relevant terms and conditions. This section also sets out the reserve prices for each lot available in the NGMS/5G Auction.

2.1. License Structure

The Licence(s) that will be awarded will include rights, obligation and limitations on use, geographic extent and duration. In this regard license template attached with this IM will be used for each License.

2.1.1. Right and Limitations on Use

- a) A License for spectrum awarded in the NGMS/5G Auction conveys a right to exclusive use of the frequencies Licensed to the Winning Bidders.
- b) A License is granted the right to establish, maintain and operate a mobile network and offer Licensed mobile services to consumers on technology neutral basis. The assigned spectrum may be used to provide services as per the License terms and conditions read with applicable legal framework.
- c) Since the License is technology neutral, therefore, it can be used to deploy any current or future generation of mobile technology with approval of PTA. At this time, it is anticipated that the spectrum will be used to deploy fourth generation (4G) and fifth generation (5G) mobile services to consumers and may in the future be used for future NGMS technologies subject to approval by PTA.
- d) Each License and associated spectrum shall be personal to the licensee and shall not be assigned, leased, sub-Licensed to, or held on trust for another person, without the prior written approval of PTA.

2.1.2. Geography

The territorial extent / jurisdiction of each License is the whole of Pakistan excluding Azad Jammu & Kashmir (AJ&K) and Gilgit Baltistan (GB).

2.1.3. License Duration

- a) The duration of the License shall be fifteen (15) years from the License Effective Date of the license. Cellular Mobile License(s) are renewable on terms & conditions applicable under GoP policy applicable at the time of renewal.

- b) As a pre condition for participation in the NGMS/5G Auction, operators are required to agree to participate in a future replanning/rationalisation/refarming of each frequency band, including existing spectrum holdings and newly assigned spectrum in NGMS/5G Auction, if this is required by PTA and FAB on spectrum management grounds, irrespective whether they have acquired spectrum in that particular band in this NGMS/5G or otherwise. The purpose of this obligation is to facilitate future configuration of the 900 MHz, 1800 MHz, 2100 MHz and other bands for IMT services and ensure that any future spectrum sold in any frequency band can be efficiently integrated with spectrum sold in this auction and prior allocations. Any future reconfiguration would follow industry consultation, and prioritize contiguity and creation of 5G compatible blocks, while also minimizing frequency position shifts (if possible).

2.1.4. License Template

A template for the License is provided in Appendix-F. If there are any differences between the Licensee rights and obligations described in this IM and the final version of the License template, then the conditions in the License template shall prevail.

2.2. Available Spectrum, Lot Size and Lot Categories

- 2.2.1 A total of 597.2 MHz of spectrum below 6 GHz will be available in the auction across six (06) bands. A description of this spectrum including the proposed lot sizes and categories is provided in Table 3.

Table 3: Spectrum Available and Lot Structure by Category

Category	Band	Duplex type	Available spectrum (MHz)	Frequencies	Number of lots	MHz per lot
A	700 MHz	FDD	2x15 MHz	723-738(uplink) 778-793 (downlink)	3	2x5 MHz
B	1800 MHz	FDD	2x3.6 MHz	1733.9-1737.5(uplink) 1828.9-1832.5 (downlink)	3	2x1.2 MHz
C	2100 MHz	FDD	2x20 MHz	1960-1980(uplink) 2150-2170 (downlink)	4	2x5 MHz
D	2300 MHz	TDD	50 MHz	2350-2400 MHz	5	10 MHz
E	2600 MHz	TDD	190 MHz	2500-2690 MHz	19	10 MHz
F	3500 MHz	TDD	280 MHz	3300-3580 MHz	28	10 MHz

2.2.2 Pakistan's current frequency assignments are available on the FAB website [Spectrum Planning & Management | FAB | Frequency Allocation Board](#). A pictorial overview of the specific frequencies available and their position in relation to existing mobile frequencies Licensed to the mobile network operators⁷ (MNOs) is provided in Figure 1.

⁷ MNO is also referred to as a Cellular Mobile Operator (CMO). These terms are interchangeable.

2.2.1. Spectrum Caps and Minimum Bid Levels

The NGMS/5G Auction will have spectrum caps and minimum bid levels to promote pro-competitive and efficient allocation of spectrum.

a) Spectrum Caps

- i) Spectrum caps impose limits on the amount of spectrum in specific bands or across bands that a bidder can buy. 4 caps are imposed in the NGMS/5G Auction for the purposes of precluding certain auction outcomes with significant asymmetries in spectrum holdings between MNOs that could give rise downstream competition concerns now or in the future.
- ii) The following caps will apply to each Qualified bidder in the auction:
 - (1) 348.5 MHz for all IMT spectrum holdings (including existing spectrum and spectrum acquired in the auction). This corresponds to 40% of total spectrum available post auction;
 - (2) 55 MHz for all low band IMT spectrum holdings, i.e. 700 MHz + 850 MHz + 900 MHz bands (including existing spectrum and spectrum acquired in the auction);
 - (3) 140 MHz (14 lots) in 2600 MHz band; and
 - (4) 200 MHz (20 lots) in the 3500 MHz band.
- iii) Based on their current spectrum holdings, the existing MNOs would be subject to caps on their individual demand in the auction as set out in Table 4. In addition, new entrant having no existing IMT spectrum will not be allowed to bid for spectrum in the 1800 MHz band;
- iv) Considering acquisition of Telenor by PTCL, either of the three i.e PTCL, Ufone & Telenor is allowed to participate in this award process and MergeCo cap as defined below in Table 4 will be applicable; and

Table 4: Existing MNO Holdings and Inferred Caps by Operator

Operator	All IMT spectrum	Sub-1 GHz IMT	700	1800	2100	2300	2600	3500
Existing holdings								
Jazz	94.4	24.8	0	49.6	20	0	0	0
Zong	67.2	15.2	0	32	20	0	0	0
MergeCo*	112.4	44.8	0	47.6	20	0	0	0
New Entrant	0	0	0	0	0	0	0	0
Spectrum caps and inferred limits by band								
Jazz	254.1	30.2	30	7.2	40	50	140	200
Zong	281.3	39.8	30	7.2	40	50	140	200
MergeCo*	236.1	10.2	10	7.2	40	50	140	200
New Entrant	348.5	55	30	n.a.	40	50	140	200

* The MergeCo retains the combined spectrum holdings of Telenor and Ufone, irrespective of participation in Spectrum Auction either by Ufone or Telenor.

- v) These caps are set sufficiently high that they will allow for competition for and variation between operators in spectrum acquisition. They are also sufficiently tight that they will preclude any single MNO from realizing a very large lead in holdings of total spectrum or low-band spectrum, or in spectrum suitable for deploying 4G or 5G capacity.

b) Minimum Bid Levels

- i) Minimum bid levels are restrictions on the minimum quantity or above this quantity of lots in a category that a bidder can bid for in the first round of the auction. Minimum bid requirements do not apply in subsequent rounds, i.e. from round 2 onwards in accordance with auction rules explained in section 5.2 of this IM.
- ii) The following minimum bid levels apply to Qualified bidders that are qualified as Incumbent bidders (including all MNOs):
 - (1) 50 MHz (5 lots) in the 2600 MHz band; and
 - (2) 50 MHz (5 lots) in the 3500 MHz band.
- iii) The following minimum bid level applies to Qualified bidders that are qualified as New Entrant bidder(s):

- (1) 50 MHz across 700/2100/2300/2600/3500 MHz bands. New Entrant bidder can choose any combination of spectrum across these 5 bands in Round 1 of the EAS, as long as it meets or exceeds 50 MHz.

2.2.2. Technical Requirements

- a) License conditions set out the allowed RF power that can be transmitted both in-band and out-of-band, as well as additional conditions that reduce interference such as any requirement to synchronize TDD transmission frames;
- b) In order to develop the conditions as provided herein below, the following approach has been adopted with respect to issues of coordination:
 - i) Regarding coordination with other operators within Pakistan, a LTE (4G) 4:1 and 5G NR 8:2 synchronised framing arrangement is adopted as the default arrangement in all TDD bands, but operators may modify this by unanimous agreement on a band-by-band basis in consultation with PTA & FAB; and
 - ii) Regarding coordination across national borders, operators will be subject to existing and future agreements with neighbouring countries.
- c) The only locations on Pakistan's borders where there are major conurbations close to both sides are along the border with India. Operators are advised that the most likely outcome of any future synchronization agreement with India would be the adoption of Clock Synchronization in accordance with ECC Recommendation 11(05). In such circumstances, the adopted frame structure should for be LTE (4G) 4:1 and 5G NR 8:2. If agreement is not possible at a regulator-to-regulator level then operators may deploy informal synchronization arrangements. A 1km guard distance is recommended with periodic review to determine whether synchronized operation should be considered;
- d) The responsibility for clock synchronization and alignment of frame structures in the TDD-based networks proposed above shall rest solely with the operators, in accordance with prevailing global best practices, for the purpose of mitigating any unwanted effects arising from cross-border signals in overlapping frequency bands from neighbouring countries; and
- e) The License conditions having technical specific for each band are set out below:

i) 700 MHz FDD

Each licensee should comply with the following conditions:

(1) In-band power restrictions:

(a) BTS

(i) TRP of 53.5 dBm/5 MHz

(b) Terminal

(i) Nomadic: 23 dBm TRP;

(ii) Fixed: 23 dBm / 5 MHz EIRP.

(c) Out-of-band emission restrictions for non-AAS devices:

Separation from Band Edge	0-5 MHz	5-10 MHz	>10 MHz
Power level dBm/100kHz EIRP per transmitter port	-7dBm-7/5 ($F_{\text{offset(MHz)}}-0.05$)dBm	-14	-16

(d) Out-of-band emission restrictions for AAS devices:

Separation from Band Edge	0-5 MHz	5-10 MHz	>10 MHz
TRP per sector (dBm)	2dBm-7/5 ($F_{\text{offset(MHz)}}-0.05$)dBm	-5	-7

(e) Operators are encouraged to work together to coordinate their networks to minimise interference between themselves rather than requirement of imposing any particular regulations. They are also encouraged to work with operators in neighbouring countries to plan cross-border frequency assignments to minimise interference.

ii) 1800 MHz FDD

License conditions will be aligned with those of band(s) which have already been assigned prior to this auction. The auctioned spectrum will be assigned on a technology neutral basis. The technologies implemented should use the Frequency Division Duplex (FDD) access method and be compliant with the out-of-block (OOB) emission limits stipulated in the relevant 3GPP Technical Specifications.

iii) 2100 MHz FDD

License conditions will also be aligned with those band(s) which have already been assigned prior to this auction. These conditions are that the auctioned spectrum should be assigned on a technology neutral basis. The auctioned spectrum will be assigned on a technology neutral basis. The technologies implemented should use the Frequency Division Duplex (FDD) access method and be compliant with the out-of-block (OOB) emission limits stipulated in the relevant 3GPP Technical Specifications.

iv) 2300 MHz TDD

Each licensee should comply with the following conditions:

(1) In-band power restrictions:

(a) BTS

- (i) Adaptive Antenna Systems (AAS): 44 dBm / 5 MHz TRP per cell; and
- (ii) Non-AAS: 65 dBm / 5 MHz EIRP per cell

(b) Terminal

- (i) Nomadic: 28 dBm TRP; and
- (ii) Fixed: 35 dBm / 5 MHz EIRP.

(c) Within Pakistan synchronisation between MNOs is mandated with a 4:1 frame structure unless a different frame structure is unanimously agreed between the licensees and/or a different frame structure is required to match frame structures adopted in neighbouring countries.

(d) Out-of-band emission restrictions:

Separation from Band Edge	0-5 MHz	5-10 MHz	> 10 MHz
AAS dBm/5MHz TRP per cell	4	1	1
Non AAS dBm/5MHz EIRP per antenna	21	15	13

(e) Operators are encouraged to work together to coordinate their networks to minimise interference between themselves rather than imposing any regulations. They are also encouraged to work with operators in neighbouring countries to plan cross-border frequency assignments to minimise interference.

v) 2600 MHz TDD

Each licensee should comply with the following conditions:

- (1) In-band power restrictions:
 - (a) BTS
 - (i) AAS: 44 dBm / 5 MHz TRP per cell; and
 - (ii) Non-AAS: 65 dBm / 5 MHz EIRP per cell.
 - (b) Terminal
 - (i) Nomadic: 28 dBm TRP; and
 - (ii) Fixed: 35 dBm / 5 MHz EIRP.
- (2) Within Pakistan synchronisation between MNOs is mandated with a 4:1 frame structure unless a different frame structure is unanimously agreed between the licensees and/or a different frame structure required to match frame structures adopted in neighbouring countries.
- (3) Out-of-band emission restrictions:

Separation from Band Edge	0-5 MHz	5-10 MHz	>10 MHz
AAS dBm/5MHz TRP per cell	4	1	1
Non AAS dBm/5MHz EIRP per antenna	21	15	13

- (4) Operators are encouraged to work together to coordinate their networks to minimise interference between themselves rather than imposing any regulations. They are also encouraged to work with operators in neighbouring countries to plan cross-border frequency assignments to minimise interference; and
- (5) For bordering countries of Afghanistan and Iran when operators deploy n41 TDD 2.6 GHz and n7 FDD 2.6 GHz, the coordination distance of TDD and FDD sites should be <1km with back-to-back transit and signal level limited < -110dBm. However, given the population densities found in Afghanistan and Iran it is unlikely that 2.6 GHz FDD capacity networks are deployed in those locations.

vi) 3500 MHz TDD

Each licensee should comply with the following conditions:

- (1) In-band power restrictions:

- (a) BTS
 - (i) AAS: 44 dBm / 5 MHz TRP per cell; and
 - (ii) Non-AAS: 65 dBm / 5 MHz EIRP per cell.

- (b) Terminal
 - (i) Nomadic: 28 dBm TRP; and
 - (ii) Fixed: 35 dBm / 5 MHz EIRP.

(2) Within Pakistan synchronisation between MNOs is mandated with a 4:1 frame structure (8:2 NR) unless a different frame structure is unanimously agreed between the licensees and/or a different frame structure required to match frame structures adopted in neighbouring countries.

(3) Out-of-band emission restrictions:

Separation from Band Edge	0-5 MHz	5-10 MHz	>10 MHz
AAS dBm/5MHz TRP per cell	4	1	1
Non AAS dBm/5MHz EIRP per antenna	21	15	13

(4) Operators are encouraged to work together to coordinate their networks to minimise interference between themselves rather than imposing any regulations. They are also encouraged to work with operators in neighbouring countries to plan cross-border frequency assignments to minimise interference.

2.3. Coverage and Quality of Service Obligations

Licensees are subject to mandatory coverage and quality of service obligations, as set out in Section 2.3.1.

2.3.1. Obligations for Licensees

a) Coverage Obligations

- i) Licensees are subject to four mandatory rollout phases:
 - (1) Phase 1 (2026-28);
 - (2) Phase 2 (2028-30);
 - (3) Phase 3 (2030-32); and
 - (4) Phase 4 (2032-35).

- ii) Licensees must meet phase-specific obligations including site deployments, geographic coverage targets, and fibre-to-the-site (FTTS) ratio milestones. Existing Cellular Mobile Operators who participate and win spectrum in this auction, will have their ongoing rollout alongwith associated QoS obligations replaced with new obligations alongwith associated financial instruments. These obligations are set out below:

(1) Phase 1: (2026-2028)

- (a) During the first phase of implementation, the focus is on deployment of advanced mobile technology in key urban centres, high-demand locations and address coverage gaps;
- (b) The rollout obligations are as follows:
 - (i) Deployment of advanced mobile technology⁸ with minimum of 1,000 sites per year – atleast 20% must be completely new sites at new locations (i.e. atleast 200 new sites per year);
 - (ii) 4G sites to be proportionately distributed in urban and rural areas in each province;
 - (iii) 5G coverage must be made available in Federal and Provincial capitals i.e. Islamabad / Rawalpindi, Karachi, Lahore, Peshawar and Quetta. For existing CMOs atleast 10% equivalent of existing 4G/LTE sites in each city to be rolled out for provision of 5G services each year in Federal and Provincial capitals;
 - (iv) FTTS ratio to be increased to 20% of total sites including new sites, with a focus on ensuring robust backhaul connectivity for high-demand urban areas; and
 - (v) **For New Entrants Only:** Deployment of minimum 200 sites per year (atleast 20% FTTS and 20% 5G sites).

⁸ 4G/5G and beyond

(2) Phase 2: (2028 - 2030)

- (a) Building on the initial deployment in Phase 1, this phase extends coverage to additional cities, population centres and critical service locations:
 - (i) Deployment of advanced mobile technology at 1,000 sites per year – at least 20% must be completely new sites at new locations (i.e., at least 200 new sites per year);
 - (ii) 4G sites to be proportionately distributed in urban and rural areas in each province;
 - (iii) 5G services to be made available in 10 additional cities (at least 2 additional cities from each province, i.e. Punjab, Sindh, KPK & Baluchistan) with atleast 10 % equivalent of existing 4G/LTE sites (in each of 10 cities) alongside further enhancement of phase 1 cities 5G roll out each year;
 - (iv) 5G service provision in important locations including universities, technology parks, industrial zones, major transit hubs covering motorways, highways, airports, train stations, hospitals and bus terminals to be prioritised;
 - (v) FTTS ratio to be increased to achieve 25% of total sites of each MNO including new sites, supported by enhanced fibre deployment to support growing bandwidth demands; and
 - (vi) **For New Entrants Only:** Deployment of minimum 200 sites per year (atleast 20% FTTS and 20% 5G sites).

(3) Phase 3: (2030 - 2032)

- (a) This phase is focused on expanding coverage and establishing foundational connectivity to support less populated areas:
 - (i) Deployment of advanced mobile technology at 1,000 sites per year – at least 20% must be completely new sites at new locations (i.e., at least 200 new sites per year) and address coverage gaps in both urban and rural areas;

- (ii) 4G sites to be proportionately distributed in urban and rural areas in each province;
- (iii) 5G services to be available in 10 additional cities (at least 2 x additional cities from each province i.e. Punjab, Sindh, KPK & Baluchistan) with atleast 10 % equivalent of existing 4G/LTE sites (in each of 10 cities) alongside further enhancement of phase 1 and 2 cities 5G roll out each year;
- (iv) Availability of 5G services at other hotspots (such as tourist areas and hospitals). 5G service provision in important locations including universities, technology parks, industrial zones, major transit hubs to be prioritised;
- (v) FTTS ratio to be increased to achieve 30%of total sites of each MNO including new sites, supported by enhanced fibre deployment to support growing bandwidth demands; and
- (vi) **For New Entrants Only:** Deployment of minimum 200 sites per year (atleast 20% FTTS and 20% 5G sites).

(4) Phase 4: (2032 - 2035)

- (a) The final phase aims for comprehensive nationwide coverage:
 - (i) Deployment of advanced mobile technology at 1,000 sites per year – atleast 20% must be completely new sites at new locations (i.e., at least 200 new sites per year);
 - (ii) 4G sites to be proportionately distributed in urban and rural areas in each province;
 - (iii) 5G services extended to small cities, 15 additional cities (at least 2 additional cities from each province i.e. Punjab, Sindh, KPK & Baluchistan) withat least 10 % of existing equivalent 4G/LTE sites (in each of 10 cities) alongside further enhancement of Phase 1,2 and 3 cities 5G Rollout each year;

- (iv) FTTS ratio to be increased to achieve 35% penetration including new sites, supported by enhanced fibre deployment to support growing bandwidth demands; and
- (v) **For New Entrants Only:** Deployment of minimum 200 sites per year (atleast 20% FTTS and 20% 5G sites).

b) Coverage Maps

Operators who advertise 5G services must provide 5G coverage map with clear boundaries on their websites in addition to existing coverage maps.

c) Pre-Existing Coverage Obligations

Importantly, new obligations supersede any previous rollout obligations associated spectrum allocations/assignments. Existing Cellular Mobile Operators who participate and win spectrum in this auction, will have their ongoing rollout obligations replaced with new obligations alongwith associated financial instruments.

d) Quality of Service Obligations

- i) Operators must also meet certain QoS thresholds for their whole network . These obligations are technology and spectrum neutral, meaning that may be delivered using any combination of spectrum bands and any mobile technology; and
- ii) QoS thresholds are defined in three phases which are to be met for 90% consumers:

(1) Phase 1: Baseline Standards (2026 – 2028)

- (a) The initial QoS parameters to be achieved in first Phase:
 - (i) Minimum downlink speed of 20 Mbps for 4G;
 - (ii) Minimum downlink speed of 50 Mbps for 5G; and
 - (iii) Uplink speeds maintained at 25% of downlink speed.

(2) Phase 2: Enhanced Standards (2028-2030)

- (a) Mid-term QoS standards to be achieved in Second Phase:
 - (i) Minimum downlink speeds of 35 Mbps for 4G;
 - (ii) Minimum downlink speed of 75 Mbps for 5G; and
 - (iii) Uplink speeds maintained at 25% of downlink speed.

(3) Phase 3 & 4 (combined): Premium Service Standards (2030 – 2035)

(a) Final phase QoS Standards to be achieved:

- (i) Minimum downlink speed of 50 Mbps for 4G;
- (ii) Minimum downlink speed of 100 Mbps for 5G; and
- (iii) Uplink speeds maintained at 25% of downlink speed.

(b) Detailed Rollout obligations and additional QoS parameters are provided in license template attached at **Appendix “F”** of this IM.

e) Implementation & Regulatory Compliance

- i) As a guarantee for the performance of network roll-out obligations, the Winning Bidder shall submit four (04) separate Performance Bank Guarantees (PBGs), one for each rollout phase; and
- ii) Further details are specified in Section 7.3.

2.4. Other License Terms and Conditions

In addition to the conditions as mentioned hereinabove, some other relevant license service obligations form part of License Template (Appendix F) of this IM alongwith regulations issued by PTA from time to time. For further information, we refer prospective applicants to PTA website and the documents described in section 1.4 on the legal framework for the NGMS/5G Auction.

2.4.1. Service Obligations

The service obligations defined in the License template are summarised in Table 5. These are presented in detail in the License template in Appendix F.

Table 5: Other Service Obligations

Obligation	Requirement
Emergency services	Provision of mandatory emergency services as determined by PTA
Lawful interception	As per applicable legal framework
Non-discrimination	The services shall not discriminate between end-users, in particular with regard to , quality, availability and reliability of the service.

Obligation	Requirement
Tariffs	Tariffs must be offered in accordance with Telecom Consumer Protection Regulations 2009 and other related regulations/determinations. The Tariffs shall not be predatory or anti-competitive.
Billing	Provision of detailed and precise billing to end-users upon request
Data protection	Compliance with laws regarding privacy and data protection
Provision of information	Provision of technical details for the deployed network equipment upon request. Provision of up to date information regarding network coverage.
Interconnection	Provision of interconnection as per applicable legal framework.
Local Manufacturing in Pakistan	Supporting the development / growth of mobile handset and telecom equipment manufacturing in Pakistan as per applicable framework.
Site clearance	Clearance of cell sites as per Standard Operating Procedure of PTA/FAB.
Access for inspection	Provide access to all radio equipment for inspection upon request.
National security	Obligations with regard to national security.
Relations with customers	Requirements for submission of standard service contracts/code of commercial practice to PTA for approval.
Performance Bank Guarantee	Provision of performance Bank Guarantee as described in Section 7.3 as a security to ensure that network coverage obligations are met.
Network Coverage	To identify coverage area and type of Service i.e 4G/5G to its customers through coverage maps on its website.
Privacy of Communication	Contents of the communication made over its network except for conditions mentioned in the License and shall follow "Protection from Spam, Unsolicited, Fraudulent and Obnoxious Communication Regulations 2009" and relevant License conditions to ensure and protect interest of telecom consumers.
Quality of Service	To meet or exceed the Quality of Service standards, at all times, as described in the License template in Appendix F. In addition, any QoS KPIs devised in future and regulations made thereto by the Authority for the Licensed Services shall be strictly followed by the Licensee.

2.4.2. Tariffs

In cases where the Licensee hold Significant Market Power (**SMP**) in a relevant market, PTA may regulate Licensee's prices, terms and conditions for those Licensed Services in the SMP market and any Licensed Services incidental thereto as determined by the Authority. The method of regulating the same shall be determined by the Authority including the requirement for seeking prior approval of the Authority for any price, term or condition, or the maximum or minimum price, or both, for the Licensed Services.

2.4.3. Interconnection

The telecommunication system of the Licensee is deemed to be connectable system for the purpose of the Interconnection. Interconnection between the telecommunication system of the licensee and the telecommunication system of other operators is governed by the Interconnection Guidelines, 2004 and other enabling regulatory framework.

2.4.4. General Conditions

a) Operation of Licensed Services

The Licensee shall ensure that the Licensed System and the Licensed Services do not cause any damage to, or interference with, any telecommunications system or telecommunications Services of any other Operator or any other international radio frequency spectrum not assigned to the Licensee. The Licensee shall conduct its operations and shall establish its Licensed System in a manner so that it is not a safety hazard and is not in contravention of any relevant law, rule or regulation.

b) Discontinuation of Services

The Licensee shall not discontinue providing a category of Licensed Services in any area unless (a) the Licensee gives the Authority and affected customers at least 90 days' prior written notice of such discontinuation, and (b) Authority's prior written approval to such discontinuation is obtained. However, services to the subscribers who have defaulted may be disconnected as per the Authority approved "Code of Conduct" and "Service Level Agreement".

c) Monitoring

- i) The Licensee shall provide, at its own cost, suitable equipment at premises designated by the Authority and will ensure its upgrading, security and safety, in order to monitor the communications for the purpose of; measuring and recording traffic; call detail records; curbing of Grey International Telephony Services including SIM Box Detector and Quality of Service in a manner specified by the Authority. The Licensee shall provide the Authority with access to such equipment, and the information generated by such equipment; and
- ii) The Authority shall have the full right to inspect any premises or facility including hardware and software of the licensee.

d) Information

The Licensee shall furnish to the Authority, such information as the Authority may require regarding the Licensee's network plan, network and terminal standards, links

utilized, financial information including but not limited to revenues, costs, ledgers, underlying records, accounts, access to information systems, network audit and penetration test from an accredited technical auditor or any such other information as the Authority may from time to time request in connection with its functions, powers and responsibilities.

e) Quality of Service

- i) The Licensee shall at all times meet or exceed the Quality of Service standards described in Section 2.3 and/or such other Quality of Service standards as the Authority may, by regulation, require;
- ii) The Licensee shall maintain records of its performance in meeting these Quality of Service standards and shall submit them to the Authority on a quarterly basis in such format as the Authority may require. The Licensee shall maintain supporting records for inspection and technical audit as and when required by the Authority. The Licensee shall maintain all such records for a period of three years; and
- iii) The Authority may carry out tests on the quality of the Licensed Services and the Licensed System and the Licensee shall extend full co-operation and assistance for the purpose including provision of test instruments and equipment.

2.5. Reserve Prices and Eligibility Points Per Lot

2.5.1 Each lot of spectrum available in the NGMS/5G Auction will be subject to a Reserve Price per MHz in a band, which is the minimum fee payable to acquire a License for the corresponding spectrum. These are denominated in US dollars. Reserve Prices as set out in Table 6. These Reserve Prices will also be the starting prices for each lot offered in the auction.

2.5.2 Each lot of spectrum also has an associated number of eligibility points in the NGMS/5G Auction, set equal to 1 point per MHz, rounded up to the nearest whole integer. Eligibility

points are used to determine a bidder’s activity in the multi-round auction (the Allocation Stage), as described in Section 5. The eligibility points per lot are also set out in Table 6 .

Table 6: Reserve Prices and Eligibility Points by Category

Category	Band	Number of lots	MHz per lot	Reserve Price per MHz	Reserve Price per lot	Eligibility points per lot
				(US\$ Million)		
A	700 MHz	3	2x5 MHz	6.5	32.5	10
B	1800 MHz	3	2x1.2 MHz	14	16.8	3
C	2100 MHz	4	2x5 MHz	14	70	10
D	2300 MHz	5	10 MHz	1	10	10
E	2600 MHz	19	10 MHz	1.25	12.5	10
F	3500 MHz	28	10 MHz	0.65	6.5	10

3. Application Stage

In this section, we describe the process for submitting applications. This covers Stage 1 of the award process.

3.1. Information Session and Questions

- 3.1.1 Following the publication of the Final IM, PTA will schedule an information session for prospective applicants. This will be an online event in which PTA alongwith its Consultant (NERA) will make presentations and may take questions. Information regarding attendance and registration (if required) will be published on PTA's website.
- 3.1.2 Applicants may also pose questions and queries in writing preferably through email, letter (courier) to PTA concerning this IM, latest by the date mentioned in Section 1.3. However, PTA may not respond to questions and queries received after said date. Furthermore, PTA reserves the right not to reply to questions. However, to the extent that it does, it will publish and reply to the question at the information session, in writing or on PTA's website. Questions will normally be published without disclosing the name of the prospective applicant(s).
- 3.1.3 All correspondence relating the NGMS/5G Auction process should be duly marked "NGMS/5G Auction" and addressed via email (preferred) or letter:

Director General (Wireless Licensing)
E-mail: 5Gauction2026@pta.gov.pk
Pakistan Telecommunication Authority
PTA Headquarters, Sector F-5/1, Islamabad
Pakistan
Phone: (+92 51) 2878128

3.2. Application Form

To qualify for participation in the auction, each prospective bidder is required to prepare and submit a formal application before the due date. The Application Form, including a checklist of all required information, is set out in Appendix A". PTA reserves the right to request additional information and/or seek clarifications from an Applicant, and to consider such responses to be part of the original application form.

3.2.1. Application Form Structure

- a) The application should follow the structure and provide the information set out in Appendix "A", consisting of categories of information:

- i) Applicant information (including information about ownership);
- ii) Names and contact information of Authorized Representatives and contacts (see Section 3.2.3 and Appendix "B");
- iii) Qualifications, experience and access to finance;
- iv) Company certificate authorizing the company to submit the Application;
- v) Company Resolution (see Appendix "C");
- vi) Resolution of the Board of Directors authorizing the Authorized Representatives;
- vii) A signed statement on word of honour by the Authorized Representative on behalf of the Applicant making warranties (see Section 3.2.4);
- viii) Special power of attorney for each Authorized Representative;
- ix) Company registration documents; and
- x) Pre-bid deposit.

3.2.2. Eligibility Points & Pre-Bid Deposits

- a) New Entrants will only be permitted to bid for spectrum in the 700 MHz, 2100 MHz, 2300 MHz, 2600 MHz and 3500 MHz bands. Accordingly, at start of auction, a New Entrant will have 340 eligibility points, sufficient to bid for at most 340 MHz. Existing MNOs may be restricted to bid on a smaller aggregate amount of MHz in the Main Auction owing to the spectrum cap on total holdings, as described in Section 1.1.1;
- b) The amount of pre-bid deposit is US\$15 million that is a pre-requisite for an Application to be considered for evaluation before Qualification Stage. Therefore, an application must be accompanied by a supporting pre-bid deposit. The purpose of the pre-bid deposit is to demonstrate the applicant's commitment to the process and its financial viability to support its bids. The pre-bid deposit form is set out in Appendix E;
- c) The pre-bid deposit shall be submitted in US Dollars or its equivalent in Pakistan Rupees to be converted at the National Bank of Pakistan (NBP) Telegraphic Transfer (TT) selling rate prevailing on the day preceding the date of payment along with the application;
- d) If the payment of the pre-bid deposit to PTA is being remitted from abroad, it should be remitted through SWIFT Telegraphic Transfer to PTA's bank Account Number 3000942222 being maintained at National Bank of Pakistan, Corporate Branch, Islamabad, Pakistan under intimation to PTA having clearly marked the reference "NGMS/5G Auction". The Applicant must ensure that the credit of pre-bid deposit in

PTA's bank account is completed in all respect latest by the date included in section 1.3 of this IM without deduction of any charges, taxes etc. In this regard the Applicant is suggested to include following instructions clearly and correctly in the SWIFT message:

IBAN NO: PK39NBPA2221003000942222

SWIF CODE: NBPAPKKASMB

ROUTING BANK: CHASE MANHATTAN BANK-US

Account No: 001 1 683760

CHASUS33

Field 71A :Detail of Charges: OURS

(This field is suggested to ensure that no charges, taxes are deducted or charged to PTA)

Purpose: Spectrum Auction NGMS/5G Auction

- e) If the payment of the pre-bid deposit is being made from sources in Pakistan, it should only be made through RTGS in PTA Collection Account 3000942222 (IBAN PK39NBPA2221003000942222 maintained with Corporate Branch, National Bank of Pakistan, Islamabad having clearly marked the reference "NGMS/5G Auction". The Applicant must ensure that the credit of pre-bid deposit in PTA's bank account is completed in all respects latest by the date included in section 1.3 of this IM without deduction of any charges, taxes etc;
- f) Any delays in transfer of funds should be taken up by the Applicants and enough time should be allowed to ensure that all amounts are received in PTA's bank account by the given deadline. The applicant shall ensure that full amount of irrevocable pre-bid deposit has been credited/ transferred in above referred bank accounts latest by the due date as mentioned in this IM; and
- g) For return of pre-bid deposit(s), it shall be the same amount in PAK rupees that was credited to PTA account at the time of deposit irrespective of the deposit currency. It shall be returned in local currency without any liability towards exchange rate, interest, indexation, inflation or deflation. The pre-bid deposit of an unsuccessful Applicant that has not incurred any penalties will be returned, on request, within thirty (30) days of the announcement of Qualified bidders. However, for return of pre-bid deposit, the Provisional Winner(s) will be required to furnish performance bank guarantees for the rollout obligations.

3.2.3. Representative and Contacts

- a) As part of their Application Form, an applicant is required to designate one or more authorised representatives and one or more Authorized Contacts:

- i) The Authorized Representative is the signatory for all relevant documents and must have the authority to commit the company to Application and bidding in the NGMS/5G Auction. Supporting documentation must be provided to demonstrate their status;

An Applicant may designate up to two Back-up Authorized Representatives, whose individual signatures also have the authority to bind the company.

- ii) The Authorized Contact will be the recipient for all communications / correspondence from PTA and Auction Managers related to the award process. The Authorized Contact is expected to be available throughout the entire award process to receive and respond to award notifications.

An Applicant may designate up to two Back-up Authorized Contacts, who are also authorized to receive and respond to NGMS/5G Auction communications on behalf of the Applicant.

- b) Please note that an Authorized Contact may be but does not have to be the same person as an Authorized Representative; and
- c) Applicants and Qualified bidders are expected to use the same Authorized Representatives and Authorized Contacts throughout all five stages of the award process. PTA may, at its discretion, accept changes to an Applicant's or Qualified bidder's Authorized Representatives and Authorized Contacts, provided the company can demonstrate good reason for the change. This will require submission and review of relevant documents, consistent with requirements at application.

3.2.4. Conditions of Participation in the Award Process

- a) Each Applicant must be a company registered with the Securities and Exchange Commission of Pakistan (SECP) in Pakistan;
- b) All Applicants must disclose their complete ownership information with details of individual shareholdings greater than 10% on the Application Form. Applicants must also disclose any other agreements with other parties that would enable another party to exercise control or influence over the company or access confidential information in relation to the company's participation in the 5G award process.

c) Warranties

- i) At the time of submitting an application, Applicants are required to warrant that:
 - (1) the Company or its Directors have never been declared insolvent by a court of law or government organization;

- (2) neither the applicant Company nor its group/consortium members are defaulter(s) of PTA;
 - (3) they are not aware of any insiders associated with their participation in the NGMS/5G Auction process that are also insiders to another Applicant;
 - (4) they have not knowingly and will not knowingly commission services from any outside advisers who are also advising another Applicants;
 - (5) they will not engage in collusion;
 - (6) they will not share confidential information with another Applicant;
 - (7) they will participate in and not unreasonably obstruct any future replanning exercises involving spectrum suitable to cellular mobile use, including but not limited to spectrum awarded in the NGMS/5G Auction and prior allocation processes, if such exercises are required by PTA/FAB or other GoP entity on spectrum management grounds, and it is understood that this may require a shift in frequency position within a frequency band;
 - (8) they have taken all steps to ensure they are in compliance with these warranties; and
 - (9) they will immediately inform PTA if they become aware of any change in circumstances that impacts these warranties in any of the five stages of the NGMS/5G Auction process.
- ii) The terms collusion, confidential information and insider are defined below. By Applicant, we mean any party that submits an application and/or qualifies as a bidder in the NGMS/5G Auction.

d) Prohibition on Collusion and Sharing of Confidential Information

- i) When submitting an Application, Applicants are required to warrant that they will not engage in collusion with other Applicants. By Applicant, we means any party that is submits an application and/or qualifies as a bidder in the NGMS/5G Auction, Examples of collusion include but are not limited to sharing of confidential information with other Applicants, coordination of submissions or bid decisions in any stage of the NGMS/5G Auction, or having an Insider who is common to two or more Applicants.
- ii) Confidential Information means any information which, if known to other Applicants, would be likely to affect the bidder's behaviour in the Auction, including but not limited to their demand for spectrum lots and the prices they bid. Such information would include, but not necessarily be limited to, the

Applicant's business case, auction strategy, valuations for spectrum and budget constraints. Any party to whom Confidential Information in relation to an Applicant is disclosed is deemed to be an Insider in relation to that Applicant. Applicants and Insiders must not convey Confidential Information to any other Applicant or Insider.

- iii) In case there is any evidence of collusion, PTA reserves the right to disqualify all the colluding Applicants from the Auction process. If PTA confirms evidence of collusive bidding before, during or after the auction, PTA has the right to take any action that it deems necessary to protect the integrity of the NGMS/5G Auction process. This may include but is not limited to the following actions against colluding parties: cancelling the NGMS/5G Auction process and setting up a new process, from which the colluding parties may be excluded; forfeit of full amount of pre- bid deposit and any other amount deposited against the Spectrum Price; cancelling any License(s) that have been awarded to them in the NGMS/5G Auction and reallocating the associated spectrum; and claiming additional damages.

e) Disqualification

- i) Without prejudice to any other remedy that may be available to it, PTA reserves the right to disqualify any Applicant and forfeit its pre-bid deposit for any of the reasons set out below:
 - (1) Deliberate or negligent inaccuracy or misrepresentation of any facts in any part of the Application Form or in subsequent communications with PTA;
 - (2) Illegal conduct, disruption during the auction, improper attempts to influence the outcome, or delay the process, or collusion;
 - (3) Any "corrupt practice" meaning undue influence, personating, aiding, abetting, counselling or the offering, giving, receiving or soliciting of anything of value to influence a public official in relation to auction process; and
 - (4) Any fraudulent practice or misrepresentation of facts in order to influence the results of the auction process established by the IM.
 - (5) If a Winning Bidder fails to furnish performance bank guarantee against the rollout obligations.
- ii) In the event of an Applicant being disqualified from the process, PTA reserves the right to forfeit of its full amount of pre-bid Deposit. Additional damages could also apply proportionate to the offence.

f) Associated Costs

The Applicant shall bear all its costs associated with the preparation and submission of its Application and participation in the award process. PTA shall not be responsible for these or any other costs, regardless of the conduct or outcome of the application process and subsequent stages of the award process.

3.3. Application Submission

3.3.1 The Application Form must be in the English language and delivered in hard copy. One (1) original signed by the Applicant's Authorized Representative plus (2) two copies of the same must be submitted to PTA at the address provided below by 4 pm Pakistan Standard Time by the deadline for Application. The deadline for application will be the date announced in Section 1.3 of the IM unless an alternative date is announced on PTA website.

3.3.2 The address for delivery of hard copy applications is:

Director General (Wireless Licensing)
Pakistan Telecommunication Authority
PTA Headquarters, Sector F-5/1, Islamabad
Pakistan

3.3.3 Applications shall be submitted in sealed envelopes labelled with the Applicant's name and include the reference: "Application to participate in the NGMS/5G Auction".

3.3.4 Delivery by alternative means is not permitted. However, prospective applicants may address enquiries about the application process by email or phone:

Email: 5Gauction2026@pta.gov.pk
Phone: (+92 51) 2878128

3.3.5 Applicants should also prepare an electronic copy of their Application in pdf format. PTA may ask each Applicant to submit a searchable electronic copy of the Application to PTA after the announcement of Applicants. In case of discrepancy between the original application format and any copies in any format, the original shall prevail.

4. Qualification Stage

In this section, we describe the process for announcing applicants, qualifying bidders and the activities between the announcement of Qualified bidders and the start of the Allocation Stage. This is Stage 2 of the award process.

4.1. Announcement of Applicants

Following close of the deadline for receipt of Applications, PTA will open all Applications received. PTA will collate a list of Applicants that will be published on its website. Applicants are advised to scrutinise the list carefully to ensure that they are not associated with another Applicant. An Applicant is associated with another Applicant if they have common ownership greater than 10%, are under the control of a common entity, or have an insider who is also an insider for another Applicant. Applicants must inform PTA immediately if they identify any association.

4.2. Qualification Process

- 4.2.1 Upon receipt of the Application Form, PTA will review each Application Form to determine whether the applicant complies with all requirements. Where an Application is deficient of any supporting document, PTA may ask the Applicant to provide any missing information or additional documentation.
- 4.2.2 PTA will review each Application Form and pre-bid deposit, together with any other documents that PTA may deem relevant to the process, to determine if the eligible applicant:
- a) Has provided all required information in the correct format;
 - b) Has submitted a valid proof of pre-bid deposit;
 - c) Has met the requirements of the check list at Appendix A (Application Form); and
 - d) Has no association with another Applicant.
- 4.2.3 PTA reserves the right to accept or reject all or any application or bid without assigning any reason and incurring any liability whatsoever. However, in case of rejection of application, pre-bid deposit will be returned within 30 days unless the amount is otherwise subject to forfeit.
- 4.2.4 Once the evaluation process is complete, PTA will publish a notice on its website announcing the number of bidders and the identity of all Qualified bidders.

4.3. Activities for Qualified Bidders

4.3.1 Qualified bidders will be invited to participate in a number of activities prior to the start of the Allocation Stage.

4.3.2 These activities include:

- a) **Q&A.** Bidders may submit questions in writing by email (to an address that will be supplied to qualified bidders) seeking clarifications regarding the auction rules and award process. PTA is not obliged to respond to any question but will normally aim to respond in writing. Responses will normally be reported to all bidders in a form that does not identify the party that asked the question.

PTA may request submission of questions by a particular date, so that it can provide a single collated list of questions and answers in response. For avoidance of doubt, Qualified bidders may continue to ask clarification questions after this deadline.

- b) **Bidder Seminar.** At the bidder seminar, PTA and its Consultant (NERA) will present and answer questions on the auction rules and award process. The bidder seminar may be conducted in person, for example at PTA premises, and/or via video conference, at the discretion of PTA.

At least three representatives of each bidder are expected to attend the bidder seminar either in person or via video conference if this is available. Attendees for each Applicant must include at least one Authorized Representative. If any of the in-person attendees are not Authorized Representatives or Authorized Contacts, as set out in Application, then the Applicant will need to register them with PTA.

After the bidder seminar, secure credentials to access the EAS will be distributed to the Authorized Representatives of qualified bidders. PTA will determine whether distribution is in person or via secure email.

- c) **Bidder Manual for the EAS.** Each Applicant will receive a copy of the bidder manual for the electronic auction system. This provides guidance on how to access the EAS, submit bids and utilize other functionality. The bidder manual will normally be distributed in pdf format to the Authorised Contact by email.
- d) **Mock Auction.** Qualified bidders are expected to participate in a mock auction. During the mock auction, bidders will have the opportunity to log on to the EAS and participate in a number of mock bidding rounds. The purpose of the mock auction is to allow bidders time to familiarize themselves with the EAS.
- e) **Bidder Guidance.** Prior to the auction, PTA may provide guidance to bidders on how it intends to exercise its discretion with respect to setting auction parameters, such as

round scheduling, bid increments and emergency procedures. The bidder guidance will normally be distributed in pdf format to the Authorised Contact by email.

5. Allocation Stage

In this section, conduct of the Allocation Stage is described, which includes the Main Auction. This is Stage 3 of the award process. An overview of the auction format, auction rules and Electronic Auction System (EAS) that will be used to run the Main Auction is introduced.

5.1. Overview of Auction Format

5.1.1 The Allocation Stage determines the amount of spectrum (generic lots) awarded to each bidder, as well as the price for each generic lot. The Main Auction format will be a clock auction with demand retention. A clock auction is a type of simultaneous, multiple round auction in which bidders bid for quantities of generic lots in one or more categories. The addition of demand retention ensures that lots within each category can only go unsold if there was deficient demand throughout the auction.

5.1.2 Key features of this format are as follows:

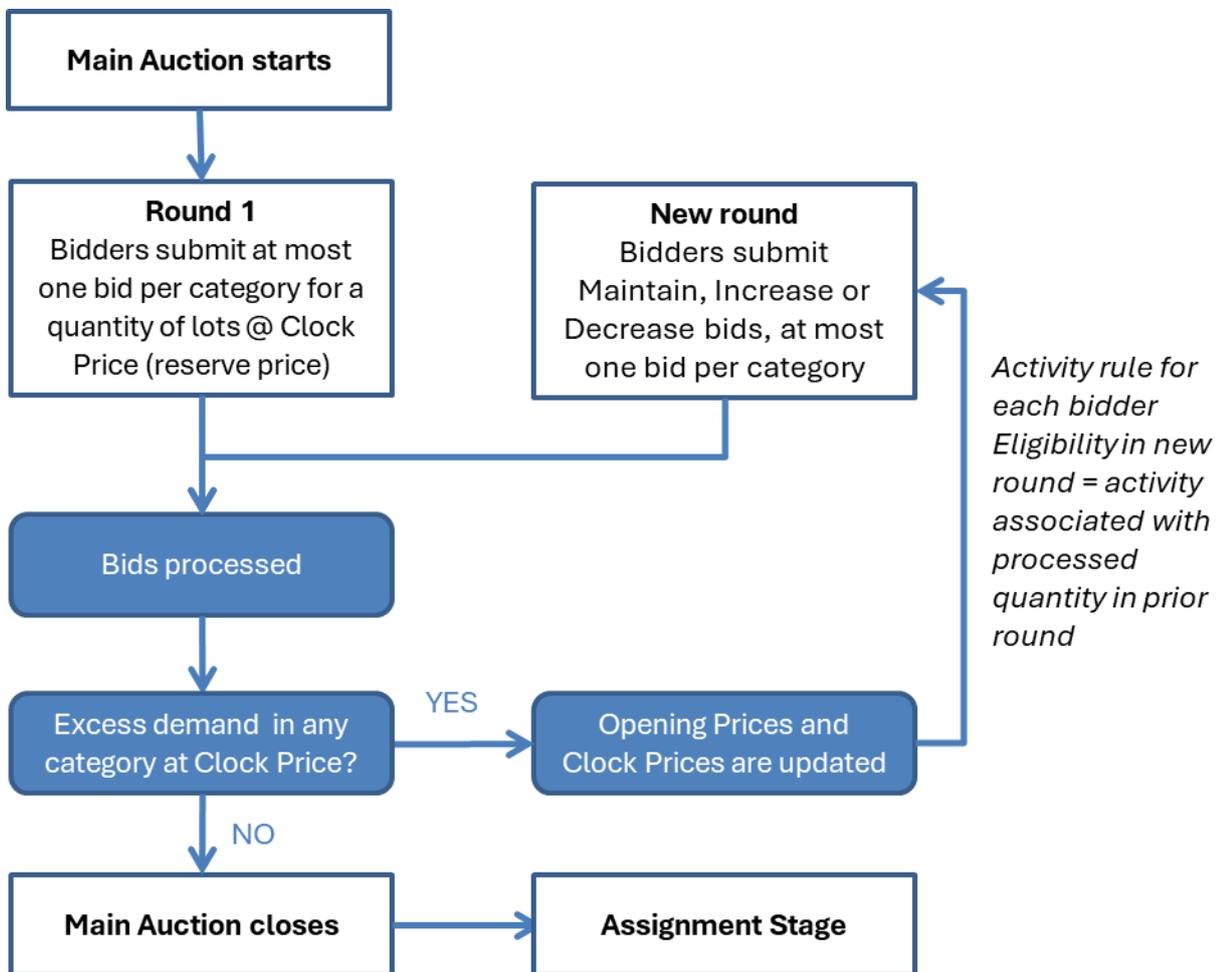
- a) Bidding takes place over multiple rounds;
- b) In each round, bidders are invited to submit multiple bids, at most one bid per category. A bid for lots in a specific category is a price-quantity pair that consists of a Bid Price (in USD) and a Bid Quantity (in lots). Each bid represents a commitment to pay (up to) the stated price for each lot for (up to) the stated quantity;
- c) In each Round, bidding is subject to constraints on permitted Bid Prices and permitted bid Quantities across the lot categories. Bid Prices in Round 1 must be at the Reserve Price. In subsequent rounds, they must be between the Opening Price and the Clock Price, as specified in the EAS. Bid Quantities must be no greater than the available supply and be consistent with the spectrum caps and minimum bid requirements, as described in Section 2.2.3. A bidder's aggregate demand, measured in eligibility points, across all bids submitted in the same round, but also comply with the Activity Rules;
- d) From Round 2 onwards, in each category, bidders may submit a bid to maintain their demand at the Clock Price (a "Maintain bid"), decrease their demand (a "Decrease bid") or increase their demand (an "Increase bid"). Bidders may attempt to switch demand from one or more categories to other categories by entering a combination of Increase bid(s) and Decrease bid(s) that complies with the Activity Rules;
- e) Immediately after the close of the Round, the bids are processed using a queuing system. Although the description of the bid processing rules in Section 5.2 may appear complex, the underlying principles are straightforward. Maintain bids are

always accepted. Decrease bids are only applied (in full or in part) if there is sufficient remaining demand, such that the Processed Price is equal or greater than the Bid Price at which a bidder requested the decrease. Increase bids (in full or in part) are only applied if the bidder has sufficient eligibility, after taking into account any Decrease bids that were not applied; and

- f) If a round ends with processed demand exceeding supply in any category, there is a further round of bidding for all categories. The auction ends after the first Round where processed demand is less than or equal to Supply in every lot category.

5.1.3 An illustration of this process is provided in Figure 2. Detailed auction rules for the Main Auction are set out in Section 5.2.

Figure 2: Illustration of Main Auction Process



5.1.4 In the 5G era, the Clock Auction has emerged as the most commonly used format for multi-category auctions, supplanting traditional SMRA designs.¹⁰ The specific rules we describe here are similar to those adopted by other leading regulators for major auctions, including but not limited to the Australia 3.4 GHz / 3.7 GHz Auction (2023), the Canada 3800 MHz Auction (2023), the UK mmWave auction (2025) and the US C-band Auction (2021). In some of these countries, the format has been called an “Enhanced Simultaneous Multiple Round Auction” (eSMRA). The format has a track record of efficiently allocating generic spectrum lots subject to enforcing policy constraints.

5.2. Auction Rules

Rules for the Main Auction are set out here.

5.2.1. Bid Submission, Bid Processing and Prices

The rules governing bid submission, bid processing and the setting of prices for the next round are described. The rules for Round 1 only differ from the rules for subsequent rounds.

a) Bid Submission in Round 1

- i) In Round 1, bidders submit one or more bids for a “Bid Quantity” (a number of lots) at the “Bid Price”, at most one bid per category. In Round 1 only, the Bid Price in each category is fixed and set equal to the Reserve Price for that category, as set out in Table 6. For each category, a bid for X lots in Round 1 represents a commitment to buy up to X lots at the Reserve Price;
- ii) Each bidder’s Round 1 bids must also meet the following requirements:
 - (1) The Bid Quantity cannot exceed the available supply in any category;
 - (2) A bidder’s demand in MHz (for a quantity of lots in a category or in aggregate across relevant categories) must not exceed any Spectrum Cap, as described in Section 1.1.1;
 - (3) The Activity associated with the set of bids across all categories (measured in eligibility points) cannot exceed the bidder’s starting eligibility; and
 - (4) If a Minimum Bid Requirement applies to a category, as described in Section 1.1.1, the Bid Quantity must be equal to or greater than the Minimum Bid Requirement.

¹⁰ Marsden, R, 2024, Round-by-Round, Learnings from the First 35 Years of Spectrum Auctions, NERA, p. 60 (available at amazon.com and nera.com).

- iii) Any bids that do not meet these requirements will be blocked by the EAS; and
- iv) If a bidder fails to submit a valid set of bids in Round 1, it will be deemed to have submitted a bid for zero lots across all lot categories. In this case, pre-bid deposit money of such bidder will be forfeited in full and it shall be excluded from further participation in the auction.

b) Bid Processing in Round 1

- i) After the close of bid submission in Round 1, all bids are processed by the EAS. Each bidder's Processed Quantity in a category is equal to its Bid Quantity in that category. The Processed Price for each category is the Reserve Price for that category; and
- ii) The Auctioneer will also determine, for each category, the level of aggregate demand (the sum of Processed Quantities at the Processed Price across all bidders) and the level of excess demand (aggregate demand less supply) in each category. These calculations are used to determine if the Main Auction will continue:
 - (1) If excess demand is positive in one of more categories, then the Main Auction will proceed to Round 2.
 - (2) If excess demand is zero or negative in every category, then the Main Auction will end after Round 1.

c) Bid Prices for Subsequent Rounds

- i) From Round 2 onwards, Bid Prices are subject to a minimum and a maximum for each category:
 - (1) The minimum for each Bid Price is known as the Opening Price. The Opening Price in each Round is equal to the Processed Price for the previous Round.
 - (2) The maximum for each Bid Price is known as the Clock Price, which is set equal to the Opening Price plus a fixed price increment (see Section 5.2.2).
- ii) The EAS prevents bidders from submitting Bid Prices outside the interval between Opening Price and Clock Price;
- iii) Each Bid Price also has an associated Price Point, which is a percentage number between 0% and 100%. The Price Point is calculated using the following formula:

$$\frac{\text{Bid Price} - \text{Opening Price}}{\text{Clock Price} - \text{Opening Price}}$$

- iv) The Price point is used for bid processing within the EAS from Round 2 onwards, as described below.

d) Bid Submission in Subsequent Rounds

- i) From Round 2 onwards, bidders may submit bids to Maintain, Increase or Decrease their quantity of lots demanded in each category, as follows:

- (1) A **Maintain Bid** has a Bid Quantity equal to the bidder's Processed Quantity from the previous round at a Bid Price equal to the Clock Price. Such bids will always be processed by the EAS at the end of the round;

- (2) A **Decrease Bid** has a Bid Quantity smaller than the bidder's Processed Quantity from the previous round at a Bid Price between the Opening Price and Clock Price (inclusive). For the purposes of bid processing, such a bid means the following:

- (a) At any Processed Price below the Bid Price, the bidder is demanding its prior round Processed Quantity;

- (b) If the Processed Price equals its Bid Price, the bidder is demanding any quantity between its Bid Quantity and its prior round Processed Quantity (inclusive); and

- (c) At any Processed Price above the Bid Price, the bidder is demanding its Bid Quantity.

Decrease bids may be processed in full or partially, as described above.

- (3) An **Increase Bid** has a Bid Quantity larger than the bidder's Processed Quantity from the previous round at a Bid Price between the Opening Price and Clock Price (inclusive). For the purposes of bid processing, such a bid means that the bidder is demanding any quantity between its prior round Processed Quantity and its Bid Quantity (inclusive) at the Clock Price. In this case, the Bid Price is only relevant for determining the price point at which the bid is processed (see below).

- (4) Increase bids are always processed in full if they comply with the Activity Rules; if not, they may be rejected or only partially processed, as described below:

Each bidder's bids must also meet the following requirements:

- (a) The Bid Quantity cannot exceed the available supply in any category;

- (b) A bidder's demand in MHz (for a quantity of lots in an individual category or in aggregate across relevant categories) must not exceed any Spectrum Cap, as described in Section 1.1.1; and
- (c) The Activity associated with the set of bids across all categories cannot exceed the bidder's Eligibility, as determined according to the Activity Rules below.

Any bids that do not meet these requirements will be blocked by the EAS.

- (5) From Round 2 onwards, the following Activity Rules apply:
 - (a) Each lot within a category has an associated number of Eligibility Points, set out in ;
 - (b) Each Bid Quantity and each Processed Quantity has an associated number of Eligibility Points, which is the number of Eligibility Points per lot multiplied by the quantity of lots. (As described below, from Round 2 onwards, a bidder's Processed Quantity may differ from its Bid Quantity because some Increase Bids or Decrease Bids are not processed);
 - (c) Each bidder in each round has an Eligibility, expressed in points. This Eligibility is equal to the sum of the points associated with its Processed Quantities at the end of the prior round;
 - (d) Each bidder in each round has a bid Activity, expressed in points. This Activity is equal to the sum of the points associated with its Bid Quantities. This cannot exceed its Eligibility; and
 - (e) After bid processing (described below), each bidder in each round has a Processed Activity, expressed in points. This Activity is equal to the sum of the points associated with its Processed Quantities. This also cannot exceed a bidder's Eligibility.
- (6) For avoidance of doubt, the minimum bid requirements in Round 1 no longer apply from Round 2 onwards. Thus, bidders can bid to reduce their demand below the Round 1 minimum in subsequent rounds. However, such reductions would only be processed if accepting them will not cause demand to fall below supply.
- (7) If a bidder fails to submit a valid set of bids in Round 2 or in a subsequent round, it will be deemed to have submitted Decrease Bids for zero quantity at the Opening Price in every category. This set of bids will be processed alongside other bids, as set out below. Such a bidder may or may not be

retained on some of their prior demand in bid processing; if they are retained on any demand, they will remain eligible to bid in subsequent rounds.

e) Bid Processing – Subsequent Rounds

- i) Bid Processing determines each bidder's Processed Quantity and the Processed Price (which is the same for all bidders) for each lot category;
- ii) From Round 2 onwards, Bid Processing is conducted automatically within the EAS using the following procedure:
 - (1) All Maintain Bids are processed in full;
 - (2) The remaining Increase Bids and Decrease Bids are ranked in a queue from lowest to highest price point. The bids are processed in queue order. If two or more bids from one or more bidders have the same price point, then the order in the queue of these bids will be determined at random by the EAS, and the resulting order shall be maintained throughout bid processing;
 - (3) Decrease Bids are processed as follows:
 - (a) If the decrease in quantity will not cause aggregate demand to fall below supply in the relevant category, then the bid is processed in full.
 - (b) If the decrease in quantity would cause demand to fall below supply, then:
 - (i) If part of the decrease in quantity can be accepted without causing aggregate demand to fall below supply, then this part of the bid is processed;
 - (ii) If no part of the increase in quantity can be accepted without causing aggregate demand to fall below supply, then no part of the decrease is processed.
 - (4) Increase bids are processed as follows:
 - (a) If the increase in quantity can be accepted without violating the activity rules, the bid is processed in full;
 - (b) If the increase in quantity can only be partially accepted without violating the activity rules, then only that part of the increase is accepted; and
 - (c) If no part of the increase in quantity can be accepted without violating the activity rules, then no part of the increase is accepted.
 - (5) If a bid is not processed or is only partially processed, then the processing algorithm within the EAS will move on to the next bid in the queue. The

unprocessed bid or unprocessed part of a bid is returned to the top of the queue. As a consequence of this rule, any part of a bid that is returned to the queue may be repeatedly reprocessed, and all or part of the bid may be accepted if conditions change owing to the processing of other bids;

- (6) Bid processing continues until there are either no bids remaining in the queue or all remaining bids cannot be processed. Any bids or parts of a bid that cannot be processed are rejected:
 - (a) If a Decrease bid is rejected in full or in part, then that part that is rejected will remain part of the bidder's Processed Quantity;
 - (b) If an Increase bid is rejected in full or in part, then that part will be excluded from the bidder's Processed Quantity.
- (7) Next, the EAS will calculate the Processed Price for each category:
 - (a) If aggregate demand was less than or equal to supply in the previous round and remains less than or equal to supply in the current round, the Processed Price will be the Opening Price;
 - (b) If aggregate demand exceeds supply at the Clock Price, the Processed Price will be the Clock Price;
 - (c) If one or more Decrease Bids were fully or partially rejected, then the Processed Price will be set equal to the lowest price at which any part of a Decrease bid was rejected.
- (8) Finally, the EAS will determine if the Main Auction will continue:
 - (a) If excess demand is positive in one of more categories, then the Main Auction will proceed to the next round;
 - (b) If excess demand is zero or negative in every category, then the Main Auction will end.
- (9) As a consequence of these rules:
 - (a) a Decrease Bid can only be fully or partially rejected if the Processed Price is less than or equal to the bidder's Bid Price for that category;
 - (b) an Increase Bid can only be rejected in full or in part if one or more Decrease Bids by the same bidder in another category were fully or partially rejected and this resulted in said bidder having insufficient remaining eligibility to process the Increase Bid in full or in part; and

- (c) If a bidder submits Increase Bids in two or more categories in the same round, it can prioritize particular bids in the queue by setting a lower price point for that bid. Consequently, if a Decrease Bid is fully or partially rejected and it is not possible to process all of the bidder's Increase Bids, the bid at the lower price point will be prioritized within the processing queue.

5.2.2. Auction Parameters

Auction parameters include round scheduling, price increments and extension rights. The Auctioneer has wide discretion to set the "auction parameters" in each round, subject to certain rules set out here. PTA may provide further guidance to Qualified Bidders regarding how it plans to exercise this discretion prior to or during the Main Auction but is not bound by such guidance.

a) Round Scheduling

- i) The timing of the clock rounds is at the auctioneer's discretion i.e. PTA. In particular, the auctioneer is free to set the duration of rounds and the interval between rounds in a manner it considers appropriate for an orderly and speedy conduct of the auction. It is not expected, however, that a clock round will last less than 15 minutes or more than two hours;
- ii) Clock rounds will not commence before 09:00 hours and not after 17:00 hours on normal working days in Pakistan. The number of clock rounds per day is not limited. The auctioneer informs bidders about the starting time of a clock round and the length of the planned clock round at least 15 minutes in advance of the scheduled start;
- iii) At the same time the auctioneer also informs each bidder about the Opening Prices and Clock prices for each category; and
- iv) At the end of each auction day the auctioneer informs bidders about the provisional round schedule for the next auction day. This schedule is not binding and may be changed by the auctioneer, though the auctioneer will not run more rounds than have been notified.

b) Price Increments and Determination of the Clock Price

- i) The decision about the amount by which the Clock Price increases (the price increment) is at the auctioneer's discretion;
- ii) The auctioneer will determine the price increments in such a way as to ensure an orderly and speedy conduct of the auction. However, the clock price in each

category will not rise by more than 20% from one clock round to the next. The Auctioneer may also set a cap on the size of a price increment in USD; and

- iii) The auctioneer informs bidders at the end of each auction day provisionally of the price increments that it intends to apply on the following day. Such information is not binding, and the auctioneer is free to set different price increments. However, the auctioneer will not set higher increments than have been provisionally notified.

c) Extension Rights

- i) Every bidder is entitled to two round extension rights at the beginning of Main Auction. The auctioneer may at its discretion grant further round extension rights, either to individual bidders or to all bidders, though only between rounds and not during a round;
- ii) A bidder who is eligible to submit bids and fails to do so before the scheduled end of the round and has a remaining (unused) round extension right will automatically trigger an extension of the round by up to 30 minutes in which the bid can be submitted and thereby use the extension right; and
- iii) Only bidders who have triggered an extension will be able to submit their bids within the extension period. An extended round ends automatically when all bidders who have triggered a round extension have submitted their bids, or after 30 minutes, whichever is the earlier.

5.2.3. End of Main Auction

If, as part of the bid processing in a round, the EAS identifies that no further rounds are required, then this round is declared the Final Round. Each bidder in each category is provisionally allocated their Processed Quantity at the Processed Price in the Final Round.

5.2.4. Information Policy

- a) After the completion of each Round (except the Final Round), the EAS will provide the following information to each bidder:
 - i) The bidder's own Processed Quantity in each category;
 - ii) The Processed Price in each category;
 - iii) Aggregate demand and excess demand in each category;
 - iv) The next round Opening Price and Clock Price for each category; and
 - v) The start and end time for the next Round.

- b) There may be a time gap between the announcement of round results and the announcement of information about the next round;
- c) After the completion of the Final Round, the EAS will provide the following information to each bidder:
 - i) An announcement that the Main Stage has concluded;
 - ii) The bidder's own Processed Quantity in each category; and
 - iii) The Processed Price in each category.
- d) No information about the quantities awarded to other bidders or the quantities that have gone unsold (if any) will be provided at this time.

5.2.5. Exceptional Circumstances

- a) In exceptional circumstances the auctioneer may, at any point in the Allocation Stage and at their discretion:
 - i) postpone the end of a current round or the publication of the results of the round;
 - ii) postpone subsequent rounds;
 - iii) cancel a round which is still in progress or for which the results have not yet been made known and set a new date for this round;
 - iv) declare one or more rounds and bids submitted therein as invalid and resume the auction from an earlier round;
 - v) declare all bids submitted during that bidding phase to be invalid and either cancel or restart that bidding phase (and potentially any previous bidding phase) or cancel the entire 5G award process.
- b) It is the auctioneer's responsibility to decide whether an exceptional circumstance exists. Significant technical problems or a suspicion of collusion between bidders could, for example, constitute such exceptional circumstances.

5.3. Electronic Auction System

- 5.3.1 The Main auction will be conducted using an EAS. Qualified Bidders will be provided with a Bidder Manual that describes how to use the EAS, including the secure logon process and recommended equipment setup. Bidders will participate remotely. Each bidder is responsible for setting up their own 'auction room' with necessary infrastructure to support their bidding. No specialist equipment is required but each bidder will require adequate

computing power, an up To date browser from a leading provider and a good Internet connection. A second, back-up Internet connection is strongly recommended.

5.3.2 Bids must be submitted through the EAS (unless an exception is made by the auctioneer). Bid submission is a two-step process, with bidders first submitting a set of bids for checking and then confirming their valid bid set.

5.3.3 Exceptionally, if a bidder can demonstrate to the auctioneer that it is unable to submit a bid through the EAS owing to circumstances outside its control, the auctioneer may (at its sole discretion) accept a set of bids by phone or email. A system of secure passwords will be used to validate any such bids. For avoidance of doubt, a failure to bid owing to delays in decision making or dependence on an insufficiently resilient network will not normally be considered grounds for an exception.

5.4. Announcement of Provisional Allocation Stage Results

5.4.1 Following the conclusion of the Main Auction, the Auctioneer will prepare a summary of the Allocation Stage results, including:

- a) Identity of each provisional Winning Bidder;
- b) For each provisional Winning Bidder:
 - i) The amount of spectrum provisionally won in each frequency band; and
 - ii) The Allocation Price.

5.4.2 PTA may, at its sole discretion provide further information, such as identifying the specific frequencies won by each bidder, and a breakdown of the Allocation Price by category.

5.4.3 This information will normally be made available to all bidders on the same day as the Final Round. Subsequently, this information may be published on PTA website. Bidders are reminded that all information about auction results remains confidential until such time it is published by PTA.

6. Assignment Stage

- 6.1 In this section, conduct of the Assignment Stage of the NGMS/5G Auction is described. This is Stage 4 of the award process.
- 6.2 The Assignment Stage assigns specific frequencies to Winning Bidders corresponding to the total spectrum allocated to them in each category in the Allocation Stage.

6.1. Scheduling Assignment Rounds

- 6.3.1 Following the conclusion of the Allocation Stage, the Auctioneer will announce a schedule for the Assignment Stage. This will normally be announced through the EAS.
- 6.3.2 The Auctioneer has discretion over this schedule, but an indicative process is as follows:
 - a) Same day or next business day after conclusion of the Final Round, the Auctioneer will notify bidders of the schedule for Assignment Stage bidding rounds; and
 - b) There will be a reasonable gap between this notification and the first assignment bidding round.

6.2. Determination of Assignment Bid Options

- 6.4.1 The Auctioneer will prepare a set of bid options for each provisional Winning Bidder in each band, based on the outcome of the Allocation Stage.
- 6.4.2 For each category, each bid option must be:
 - a) a contiguous block of spectrum;
 - b) consistent with the bidder's total MHz won in that band;
 - c) compatible with all other Winning Bidders being assigned contiguous spectrum; and
 - d) compatible with any unallocated lots being assigned to a contiguous block.
- 6.4.3 Additional conditions apply to bid options in the following bands:
 - a) 1800 MHz: if a Winning Bidder already has existing adjacent spectrum License(s), then their assignment must be contiguous with this spectrum; and
 - b) 3500 MHz band: any unallocated lots must be assigned to the top of the band.

6.3. Assignment Round Auction Rules

- 6.5.1 The auction format for this process is similar to the multi-round format used for the Allocation Stage (as described in Section 5).
- 6.5.2 Bidding at the Assignment Stage will be in terms of relative positions within each band. A band that has N provisional winners will have N different bid options:
 - a) Rank 1: The lowest contiguous frequencies in the band;
 - b) Rank 2: The second lowest contiguous frequencies in the band; and
 - c) Rank N: The highest contiguous frequencies in the band.
- 6.5.3 The different bid options will be offered as abstract lots with a reserve price of \$0. Each abstract lot has 1 eligibility point, and each provisional winner in a band enters the auction with 1 eligibility point per band. This ensures that in each round a bidder can only bid for one position within a band.
- 6.5.4 Assignment positions are determined simultaneously for all bands, but bidders cannot switch eligibility between bands.
- 6.5.5 Participation in the Assignment Stage is voluntary. If a bidder does not participate, or if the bidder reduces eligibility to 0 points before the Assignment Stage concludes, PTA will assign available frequencies to provisional winners (at random in of case multiple bidders).
- 6.5.6 After the auctioneer has determined the successful assignment bids and the Assignment Prices to be paid, all bidders are informed about the specific frequency assignments in each of the bands.

7. Grant Stage

PTA will manage the public announcement of provisional auction results, the determination of Spectrum Fee(s), receipt of performance bank guarantee(s), and the grant of License(s) to Winning Bidders. This is Stage 5 and the conclusion of the award process.

7.1. Announcement of Auction Results

7.1.1 Following the conclusion of the Assignment Round, PTA will determine the provisional Winning Bidders, the frequencies they will be assigned, and the initial payment calendar. Each bidder will be individually informed of their own auction outcome. Provisional Winning Bidders should not disclose publicly any information about their results until this official announcement is made.

7.1.2 The published provisional auction results may include the following information:

- a) Identity of each provisional Winning Bidder;
- b) For each provisional Winning Bidder:
 - i) The amount of spectrum provisionally won in each frequency band;
 - ii) The specific frequencies won;
 - iii) The Total Spectrum Winning Price in US Dollars;
 - iv) The corresponding Initial Spectrum Fee payable in Pak Rupees; and
 - v) The Calendar for payment of the Initial Spectrum Fee.

7.1.3 PTA may, at its sole discretion provide further information, such as identifying the specific frequencies won by each bidder, and a breakdown of fees by band.

7.2. Calculation and Collection of Fees

For each provisional Winning Bidder, PTA will calculate the Total Spectrum Winning Price in US Dollars and accordingly determine the Initial Spectrum Fee payable in Pak Rupees as per procedure explained in Section 7.2.2 along with corresponding due dates.

7.2.1. Initial Spectrum Fee

The spectrum fee shall be set in the license in equivalent Pak Rupees. For USD-PKR conversion, National Bank of Pakistan (NBP) TT selling rate prevailing on the date preceding the date of Spectrum Auction shall be locked/used.

7.2.2. Payment of Initial Spectrum Fee

a) Payment terms shall be as under:

i) Moratorium Period

A one (01) year moratorium shall be allowed from the date of issuance of license, during which no payment shall be payable nor markup shall accrue during this period.

ii) Payment Options (Post-Moratorium)

Upon expiry of the one-year moratorium, the licensee shall opt for either of the following payment options:

(1) Full Upfront Payment

100% spectrum fee shall be payable latest by 1st anniversary of the license issuance date.

OR

(2) Deferred Payment Option

(a) Minimum fifty percent (50%) shall be payable latest by 1st anniversary of the license issuance date;

(b) The remaining fifty percent (50%) shall be payable in five (05) equal annual instalments, from 2nd anniversary of the license issuance date;

(c) The deferred amount shall carry a cumulative mark-up at the rate of one-year KIBOR Offer rate + 3% per annum, where KIBOR shall mean the one-year Karachi Interbank Offered Rate as published by the State Bank of Pakistan; and

(d) For calculation of markup for the 1st instalment, the one-year KIBOR prevailing at the 1st anniversary of license issuance date shall be used. For subsequent years, the one-year KIBOR prevailing on the payment date of previous instalment shall be used.

(3) Moreover, if auction winner intends to pay the remaining balance liability or part thereof on account of Initial Spectrum Fee at any time before the end of 5 years, it would be acceptable and without any pre-payment penalties.

However, mark-up at the rate KIBOR + 3% shall be payable on the balance amount till the date the final payment is made.

- b) In case of delay in any payment to PTA, Late Payment Additional Fee at the rate 2% per month or part thereof from the due date until the date of payment shall apply;
- c) If any payment of the ISF, including any instalment, becomes overdue, PTA may initiate legal action in accordance with applicable legal framework;
- d) In case the KIBOR rate or NBP exchange rate issuance is discontinued by the issuing authorities/organisations during payment tenor under the License, rates announced/advised by Ministry of Finance, Pakistan or State Bank of Pakistan in replacement of said rate shall be used with effect from the date of its discontinuance.

7.3. Performance Bank Guarantee

- 7.3.1 As a guarantee for the performance of network roll-out obligations, the Winning Bidder shall submit four (04) separate Performance Bank Guarantees (PBGs), one for each rollout phase, in the form of unconditional, irrevocable, and continuing Bank Guarantees. Each PBG shall be issued by a local bank in Pakistan having a minimum credit rating of AA+ and above, to the satisfaction of the Authority.
- 7.3.2 The said PBGs shall be in Pakistan Rupees for an aggregate amount equivalent to USD 15,000,000 (US Dollar Fifteen Million). Each PBG shall be in Pakistan Rupees being equivalent of USD 3,750,000 (US Dollar Three Million Seven Hundred Fifty Thousand) and to be submitted prior to the signing of the License or as per the schedule prescribed by the Authority. In this regard, for USD-PKR conversion, the National Bank of Pakistan (NBP) TT selling rate prevailing on the date preceding the date of Spectrum Auction shall be used.
- 7.3.3 Each PBG shall be released upon the successful completion of the respective rollout obligations. The PBG for each phase shall remain valid until six (06) months after completion of the respective rollout obligation.
- 7.3.4 Any incomplete rollout obligations of a given phase shall be carried forward and completed by the Licensee in the subsequent rollout, without affecting the Authority's right to encash the proportionate PBG for the phase in which the shortfall occurred.
- 7.3.5 It is the Winning Bidder's responsibility to ensure that all bank guarantees are in place prior to date fixed by PTA for license issuance. If a bidder fails to furnish performance bank guarantees for the rollout obligations, they will be in default. Pre deposit of the defaulting bidder shall be forfeited along with all other amounts paid to that date to PTA and may be subject to further penalties imposed by PTA, such as but not limited to financial penalties

and exclusion from future award processes. Defaulting bidders shall also forfeit their right to be allocated any of the spectrum provisionally awarded to them.

- 7.3.6 In case the Winning Bidder is an existing Cellular Mobile Operator and that has Performance Bank Guarantees furnished against ongoing roll-out obligations under existing/ previous Licenses, such Performance Bank Guarantees shall be returned/released by PTA within thirty (30) days of the signing of the License.

7.4. Grant of License(s)

- 7.4.1 Following the announcement of the Auction results / Winning Bidders, PTA will endeavour to grant License(s) to Winning Bidders as expeditiously as possible. Grant of the License(s) marks the formal end of the NGMS/5G Auction process.
- 7.4.2 Following the Grant of License(s), it is the responsibility of licensee to ensure they meet the required milestones for fee payments, rollout obligations and quality of service commitments etc.

8. Legal Notice

- 8.1 This Information Memorandum ("IM") is for information purposes only. It does not form part of any contract, whether explicit or implied. The terms and conditions set out in any License awarded pursuant to NGMS/5G Auction will prevail if there is a discrepancy between the License and this IM. Applicants are advised to seek their own expert advice on whether or not to participate in the award process and on any other matters concerning financial, legal, technical or other implications of the award process and associated policies.
- 8.2 PTA, its employees do not warrant the accuracy of the information herein, and PTA reserves the right to update or amend or modify or add or omit any information in this IM before the auction commences. Any such change, alteration, modification, amendment, addition, omission, supplemental or replacement or any deletion will be communicated to the prospective Applicants or qualified bidders via PTA website or any other mode of communication and shall become an integral part of the IM and the auction process.
- 8.3 PTA reserves the right, in its sole discretion, to take any action, including amendment of this IM, which it considers necessary to ensure that the award process is carried out in a fair, open and transparent manner, in accordance with law and in a manner that discourages and, to the extent permitted under the law, penalises any actual or attempted collusion or behaviour aimed at lessening competition in the NGMS/5G Auction or the downstream market for mobile services in Pakistan.
- 8.4 PTA reserves the right to add, modify, amend, supplement, cancel, annul or replace any or all of the auction process at any stage without incurring any liability to the affected bidders or any obligations thereunder. PTA further reserves the right to modify or terminate the auction process at any time at its sole discretion. If the Auction is terminated without any spectrum being awarded to an Applicants, the Applicant's Bank Guarantee would be returned within thirty (30) days, less any amount that is forfeit, without PTA or GoP bearing any liability
- 8.5 This IM and any License or spectrum issued pursuant to the auction process described in the IM shall be exclusively subject to, and interpreted in accordance with, the provisions of the Pakistan Telecommunication (Re-Organization) Act, 1996, and the Rules and Regulations and Policies of GoP issued thereunder.
- 8.6 Any dispute, controversy or claim arising out of, or in connection with, this IM, or the breach, termination or invalidity thereof, shall be settled by PTA and its decision shall be final and binding.

- 8.7 The NGMS/5G Auction process, the accompanying documents, and all correspondence relating to the auction process announced in this IM shall be communicated and submitted in English language.
- 8.8 No suit, prosecution or any other legal proceedings shall lie against PTA or any Member or employee or consultant or contractor of PTA or any other Government functionary in respect of anything done or intended to be done in good faith in connection with this IM.

9. Glossary

In this section, terms used in this document are defined. For the convenience of the reader, “general terms” and “auction terms” are separated.

9.1. General Terms

9.1.1 Terms used in this document shall have the following meanings:

3GPP	3GPP, or the Third Generation Partnership Project, is a global collaboration of telecommunications organizations that develops technical specifications for mobile network technologies like 4G (LTE) and 5G;
Applicant	A company that submits an Application in Stage 1. From Stage 2 onwards, a company that is still active in the process;
Bidder	An Applicant that is active in the auction (i.e. eligible to bid in Stages 3 and 4 of the 5G award process). See also Qualified bidder;
CMO	Cellular Mobile Operator (see MNO).;
EAS	Electronic auction system, which will be used to run the auction in Stages 2 and 3;
FAB	Frequency Allocation Board;
FDD	Frequency Division Duplex (i.e. paired spectrum);
FTTS	Fibre-to-the-site;
GoP	Federal Government of Pakistan;
IM	Information Memorandum;
IMT	International Mobile Telecommunications. This is the International Telecommunication Union (ITU)'s generic term for global broadband mobile systems and their standards, encompassing 3G (IMT-2000), 4G (IMT-Advanced), and 5G (IMT-2020);
ITU	International Telecommunication Union;
License	The License awarded to a Cellular Mobile Operator or New Entrant in the NGMS/5G Auction;
Licensee	A company that is granted a License;

MNO	Mobile Network Operator. The existing operators are Jazz, Zong and the new entity to be formed from the merger of Telenor and Ufone termed as MergeCo in this IM;
OOB	Out-of-block (in context of emission limits on spectrum blocks);
PTA	Pakistan Telecommunications Authority;
Qualified Bidder	An Applicant that was qualified to participate in the auction as per check list (and is not subsequently removed);
TDD	Time Division Duplex (i.e. unpaired spectrum); and
Winning Bidder	An Applicant that was awarded spectrum in the Allocation Stage (and is not subsequently disqualified).

9.2. Auction Terms

9.2.1 Terms used in this document relating to the Allocation Stage and/or the Assignment Stage shall have the following meanings:

Activity	Each bidder in each round has a bid Activity, expressed in points. This Activity is equal to the sum of the points associated with its Bid Quantities;
Allocation Stage	The Allocation Stage determines the amount of spectrum (generic lots) awarded to each bidder, as well as the price for each generic lot;
Bid	A Bid in a category consists of a Bid Quantity and a Bid Price;
Bid Price	Each bid has an associated Bid Price, which is the maximum amount the bidder will pay for the Bid Quantity in each category;
Bid Processing	After each round, Bid Processing determines Processed Demand and Processed Price, across categories;
Category	The generic lots are organised into Categories, one for each band;
Clock Price	For each round, the maximum Bid Price in a category;
EAS	Electronic Auction System – the secure online platform that will be used to run the Main Auction and the Assignment Rounds;
Eligibility	Each bidder in each round has an Eligibility, expressed in points. This Eligibility is equal to the sum of the points associated with its Processed Quantities at the end of the prior round;

Excess Demand	The difference between Processed Demand (for all bidders) and Supply, in a category;
Extension Right	Each bidder has an option to extend the bidding phase of 3 rounds;
Lot	The available spectrum is divided into generic lots;
New Entrant	Any entity that does not hold a Cellular Mobile/NGMS License for the provision of mobile cellular/ NGMS services in Pakistan. The applicants having direct or indirect affiliation with a Cellular Mobile Operator, or being its subsidiary, or having a joint controlling interest will not be considered as New Entrant.
Points	Each lot within a category has an associated number of Eligibility Points, that are used for calculating Eligibility and Activity;
Price Points	Each Bid Price has an associated Price Point, which is a percentage number between 0% and 100%;
Processed Demand	After bid processing, the number of lots a bidder is allocated in a category;
Processed Price	The Price for a Lot Category determined during bid processing, which will become the Opening Price for the next round;
Reserve Price	Reserve price is the base price announced by GoP vide Policy Directive dated 6 th Jan 2026. This is minimum bid price for each lot. The clock price in round 1 is the Reserve Price;
Spectrum Cap	A bidder's demand in MHz cannot exceed any spectrum caps;
Site	An outdoor installation having a mast height or an overall height above ground level of not less than ten (10) meters, established for the provision of cellular mobile services.
Supply	The number of lots available in each category; and
Date of Spectrum Auction	The date of auction is the date when auction is closed i.e assignment stage.

Appendix A. Application Form

In this appendix, format for applications to participate in the NGMS/5G Auction is described. This is called the "Application Form".

No template is provided for the Application Form. Rather, bidders should assemble ALL information required in the checklist in Table 7 in a single document. Applicants should provide information in the order presented in the checklist, but they may reference and append supporting documents.

The documents listed in Table 7 are part of the Application Form and must be provided in support of the application.

Table 7: Checklist Application

Document	Provided (Yes/No)	If No, please explain.
1 – Applicant information		
a) The name of the Applicant (company name);		
b) National Income Tax Number ;		
c) Information about the company’s ownership and controlling agreements, including disclosure of any individual shareholdings greater than 5%; and		
d) Completed checklist (this table).		
2 – Proof of pre-bid deposit		
a) The proof of submission of pre-bid deposit in PTA’s prescribed account submitted alongside the application.		
3 – Names and contact information for Authorized Representatives and Contacts (see Appendix C)		
a) Authorized Representative;		
b) Up to two Back-up Authorized Representatives (optional);		
c) Authorized Contact; and		
d) Up to two Back-up Authorized Contacts (optional).		
4 – Qualifications, experience and access to finance		
a) Brief Description of Telecommunications Qualifications and Experience of the Applicant, its key management personnel and its shareholders;		
b) Brief Description of how the Applicant intends to utilize any spectrum awarded in the NGMS/5G Auction;		

Document	Provided (Yes/No)	If No, please explain.
c) Proposed source of funds in the form of own funds, equity or debt to be used to pay for licenses won in the NGMS/5G Auction; and		
d) Proposed source of funds in the form of own funds, equity or debt to be used to invest in a network that will utilise any spectrum acquired.		
5 - Certificate on original letterhead from the Group /Joint venture/Consortium members that they are the authorized participants for the NGMS/5G Auction in Pakistan through the Applicant.		
6 - Company Resolution (using format provided in Appendix C)		
7 - Resolution of the Board of Directors of the Applicant authorizing: a) The Authorized Representative to sign the Application and take responsibility for its submission; and b) The Authorized Representative and any Back-up Authorized Representatives to fully represent the applicant by virtue of the law for the duration of the NGMS/5G Auction process.		
8 – A signed statement on word of honour by the Authorized Representative on behalf of the Applicant warranting that:		
a) The Company or its Directors have never been declared insolvent by a court of law or government organization;		
b) The Directors of the company have never been convicted by a court of law for major offences or unethical/ immoral turpitude (other than minor offences);		
c) Neither the applicant Company nor its group/consortium members are defaulter(s) of PTA and to other PTA licensees/transactions;		
d) They are not aware of any other Applicant that has a common ownership or controlling agreement with another Applicant;		
e) They are not aware of any insiders associated with their participation in the NGMS/5G Auction process that are also insiders to another Applicant;		

Document	Provided (Yes/No)	If No, please explain.
f) They have not knowingly and will not knowingly commission services from any outside advisers who are also advising another Applicants;		
g) They will not engage in collusion;		
h) They will not share confidential information with another Applicant;		
i) They will participate in and not unreasonably obstruct any future replanning exercises involving spectrum suitable to cellular mobile use, including but not limited to spectrum awarded in the NGMS/5G Auction and prior allocation processes, if such exercises are required by PTA or other GoP entity on spectrum management grounds, and it is understood that this may require a shift in frequency position within a frequency band;		
j) They have taken reasonable steps to ensure that they are in compliance with these warranties; and		
k) They will immediately inform PTA if they become aware of any change in circumstances that impacts these warranties in any of the five stages of the NGMS/5G Auction process.		
9 - Special Power of Attorney, one each for the Authorized Representative and any Back-up Authorized Representatives (using format provided in Appendix D)		
10 - Other company documents – please include a cover page introducing each document		
a) Certificate of Incorporation/registration; and		
b) Memorandum and Articles of Association.		

Notes for Applicants: When completing the checklist, please checkmark with yes if provided or explain why a document is not provided. Please provide a cover letter along with each requested document including title and number of pages.

Appendix B. Authorized Representatives and Contacts

Each applicant must provide the following contact information for their Authorized Representatives and Contacts:

[FIRST, LAST NAME]

[PERMANENT ADDRESS]

[LANDLINE TELEPHONE]

[CELL PHONE NUMBER]

[EMAIL ADDRESS]

This information must be provided for the following persons:

AUTHORIZED REPRESENTATIVE (one person)

BACKUP AUTHORIZED REPRESENTATIVE (up to two persons)

AUTHORIZED CONTACT (one person)

BACKUP AUTHORIZED CONTACT (up to two persons)

An Authorized Representative may also be an Authorized Contact. Only Authorized Representatives (including Back-Ups) require a power of attorney.

Appendix C. Company Resolution

[Letterhead of the Company]

I, _____, Company Secretary of [HERE GIVE FULL NAME AND ADDRESS OF THE APPLICANT ENTITY] (the "Company"), do hereby certify that the following is a true and correct copy of a Resolution duly adopted at a meeting of the Board of Directors of the Company duly convened and held on _____, and at this resolution has not been modified, rescinded or revoked, and is at present in full force and effect:

RESOLVED THAT the Company be and is hereby authorized to apply for the award of [here describe the nature of the Spectrum being applied for], ("the Spectrum") and to comply with all requirements of its application process and the terms of the License, if any, granted as a consequence;

FURTHER RESOLVED THAT _____, bearing CNIC/Passport No _____ resident of _____ [here give designation of the appointee] be and is hereby appointed as an Authorized Representative of the Company (the "Authorized Representative"), for and on its behalf, to execute all documents and take all actions as may be required, necessary or incidental in connection with submission and grant of the application of the License, including submission of the Power of Attorney in the form and manner prescribed at Appendix D of the Information Memorandum issued by the Pakistan Telecommunication Authority for which all necessary instructions and information has been provided to him;

FURTHER RESOLVED THAT _____, bearing CNIC/Passport No _____, director/secretary of the Company be and is hereby authorized on behalf of the Company to execute a Power of Attorney in favour of the Authorized Representative(s) on such terms as may be deemed expedient and in the form prescribed by the Pakistan Telecommunication Authority.

Certified to be a true copy:

Company Secretary

Company Seal and

Stamp

Appendix D. Power of Attorney

POWER OF ATTORNEY

[To be submitted on a stamp paper]

KNOW ALL PERSONS BY THESE PRESENTS THAT WE _____, ("Company Name") Incorporated in _____ (country) having our registered office at _____ (hereinafter called the "Applicant") on approval by the [Board of Directors] and after meeting all necessary requirements for appointing a Special Attorney do hereby nominate, constitute, appoint and execute _____ [here give name, parentage identity document number and address of the Special Attorney] (hereinafter to be called as "Attorney") to be and to act as our lawful attorney, for us, in our name and on our behalf to exercise any and all of the powers herein contained and ancillary thereto, that is to say:

- a) to sign, execute and/or authenticate all applications or other correspondence, statements and documents required to be submitted to Pakistan Telecommunication Authority (hereinafter the "Authority") and to act for and on our behalf in all matters including negotiating the terms and conditions of the award and signing any and all documents relating to award of the spectrum for provision of NGMS(5G) Services in Pakistan;
- b) to fulfil all the requirements and formalities as may be required to be fulfilled for the award of Spectrum for provision of NGMS(5G) Services and grant of the License applied for and on behalf of the Applicant in this regard;
- c) to attend all meetings with and hearings before the Authority or any other governmental officer or entity and to provide any and all necessary documents and material information or assistance as may be required by the Authority for its satisfaction to issue the License for NGMS(5G) Services applied for by the Applicant;
- d) to execute any and all such documents and undertake all such acts as may be necessary in order to comply with the directions, decisions and orders of the Authority relating to award of spectrum for NGMS(5G) Services and issuance of License applied for by the Applicant; and
- e) and generally to do any and all such acts as may be necessary or incidental for the award of spectrum for NGMS(5G) Services and grant of the License applied for by the Applicant.

We hereby agree and undertake to bind ourselves irrevocably to all commitments made, acts done, agreements made and arrangements entered into by the Attorney and hereby anticipatorily and irrevocably confirm and ratify all acts, deeds and things which the said Attorney shall lawfully do or cause to be done in express and implied exercise of any of the powers contained herein.

This Power of Attorney shall not be revoked without prior written notice reasonably in advance to the Authority and such revocation shall not invalidate any and all action taken by the Attorney before the revocation in exercise of the powers vested hereby. In witness whereof we have signed this power of attorney at this day _____ of _____, 20__.

EXECUTANT

Seal of the Company

WITNESSES:

1. _____

National ID/CNIC NO. _____

Passport Number (in case of foreign national). _____

2. _____

National ID/CNIC NO. _____

Passport Number (in case of foreign national). _____

Appendix E. Pre-Bid Deposit Form

Pre-bid Deposit Form - Spectrum Auction for Next Generation Mobile Services (NGMS)/5G in Pakistan 2026

Name of Applicant: _____

Pursuant to Spectrum Auction for Next Generation Mobile Services (NGMS)/5G in Pakistan 2026 "NGMS/5G Auction", following amount has been deposited as a pre-requisite to participate in the Auction process.

Applicant's Name	Date of Deposit	Currency of Deposit	Deposit's Reference Number	Pre-bid Deposit Amount	Proof of Payment Attached
					Yes/No

It is acknowledged and irrevocably committed that the pre-deposit money shall be subject to relevant terms and conditions of the Information Memorandum. It is further acknowledged that in case of return of the pre-deposit money, if applicable, the same shall be in Pak Rupees that was credited to PTA bank account at the time of deposit irrespective of the deposit currency.

Date

Name and Signature of
Authorized Representative

Note:

- a) Proof of Payment must be attached.
- b) Pre-bid Deposit shall be paid either in US Dollars or its equivalent in Pak Rupees to be converted at the National Bank of Pakistan (NBP) Telegraphic Transfer (TT) selling rate prevailing on the day preceding the date of payment.

Appendix F. License Template

Attached Separately

Appendix G. Performance Bank Guarantee (PBG)

Guarantor: [Name of local bank in Pakistan with credit rating of AA+ and above] (the "Guarantor"),
[Bank's address]

Beneficiary: Pakistan Telecommunication Authority (PTA), PTA Headquarters, Sector F-5/1
Islamabad, Pakistan, (the "Beneficiary")

Principal: Licensee Name _____, a company incorporated under the laws of
Pakistan with its registered offices at _____ (the "Principal").

Guarantee Amount: Rs xxxxxxxxxxxxxx (Pak Rupees xxxxxxxxxxx) (the "Guarantee Amount")

PBG Date: License Effective Date

Licence: The Licence granted to the Principal dated _____.

Rollout Obligations: The roll out obligations in Appendix-1 of the License, being rollout obligations
to be fulfilled in Phase [xxxx] (the "Phase xxxx Rollout Obligations")

Expiry Date: [Note: Expiry date shall be set in accordance with Roll out Obligations, in each case with
an additional grace period of 6 months, at the counters of the Guarantor]

WHEREAS:

a) The Principal has committed to furnish an unconditional, irrevocable and continuing Performance
Bond in the form of Bank Guarantee (the "Guarantee") of (Name of Bank)_____ for
the Guarantee Amount as security for compliance with the Rollout Obligations; and

b) The Guarantor has executed this unconditional, without recourse to the Beneficiary, irrevocable
and continuing Performance Bond in the shape of Bank Guarantee at the request of the Principal for
the performance of Principal's Rollout Obligations.

NOW THEREFORE the parties agree as follows:

a) Subject to the terms of this Guarantee, the Guarantor hereby un-conditionally, irrevocably and
continuingly guarantee without recourse to the Beneficiary, i.e. PTA, as primary obligor and as a
guarantor of payment, the due, complete and punctual payment within 3 working days upon receipt
of written notice of claim from the Beneficiary (in the form attached hereto as Annex A);

b) The maximum aggregate liability of the Guarantor under or in connection with this Guarantee
shall be limited to the Guarantee Amount, together with interest thereon at the prevailing one (1)
month Karachi Interbank Offer Rate (KIBOR) from the date from which payment is due to the

Beneficiary until receipt of payment by the Beneficiary or collection thereof against the Principal and the Guarantor;

c) This Guarantee is un-conditional, irrevocable and continuing, and:

i.) the Principal shall be entitled to have a proportion of this Guarantee released on its request upon successful completion of the Phase [xxxx] Rollout Obligations met by the Principal/Licensee and duly approved by Beneficiary/PTA (in all other respects, this Guarantee remains in effect); and

ii.) the Principal shall be entitled to have this Guarantee returned on its request upon successful completion of all of the Rollout Obligations met by the Principal/Licensee and duly approved by Beneficiary/PTA.

d) In case any phased network Roll-out Obligation is not fulfilled, the Performance Bond against the defined network Roll-out Obligation not met shall be encashed by the Authority. This Performance Bond shall remain in force and valid until 6 months after the associated phase of the network Roll-out Obligation

e) If any payment by the Principal or any discharge given by the Beneficiary is avoided or reduced as a result of insolvency or any similar event:

i.) the liability of the Guarantor shall continue as if the payment, discharge, avoidance or reduction had not occurred; and

ii.) the Beneficiary shall be entitled to recover the value or payment from the Guarantor, as if the payment discharge, avoidance or reduction had not occurred.

f) Subject to clause c) above, this Guarantee is valid until the Expiry Date for the relevant Rollout Obligation, by which date notice of claims in respect of that Rollout Obligation, if any, must have been given to the Guarantor, and failing such notice of claim by close of business on the Expiry Date, this guarantee shall be null and void in respect of that Rollout Obligation.

g) Any claim or notice made or given by the Beneficiary to the Guarantor under this Guarantee shall be deemed to be sufficiently made and given if in writing in the form attached in Annex A and delivered at the counters of the Guarantor at the following address:

Bank Name: _____

Address: _____

h) This Guarantee shall be governed by and construed in accordance with the Uniform Customs and Practice for Documentary Credits, 2007 Revision, ICC Publication No. 600 (UCP) and/or Uniform Rules for Demand Guarantees, 2010 Revision, ICC Publication No.758 (URDG) and their updated versions, whichever is applicable, to the extent that such provisions are not inconsistent with this Guarantee and the laws of Pakistan, and engages us in accordance with the terms thereof. No recourse is

permissible upon the occurrence of events listed in Article 17 (UCP) or Article 26 (URDG), to any other branch, subsidiary or affiliate of(Bank Name).

For matters not covered by the Publication, the laws of Pakistan shall be applicable and the Guarantee related matters will be governed, accordingly. We hereby unconditionally and irrevocably understand and accept the exclusive jurisdiction of the Courts of Pakistan at Islamabad.

Notwithstanding anything contained herein above, the Guarantor's liability under this Guarantee is limited to the Guarantee Amount, together with interest thereon at the prevailing one (1) month Karachi Interbank Offer Rate (KIBOR) from the date the payment is due to the Beneficiary until receipt of payment by the Beneficiary and reasonable expenses not exceeding in the aggregate 2% of the Guarantee Amount incurred by the Beneficiary in collection thereof against the Principal and the Guarantor. Claims under this Guarantee will be payable and must be lodged and received (accompanied by the original instrument of Bank Guarantee) solely at the counters of [Bank's name] [Bank Address] on or before the Expiry Date for the relevant Rollout Obligation and will be payable solely by [Bank's name] at Islamabad, Pakistan. Except for any claims duly received at the Guarantor's counters in Islamabad before close of business on the Expiry Date for the relevant Rollout Obligation, the Guarantor shall stand discharged and released of all its obligations under this Guarantee in respect of that Rollout Obligation at close of business on the Expiry Date and shall not be liable for any claims lodged thereafter, notwithstanding that Beneficiary may have failed to return the original instrument of Bank Guarantee to the Guarantor duly cancelled at expiry hereof.

Bank Guarantee No. _____ duly issued on the _____ (PBG Date) for and on behalf of _____ (Licensee Name) as Guarantor.

By
Name (Bank's Representative):
Title: In the presence of:

Witnesses:

1- Name: _____
Address:
Occupation:
CNIC No.:

2- Name: _____
Address:
Occupation:
CNIC No.:

ANNEX-A

Beneficiary's Demand under Unconditional, Irrevocable & Continuing Bank Guarantee
No. _____

Issued by _____ (Bank Name) at Islamabad Branch

Drawn under _____ (Insert Bank Guarantee Number and Date)

To _____ (Name and Address of Issuing Bank)

The undersigned hereby demands that [name of issuing bank] _____ pay to the order of the undersigned (Beneficiary/PTA) before close of the 3rd business day after receipt of the notice a sum of Rs xxxxx (Pak Rupees xxxxx), together with interest thereon at the prevailing one (1) month Karachi Interbank Offer Rate (KIBOR) from the date the payment is due to the Beneficiary until receipt of payment by the Beneficiary and reasonable expenses not exceeding in the aggregate 2% of the Guarantee Amount incurred by the Beneficiary in collection thereof against the Principal and the Guarantor. The Bank Guarantee / Letter of credit is enclosed for endorsement by _____ (Bank Name) at Islamabad Branch of the amount drawn for cancellation/encashment.

Dated: -----

Pakistan Telecommunication Authority

Chairman _____



PAKISTAN TELECOMMUNICATION AUTHORITY
HEADQUARTERS F-5/1 ISLAMABAD, PAKISTAN

License No. -----

-----, 2026

**MOBILE CELLULAR LICENSE ISSUED UNDER SECTION 21 OF THE PAKISTAN
TELECOMMUNICATION (RE-ORGANIZATION) ACT, 1996**

The Pakistan Telecommunication Authority (the "Authority") hereby grants a non-exclusive License No. _____ dated xxxx 2026 to ----- (Company name) (the "Licensee") on technology neutral basis for the establishment, maintenance and operation of the Licensed System to provide the Licensed Services in Pakistan (excluding Azad Jammu & Kashmir and Gilgit-Baltistan) subject to the terms and conditions contained herein.

Director General (Wireless Licensing)
On behalf of
Pakistan Telecommunication Authority

On behalf of
Licensee

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PART 1: GRANT OF LICENSE

1.1 SCOPE OF THE LICENSE

- 1.1.1. This License authorizes the Licensee to provide the Licensed Services in Pakistan [excluding Azad Jammu and Kashmir (AJ&K) and Gilgit-Baltistan (GB)], and to establish, maintain and operate the Licensed System.
- 1.1.2. The Licensee shall provide the following Mandatory Services throughout Pakistan:
 - 1.1.2.1 Mobile Communication Service including:
 - 1.1.2.1.1 Access to emergency services;
 - 1.1.2.1.2 Access to operator assistance services;
 - 1.1.2.1.3 Access to national and international long-distance services through LDI operators; and
 - 1.1.2.1.4 Such other Telecommunication Services as the Authority may, by Regulation, require.
- 1.1.3. The Licensee may provide optional services incidental to Mobile Communication Service.
- 1.1.4. The License does not authorize the following:
 - 1.1.4.1 The provision of Mobile Communication Services in AJ&K and GB;
 - 1.1.4.2 The interconnection of the Licensed System to the Telecommunication System of a service provider that provides telecommunication services outside Pakistan or in AJ&K and GB;
 - 1.1.4.3 Such other activities or Telecommunication Services as the Authority may by Regulations, prohibit.
- 1.1.5. The Licensee shall not provide any Telecommunication Service or install, maintain or operate any Telecommunication System that is not authorized in this License, except pursuant to a separate License or other proper authorization from the Authority.
- 1.1.6. The Licensee shall not authorize or facilitate the Terminal Equipment used by a fixed line customer in connection with the Limited Mobility Communication Service, to be authenticated or used with the Mobile Communication System.
- 1.1.7. The Licensee shall provide access to national and international Long-Distance Public Voice Telephone Services only through the interconnection of the Licensed System with the Telecommunication System of another Operator duly licensed by the Authority to provide national and international long-distance services.
- 1.1.8. The Licensee shall notify the Authority at the time that the Licensee wishes to begin to offer a new category of Licensed Services not previously offered by the Licensee. In its notice, the Licensee shall describe the new category of Licensed Services and the expected date that they will begin to be offered commercially by

the Licensee. The Authority after due consideration may issue necessary approval.

- 1.1.9. Upon being notified by the Authority that an Operator's License is suspended or terminated, the Licensee shall as promptly as practical in the circumstances, disconnect the Licensed System from the Telecommunication System of that Operator, and discontinue using the Telecommunication Service of that Operator, until such time the Authority restores or renews such License.

1.2 EFFECTIVE DATE AND TERM OF THE LICENSE

- 1.2.1. This License shall come into force on the Effective Date and shall be valid for a term of 15 (fifteen) years.

- 1.2.2. If the Licensee wishes to renew the term of the License at the expiration of the initial or any renewal term, it shall submit to the Authority a written request for renewal at least 30 months prior to the expiration of the current term.

- 1.2.3. Within six (6) months after the receipt of the Licensee's request pursuant to condition 1.2.2, the Authority shall either:

- 1.2.3.1 renew the License on such terms and conditions as are consistent with the applicable policy of the Federal Government at that time, to come into effect at the conclusion of the initial or renewed term as the case may be; or

- 1.2.3.2 give written notice to the Licensee stating that the Authority may not renew the License and provide reasons thereof. The reasons may include the Licensee's repeated, grave or continuing violations of the terms and conditions of this License, the Act, Rules or Regulations; during the term of this License. The Licensee shall be given 60 days to make written representations in response to the Authority's written notice. Within 30 days after the conclusion of such 60 days period, the Authority shall hold a hearing at which the Licensee may make representations in response to the Authority's written notice. The Licensee may, as part of its representation, indicate the further License conditions, it is prepared to accept to reduce the likelihood of continued or further violations of the terms and conditions of this License, the Act, Rules or Regulations. Following such hearing, the Authority shall, within 15 days, give its determination either:

- 1.2.3.2.1 the Authority has determined not to renew the License at the expiration of the initial term or renewed term, and provide its reasons for making such a determination, or

- 1.2.3.2.2 to renew the License on such terms and conditions as are consistent with the applicable policy at the time of renewal, to come into effect at the conclusion of the initial or renewed term, and including such additional terms as the Authority considers appropriate, to reduce the likelihood of continued or further violations of the terms and conditions of this License, the Act, Rules or Regulations.

PART 2: RIGHTS OF THE LICENSEE

2.1 NUMBERS AND SHORT CODES

- 2.1.1 The Licensee has the right to request mobile numbers and non-geographic numbers, as well as short codes, in accordance with the National Numbering Plan developed by the Authority, for use in the provision of the Licensed Services.
- 2.1.2 The Licensee shall allocate individual mobile numbers to customers from the blocks allocated to it by the Authority and shall maintain suitable records of its utilisation of numbering capacity, subject to the following:
 - 2.1.2.1 The blocks of numbers and short codes allocated to the Licensee and the individual numbers allocated by the Licensee to its customers are a national resource; and
 - 2.1.2.2 Allocation of a mobile number does not confer ownership of the number by the customer. However, an allocation conveys an ongoing right of use and an expectation of at least a three-month notice period should be necessary to withdraw or to change allocated numbers.

2.2 SIGNIFICANT MARKET POWER (SMP)

- 2.2.1 If the Authority determines that a Licensee possesses SMP in a relevant market, the Licensee shall comply with orders/decisions of the Authority that are intended to prohibit abuse of its dominant position through anticompetitive conduct or to promote competition in respect of that relevant market or markets ancillary thereto, including without limitation orders to produce a Reference Interconnection Offer (RIO) detailing the services and tariff they provide to other licensed operators.

2.3 MOBILE NUMBER PORTABILITY

- 2.3.1 The Licensee shall implement Mobile Number Portability (MNP) according to the regulations/ guidelines issued by the Authority from time to time.

2.4 SELF PROVISIONING

- 2.4.1 The Licensee will have the right to provide its own infrastructure:
 - 2.4.1.1 Within a Region and to also provide their own interconnection circuits to other Operators;
 - 2.4.1.2 Between Regions in the event that all LDI operators are unable to provide a circuit within three months from request by the Licensee; or
 - 2.4.1.3 In the event that quality of service falls below international standards for inter-Regional circuits as determined by the Authority.

2.5 RIGHT OF WAY

- 2.5.1 The licensee will have the right to contract for the “Right of Way” (RoW) to construct its network, subject to conditions laid down by concerned agencies in accordance with applicable statutory provision(s) of the Act, Rules or applicable policy.

2.6 INFRASTRUCTURE SHARING

- 2.6.1 The Licensee is required to share its existing and future infrastructure with other Operators, on request by any other Operator. As a minimum, the infrastructure to be shared shall be site sharing and mast sharing. Licensees may enter into commercial arrangements with each other for active sharing as per the applicable framework. If no such agreement can be reached after negotiation in good faith by the Licensee and the Operator, then the parties will resolve the matter as per applicable framework.
- 2.6.2 Licensees may enter into commercial arrangement with each other for Spectrum Sharing and Trading, however, such arrangement shall not take effect until it is approved by the Authority as per the framework developed under the applicable Policy.

2.7 LOCAL MANUFACTURING, ASSEMBLY, TRANSFER OF TECHNOLOGY AND RESEARCH AND INNOVATION

- 2.7.1 The Licensee shall encourage and facilitate local manufacturing, assembling and development of telecom equipment, terminal devices, applications, transfer of technology and Research and Innovation in Pakistan, subject to any regulations, directives of the Authority or any applicable Policy.

2.8 NATIONAL ROAMING

- 2.8.1 The Licensee is encouraged to negotiate a commercial arrangement with one or more Operators for national roaming so that the Licensee can provide seamless Voice, Data and other services, if any. If no such agreement can be reached after negotiation in good faith by the Licensee and the Operator, then the parties will resolve the matter as per the applicable framework.

2.9 INTERNATIONAL ROAMING

- 2.9.1 The Licensee shall use its best efforts to enter into the necessary agreements with foreign operators in order to enable and provide international roaming to its subscribers. The Licensee must follow the Authority's guidelines/directions on international roaming which may be issued from time to time.

2.10 MOBILE VIRTUAL NETWORK OPERATOR (MVNO)

- 2.10.1 The Licensee is encouraged to support MVNO Services, as required under the applicable policy framework.

PART 3: OBLIGATIONS OF THE LICENSEE

3.1 COMPLIANCE WITH LAW

- 3.1.1 This License is subject to the terms and conditions contained herein and to the Act, Rules and Regulations. In the event of any conflict or inconsistency between the provisions of this License, and the provisions of the Act, Rules or Regulations, the provisions of the Act, Rules and Regulations shall prevail.
- 3.1.2 The Licensee shall establish, maintain and operate its Licensed System, and shall provide the Licensed Services, in compliance with the laws of Pakistan. The Licensee shall at all times co-operate with the Authority and its authorized

representatives in the exercise of the functions assigned to the Authority under the Act, Rules and Regulations. The Licensee shall comply with all orders, determinations, directives and decisions of the Authority.

- 3.1.3 Details of all foreign directors of the Licensee's company along with the foreign nationals deployed for installation, operation and maintenance of the Licensed System must be communicated to the Authority and all other concerned quarters.

3.2 NETWORK ROLL-OUT

- 3.2.1 From the date of signing of this License, the Licensee shall provide the Licensed Services, in accordance with the obligations and timelines given in Appendix-1 A1 (Appendix-1* A1 for New Entrant Only).

3.3 PERFORMANCE BOND

- 3.3.1 The Licensee shall submit the Performance Bond in accordance with Appendix-1 A2 (Appendix-1* A2 for New Entrant Only).

3.4 ACCESS TO EMERGENCY SERVICES

- 3.4.1 The Licensee shall provide its customers with access to government emergency services, including automatic connections to local police, fire and ambulance assistance, by means of a simple telephone number with operator standby assistance available in case of failure of Licensee's automated systems. The Licensee shall comply with other requirements imposed by the Authority from time to time in relation to emergency services.

3.5 ALTERATION OF NETWORK

- 3.5.1 The Licensee shall, within such reasonable time and in such manner as may be directed by the Authority, and at its own expense, alter the course, depth, position or mode of attachment of any apparatus forming part of its Licensed System which may cause hazard to human life, community, or is deemed against the public interest in any way. All the Telecommunication System of the Licensee must be in the knowledge of the Authority including but not limited to Core and Access network.

PART 4: FEES AND OTHER CHARGES

4.1 PAYMENT OF FEES

- 4.1.1 The Licensee shall pay the Initial Spectrum Fee (ISF) amounting to **Rs xxxx (Pak Rupees xxxxx)** to the Authority.

- 4.1.1.1 The Licensee may opt either of the following options for payment of ISF:

100% payment of the ISF amount given in clause 4.1.1 above, as a onetime upfront payment latest by first anniversary of License issuance date;

OR

Minimum 50% payment of the ISF amount given in clause 4.1.1 above, latest by first anniversary of License issuance date and the remaining 50% of the ISF shall be payable in five (5) years in five (5) equal annual instalments starting from second anniversary of License issuance date

with cumulative mark-up calculated on the outstanding amount at the rate of one-year KIBOR Offer rate + 3%, for the period from the first anniversary date of the License to the payment date;

Provided that ISF shall not be payable during first year of issuance of the License nor markup shall accrue during this period.

Additionally, the Licensee may pay the remaining balance of the ISF or part thereof at any time before the end of 5 years of the payment terms, without any prepayment penalties. However, the cumulative markup calculated at KIBOR + 3% shall be payable on the balance amount for the period from the first anniversary of the License issuance date or payment date of last instalment, whichever is later, to the payment date.

In case the KIBOR rate or NBP exchange rate issuance is discontinued by the issuing authorities/organisations during payment tenor under the License, rates announced/advised by Ministry of Finance, Pakistan or State Bank of Pakistan in replacement of said rate shall be used with effect from the date of its discontinuance.

- 4.1.1.2 If any payment of the ISF, including any instalment, becomes overdue, the Authority may serve upon the Licensee a show cause notice stating the default and seeking explanation, allowing it not less than 7 days, as to why its License shall not be suspended or revoked. On considering the Licensee's explanation, the Authority may suspend or revoke the License as deemed appropriate. The Authority and the Licensee have agreed to this term in the light of the spirit of Section 28 of the Contract Act, 1872 and despite Section 23 of the Act;
- 4.1.1.3 This payment being the Initial Spectrum Fee will not be excluded from the gross revenue for the purpose of calculation of Annual License Fee, Universal Service Fund Contribution and Annual Research and Development Fund Contribution; and
- 4.1.1.4 Calculation of mark-up for the 1st instalment, the one year KIBOR rate prevailing at the first anniversary date of the License shall be used and for subsequent years the one year KIBOR rate prevailing on the payment date of previous instalment shall be used.
- 4.1.2 The Licensee shall pay the following annual regulatory fees, contributions and charges:
 - 4.1.2.1 Annual License Fee ("ALF") to the Authority in an amount equivalent to 0.5% of the Licensee's Annual Gross Revenue from Licensed Services for the relevant Financial Year, minus inter-operator costs and related PTA/FAB mandated payments.
 - 4.1.2.2 Universal Service Fund Contribution ("USF"), an amount equivalent to 1.5% of the Licensee's Annual Gross Revenue from Licensed Services for the relevant Financial Year, minus inter-operator costs and related PTA/FAB mandated payments.
 - 4.1.2.3 Annual Research and Development Fund Contribution ("R&D"), an amount equivalent to 0.5% of the Licensee's Gross Revenue from

Licensed Services for the relevant Financial Year, minus inter-operator costs and related PTA / FAB mandated payments.

- 4.1.2.4 Annual Spectrum Administrative Fee (“ASAF”) to the Authority in an amount calculated on the basis of the proportion of access spectrum assigned to the Licensee (under this License and any other licences) out of the total spectrum allocated to all Cellular Mobile Operators, to cover 75% of FAB’s total budgeted expenditure for the next financial year. The ASAF shall be applicable for the next financial year starting from 1st July every year and is payable in advance latest by 30th June every year. In case of change in spectrum assignment pursuant to spectrum auction or whatsoever reason, the proportionate basis shall accordingly be revised for calculation of ASAF purposes and accordingly billed; and

Any change, in payment mechanism of Annual Spectrum Administrative Fee (ASAF) will be carried out in light of applicable GoP Policy.

- 4.1.2.5 For each number allocated to the Licensee, annual number charges are payable in advance to the Authority by the due date on 30th June each year in accordance with the Numbering Allocation & Administration Regulations, 2018 including amendment made from time to time.

4.2 UNIVERSAL SERVICE FUND

- 4.2.1 The Licensee shall be eligible to apply for subsidy from the Universal Service Fund in order to cover rural and underserved areas as per Rules/Regulations, to be notified from time to time, for utilization of Universal Service Fund.

4.3 GENERAL CONDITIONS CONCERNING FEES AND CONTRIBUTIONS

- 4.3.1 The Licensee shall pay all annual regulatory fees, contributions and charges under condition 4.1.2, within 120 days of the end of the Financial Year to which such fees relate. However, the USF and R&D Contributions shall be deposited in designated accounts of MoIT&T. Provided that, the ASAF and annual number charges will become due on 1st of July each year and is to be paid before 30th June of each year.
- 4.3.2 In addition to any other remedies available to the Authority, late payment of any amounts due under this License, including the Initial Spectrum Fee and all regulatory fees, contributions and charges under condition 4.1.2, shall incur an additional fee calculated at the rate of 2% per month on the outstanding amount, for each month or part thereof from the due date until paid.
- 4.3.3 The Licensee shall annually submit to the Authority its annual audited financial statements, auditors’ certificate, other information in the form and manner as may be required, to the satisfaction of Authority, in support of its calculations of all regulatory fees, contributions and charges payable pursuant to condition 4 of this License.
- 4.3.4 This License shall be suspended / terminated in accordance with the law or Rules or Regulations, in case the Licensee fails to make the payment of any outstanding dues i.e. annual fees, contributions, charges, late payment additional fee, penalties etc. on due dates.

- 4.3.5 As regard calculation of ALF, USF and R&D, deduction on account of PTA/FAB mandated payments including contributions will be allowed only if these amounts have actually been paid and not on an accrual basis.
- 4.3.6 Payment of ILF/ISF, any amount paid/payable to foreign carriers, leased line charges, collection charges, Late Payment Additional Fee, penalties and other expenses imposed by the Authority, if any, shall not be deducted from the Gross Revenue for calculation of ALF, USF and R&D;
- 4.3.7 If the Licensee disputes any outstanding amounts due under this License as decided by the Authority, the Licensee shall either deposit 50% of the disputed amount in an escrow account opened by the Authority and on terms specified by the Authority or furnish unconditional and continuing bank guarantee, to the satisfaction of the Authority, in favor of the Authority equal to 50% of the disputed amount. Upon resolution of dispute, the amount deposited in escrow account shall accordingly be paid to the Authority or refunded to the Licensee along with bank profit accrued thereon during the period amount deposited in escrow account. In case of bank guarantee, the same shall accordingly be encashed or returned to the Licensee.
- Late Payment Additional Fee (LPAF) shall not apply to the extent of amount deposited in escrow account, however, in case of submission of Bank Guarantee, LPAF shall continue to apply on total outstanding dues from due date till date of payment. The applicability of deposit in Escrow account or furnishing of bank guarantee will be for any disputes arising after the date of signing of this License.
- 4.3.8 Where the Licensee is required under this License to make a payment to the Authority that is denominated in a currency other than Pakistan Rupees, the Licensee may make such payment in the equivalent amount of Pakistan Rupees. The rate of exchange for determining the equivalent amount of Pakistan Rupees shall be the TT selling rate of National Bank of Pakistan for the business day preceding the date of payment.

PART 5: RADIO FREQUENCY SPECTRUM

5.1 RADIO FREQUENCY SPECTRUM ASSIGNED TO THE LICENSEE

- 5.1.1 From the Effective Date, radio frequency spectrum described in Appendix - 2 is assigned to the Licensee pursuant to the terms and conditions of this License, including any terms and conditions provided in Appendix - 2.
- 5.1.2 The assignment of radio frequency spectrum to the Licensee pursuant to this License terminates upon the expiry of 15 (fifteen) years from the Effective Date, or the termination of this License (whichever is earlier). Such assignment of frequencies may be extended if this License is renewed for further terms as may be fixed by the Authority from time to time in accordance with the terms of this License.
- 5.1.3 Upon termination of the assignment to the Licensee of those radio frequencies listed in Appendix - 2, the Licensee shall cease using any apparatus or device that emits or receives any radio communication at those radio frequencies and shall cause its customers to discontinue using any such apparatus or device.
- 5.1.4 All the frequencies assigned to the Licensee shall remain public property and no ownership or other proprietary right is conveyed when an assignment is made and

such assignments give the Licensee the right to use these frequencies during the terms of the associated license only.

5.2 USE OF SPECTRUM

5.2.1 The Licensee shall comply with the following terms and conditions relating to radio frequency spectrum assigned to the Licensee:

5.2.1.1 The Licensee shall report to the Authority and to the Board such information as either of them may require concerning the assigned radio frequency spectrum and its use;

5.2.1.2 The Licensee shall only use the assigned radio frequency spectrum in its own operations, and it shall not lease, sub-license, allocate, assign or otherwise make available the use of the assigned radio frequency spectrum to another Operator; unless provided under condition 2.6.2 of this License;

5.2.1.3 The Authority shall have the right, exercisable at any time, to terminate any assignment to the Licensee of the radio frequency spectrum described in Appendix - 2, if the Authority determines that the Licensee is not complying with the requirements applicable to such radio frequency spectrum.

5.2.1.4 The Licensee shall use assigned radio frequency spectrum in compliance with all national, regional, intergovernmental and international arrangements in effect from time to time that are designed to reduce radio interference among service providers;

5.2.1.5 At all times, the Licensee shall implement all commercially reasonable measures to optimise the efficiency and effectiveness of its use of the radio frequency spectrum assigned to it; and

5.2.1.6 Unused frequency spectrum assigned to the Licensee may be withdrawn, if the Licensee fails to commence its Licensed Services within eighteen months of the Effective Date.

5.3 REASSIGNMENT OF FREQUENCIES

5.3.1 The Authority in consultation with Board may, in order to comply with international radio frequency spectrum coordination requirements, ITU assignments or reassignments, or generally in the course of regulating the radio frequency spectrum in the best national interest, reassign radio frequency spectrum assigned to the Licensee or require the Licensee to surrender its rights in respect of radio frequency spectrum assigned to it and which is not reasonably required for the continued operation of the Licensed Services. In such cases, the Licensee shall be entitled to consult with the Authority before any such action is taken and the Licensee shall be entitled to reasonable time and, where applicable, the assignment of appropriate alternative radio frequency spectrum, to permit the Licensee to carry on its business without unreasonable costs or disruptions.

5.3.2 If, pursuant to sub clause 5.3.1, the Authority in consultation with Board, requires that the Licensee change the radio frequency spectrum assigned to it, or surrender its rights in respect of radio frequency spectrum assigned to it, and the Authority re-assigns the radio frequency spectrum to another Operator within

three years after the date established by the Authority as the last date that the Licensee may use any apparatus or device that emits or receives any radio communication in the band of the radio frequency spectrum, the Authority shall require the other Operator to compensate the Licensee for its reasonable costs incurred as a result of such change or surrender, as determined by the Authority. The detailed procedure for re-farming will be provided at the appropriate time by the Board/Authority.

5.4 RADIO APPARATUS

- 5.4.1 The Licensee shall operate radio communication apparatus and devices in compliance with all requirements of the Authority and the Board pertaining to emissions, frequencies of operation, base station site clearance, technical characteristics, power and aerial characteristics.
- 5.4.2 The Licensee shall ensure compliance with 3GPP standards and will have to take all possible measures while installing its network to ensure that the out-of-band emissions are under the permissible limits defined by ETSI, ANSI, ITU, IEC standards etc.

PART 6: GENERAL CONDITIONS

6.1 OPERATION OF LICENSED SERVICES

- 6.1.1 The Licensee shall ensure that the Licensed System and the Licensed Services do not cause any damage to, or interference with, any Telecommunication System or Telecommunications Services of any other Operator.
- 6.1.2 The Licensee shall conduct its operations and shall establish its Licensed System in a manner so that it is not a safety hazard and is not in contravention of any law, rule or regulation.
- 6.1.3 For ensuring operational continuity of its Licensed Services, the Licensee shall take necessary steps including those conveyed by the Authority from time to time.

6.2 DISCONTINUATION OF SERVICES

- 6.2.1 The Licensee shall not discontinue providing Mandatory Services unless (a) the Licensee gives the Authority and affected customers at least 90 days prior written notice of such discontinuation, and (b) the Authority's prior written approval to such discontinuation is obtained. The Authority will not give its written approval to such discontinuation if the Licensee is in arrears of any fees payable to the Authority.

6.3 MONITORING

- 6.3.1 The Licensee shall provide, at its own cost, suitable equipment at premises designated by the Authority and will ensure its upgrading, security and safety, in order to monitor the communications for the purpose of; measuring and recording traffic; call detail records; curbing of Grey International Telephony Services including SIM Box Detector and Quality of Service in a manner specified by the Authority. The Licensee shall provide the Authority with access to such equipment, and the information generated by such equipment.

- 6.3.2 The aforementioned set of systems shall monitor the Licensee's communication for the purpose of web site/URL blocking, subject to justified technical limitation.
- 6.3.3 The Authority shall have the full right to inspect any premises or facility including hardware and software of the Licensee.
- 6.3.4 The Licensee shall comply with Critical Telecom Data and Infrastructure Security Regulations including its amendments issued from time to time.

6.4 INFORMATION

- 6.4.1 The Licensee shall furnish to the Authority such information as the Authority may demand regarding the Licensee's network plan, network and terminal standards, subscription, links utilized, financial information, costs and accounts, value added services or any such other information as the Authority may require from time to time within the prescribed time/period in connection with its functions, powers and responsibilities.
- 6.4.2 The Licensee shall maintain financial records and books of accounts in accordance with applicable laws in Pakistan. The Licensee shall submit audited financial statements, including at a minimum Statement of Financial Position, Statement of Profit or Loss and Other Comprehensive Income, Statement of Changes in Equity and Statement of Cash Flows along with related notes to the Authority within 120 days of the closing date of Financial Year of the Licensee.
- 6.4.3 The Authority shall take reasonable steps to maintain the confidentiality of information in writing that is disclosed to it by the Licensee and which is clearly indicated as confidential, except that the Authority may disclose information as per law or where the Authority determines that the public interest in disclosure outweighs the Licensee's interest in maintaining the confidentiality of such information.

6.5 QUALITY OF SERVICE

- 6.5.1 The Licensee shall at all times meet or exceed the quality of service standards described in Appendix - 3 and such other quality of service standards as the Authority may, by regulation, require, failing which, the Licensee shall be subject to the penalties determined by the Authority in accordance with the Act, Rules or Regulations. The Licensee shall maintain records of its performance in meeting these quality of service standards, and shall submit them to the Authority on a quarterly basis in such format as the Authority may require. The Licensee shall maintain supporting records for inspection and technical audit as and when required by the Authority. The Licensee shall maintain all such records for a period of three years.
- 6.5.2 The Authority may carry out tests on the quality of the Licensed Services and the Licensed System and the Licensee shall extend full co-operation and assistance for the purpose, including provision of test instruments and equipment.

6.6 INSPECTION

- 6.6.1 The Licensee shall allow inspection of any premises or telecommunications equipment, wherever situated, by a representative of the Authority at any time and furnish to the representative such information as may be required by the Authority.

6.7 NATIONAL SECURITY

- 6.7.1 The Licensee shall comply with the national security and other requirements of section 54 of the Act and any other national security requirements under the law.
- 6.7.2 It shall be open to the Authority to restrict the Licensee from operating in any unauthorized area defined by the Federal Government from the national security point of view.
- 6.7.3 The Licensee shall not transfer user information and CDRs/IPDRs (except pertaining to foreign subscribers on operator's network while roaming) to any person/place outside Pakistan including AJ&K and GB.
- 6.7.4 No local/long distance traffic (mobile and fixed line) shall be hauled directly outside Pakistan.
- 6.7.5 No remote access shall be provided to any unauthorized person/place outside Pakistan for any maintenance/repairs/databases/facility.
- 6.7.6 The network base stations shall be installed in such a way that signal strength fades away within the international border / Line of Control, or as specified, and no communication takes place across the international border/ Line of Control. No base station shall be installed without prior approval of the Board.
- 6.7.7 The Licensee shall not use any ciphering/encryption other than built in standard technologies without approval of the Authority.
- 6.7.8 The Licensee shall ensure to implement Equipment Identity Register (EIR) or related module in the network or as directed by the Authority.
- 6.7.9 Every User Equipment (UE) shall have a unique subscriber identity number.
- 6.7.10 The Licensee shall provide and extend at its own cost suitable equipment at premises designated by the Authority in consultation with the Designated Agency for the purpose of LI. The Licensed System must be compliant with ETSI LI and other related security standards of communications security and must be ready to be extended as desired by the Authority. The System shall be available prior to launch of commercial operation and support all services provided by the Licensee.
- 6.7.11 The Licensee shall activate a SIM after proper verification as per applicable Regulations/Directives/Standard Operating Procedures of the Authority.
- 6.7.12 The Licensee shall block website(s), or /web content(s) (on best effort basis) or other services as and when directed by the Authority.
- 6.7.13 The Licensee shall provide details of subscriber antecedents as and when directed by the Authority.

6.8 CALL RECORDS

- 6.8.1 The Licensee shall maintain call records including called and calling numbers, date, duration, time, IMEI and location details with regard to the communications made on its Licensed System for a period of one year for scrutiny by or as directed by the Authority.

- 6.8.2 In addition to maintaining call records mentioned above, the Licensee shall also record/store data session logs/info along with IP address for one year for scrutiny by or as directed by the Authority.

6.9 NETWORK STANDARDS

- 6.9.1 The Licensee shall use any type of network equipment that meets appropriate ITU or other international telecommunication standards recognized by the Authority.
- 6.9.2 The Licensee shall ensure that its network is at all times interoperable and interconnectable with the networks of other Operators. If the Licensee implements any new equipment or protocols in its network, the Licensee shall bear the cost of any modifications to its network to maintain such interoperability and interconnectability with the networks of other Operators.
- 6.9.3 The Licensee shall ensure that it's Licensed Systems and Licensed Services at all times fulfils the traits of Confidentiality, Integrity and Availability, as per standards recommended by ITU-T and NIST.
- 6.9.4 The Licensee shall ensure deployment of state-of-the-art equipment/ solutions, in an effort of adopting defensive measures, for securing and protecting its Licensed Systems, network data and Licensed Services from accidental and malicious cyber risks/ threats.
- 6.9.5 Licensee shall provide technical report(s) to the extent that its Licensed System(s) has been established, maintained and is being operated in harmony with international best practices, ITU/ ETSI standards and any other standards as prescribed by the Authority from time to time.

6.10 TYPE APPROVAL OF TERMINAL EQUIPMENT

- 6.10.1 The Licensee shall not install or connect, or permit the installation or connection of, any Terminal Equipment unless the Terminal Equipment is (a) type approved, or otherwise permitted by the Authority for connection to the Licensed System, (b) IMEI connected to network is in line with Mobile Device Identification, Registration & Blocking Regulations.

6.11 SERVICE COMMENCEMENT CERTIFICATE

- 6.11.1 The Licensee shall continue to provide Licensed Services for which commencement certificate has already been issued by the Authority prior to the Effective Date. However any new category of Licensed Services shall be dealt with in accordance with License condition 1.1.8 and the Licensee shall not provide such Licensed Services to customers, or accept any payment from customers in respect of such services to be provided by the Licensee, until the Licensee has obtained from the Authority a service commencement certificate evidencing that the Authority is satisfied that the Licensee has established the Licensed System, and is able to provide the new category of Licensed Services, in accordance with the License.
- 6.11.2 The Licensee shall give 30 days prior written notice to the Authority of the date on which the Licensee intends to commence providing Mandatory Services to customers. The Licensee shall cooperate with the Authority in its investigation of the Licensed System and the Licensed Services in connection with the issuance by the Authority of a commencement certificate.

PART 7: RELATIONS WITH CUSTOMERS

7.1 STANDARD CONTRACT OF SERVICE

- 7.1.1 The Licensee shall submit a standard contract of service, for use with its customers, for approval by the Authority, before commencement of its Licensed Services. The Licensee shall submit the standard contract, and amendments thereto from time to time, with the Authority for its approval. The Authority shall approve the standard contract if it contains the terms and conditions described in sub clause 7.2.1 and if it contains terms and conditions that are not unduly burdensome on customers.
- 7.1.2 The standard contract, as approved by the Authority, shall apply to all customers that obtain Licensed Services from the Licensee.
- 7.1.3 Prior to providing any Licensed Services to its customers, the Licensee shall enter into a contract with customers in accordance with the standard form contract approved by the Authority.
- 7.1.4 The Licensee may enter into agreements with commercial customers for the provision of Licensed Services on terms that are negotiated between the Licensee and such customers.

7.2 CONTENTS OF THE STANDARD CONTRACT OF SERVICE

- 7.2.1 The standard contract shall include, at a minimum, the following terms and conditions:
 - 7.2.1.1 Deposits and alternative methods of providing security for payment where reasonably required, provided that in no circumstances such deposits or security exceeds the charges reasonably anticipated to be incurred by the customer within a three (3) month period;
 - 7.2.1.2 Pricing or mechanisms by which prices are determined;
 - 7.2.1.3 Confidentiality of customer information;
 - 7.2.1.4 Refunds or other rebates for service problems or over-billing;
 - 7.2.1.5 Payment terms, including any applicable interest or administration charges;
 - 7.2.1.6 Minimum contract period;
 - 7.2.1.7 Customer's and Licensee's rights of termination;
 - 7.2.1.8 The customer shall not use the SIM for unsolicited, abusive, obnoxious, offensive, indecent, obscene, fraudulent or menacing messages, calls or communications or for any improper, immoral or unlawful purpose; and
 - 7.2.1.9 In case of a loss or theft of the SIM Card, the customer shall immediately inform and request the Licensee, in writing, to block the SIM Card, failing which, the customer shall not be absolved from criminal liability, if any, arising due to use of such SIM Card/connection in any unlawful/criminal act.

7.3 COMPLAINT SYSTEM

- 7.3.1 The Licensee shall establish an efficient and easy-to-use system to promptly receive, process and respond to complaints, claims or suggestions by customers of Licensed Services.
- 7.3.2 The Licensee shall make all reasonable efforts to resolve consumer complaints or disputes without delay and without recourse to the Authority.
- 7.3.3 If a complaint is filed with the Authority in connection with any dispute between the Licensee and a customer regarding any activity that is the subject of this License, the Authority may settle the dispute. Without prejudice to the appeal provided under section 7 of the Act, the Licensee shall abide by decision of the Authority.

7.4 CONTENT AND FORMAT OF BILLS

- 7.4.1 The Licensee may determine the contents and format of its bills to customers provided that:
 - 7.4.1.1 in relation to a customer, the bill reflects the types of service and the units for which charges are made including, at a minimum (but only to the extent requested by the customer), the starting time of each connection, the number called and the duration and number of units for each call; and
 - 7.4.1.2 the Licensee retains in its records information sufficient:
 - 7.4.1.2.1 to identify for customers the basis of the amount charged for use of its Telecommunication Services; and
 - 7.4.1.2.2 to provide the Authority with an independent quality assurance that the billing process complies with the requirements set out in clause 7.4.1.1 above.
- 7.4.2 The Licensee shall maintain appropriate billing processes to enable the Licensee to comply with the billing requirements of conditions in condition 7.4.1.
- 7.4.3 The above information must be made available to pre-paid customers either in printed or electronic form upon request. The supply of such information may attract a reasonable charge approved by the Authority.

7.5 CODE OF COMMERCIAL PRACTICE (CUSTOMER CHARTER)

- 7.5.1 The Licensee shall publish and resubmit to the Authority within six months of the date of signing, a code of commercial practices approved by the Authority. The code of practice shall include, at a minimum, provisions covering the following issues:
 - 7.5.1.1 A commitment to take steps to remedy service interruptions as soon as reasonably possible and to provide reasonable credits to customers for lengthy outages;
 - 7.5.1.2 Protection of the privacy of information stored, processed and transmitted over the Licensed System;

- 7.5.1.3 Maintenance by Licensee of the confidentiality of customer information;
- 7.5.1.4 Procedures for resolving disputes between Licensee and customers;
- 7.5.1.5 Availability to customers of information concerning their accounts with the Licensee; and
- 7.5.1.6 Commitment by the Licensee to customers in respect of standard and quality of Licensed Services.

7.6 PRIVACY OF COMMUNICATIONS

- 7.6.1 The Licensee shall not monitor or disclose the contents of any communication conveyed over its Licensed System except to the extent necessary for the purpose of maintaining or repairing any part of the Licensed System or monitoring the Licensee's quality of service, or except as required by the Act, the Rules, Regulations and conditions of this License.
- 7.6.2 The Licensee shall take reasonable measures including those, Authority may convey from time to time to safeguard its Licensed System from unauthorized interception of communication carried on the Licensed System.

7.7 CONFIDENTIALITY OF CUSTOMER INFORMATION

- 7.7.1 Except as permitted below, the Licensee shall take all reasonable measures to prevent information about its customers, including information about their business, other than directory information, from being disclosed to third parties, including the Licensee's own subsidiaries, affiliates and associated companies, except information which is required:
 - 7.7.1.1 For the process of collection of debts owed to the Licensee;
 - 7.7.1.2 By another Operator in relation to the provision of services to the customer, and provided that the information is disclosed in confidence to that Operator;
 - 7.7.1.3 By the Licensee's auditors for the purpose of auditing the Licensee's accounts; or
 - 7.7.1.4 For the prevention or detection of crime or the apprehension or prosecution of offenders or as may otherwise be authorised by or under any law of Pakistan.
- 7.7.2 The Licensee shall be permitted to disclose information about a customer where the Licensee has clearly explained to the customer (a) the nature of the information to be disclosed, (b) the recipients of the information to be disclosed and (c) the purpose for the disclosure, and the customer has provided Licensee with consent to such disclosure.
- 7.7.3 The Licensee shall also take best available measures as per regulations issued from time to time to protect data relating to its customers stored, retained or archived by the Licensee in any form, from unauthorized access, copying, disclosure, modification, leakage or destruction.

7.8 HARASSING, OFFENSIVE, UNSOLICITED OR UNLAWFUL COMMUNICATION

7.8.1 The Licensee shall take all reasonable steps to track and locate and prevent the source of harassing, unsolicited, offensive, fraudulent or unlawful communication.

7.8.2 The Licensee shall, on the directions of the Authority, terminate or suspend service to any customer that is the source of harassing, offensive or illegal communication.

7.9 PUBLIC SERVICE MESSAGING

7.9.1 The Licensee shall transmit messages to its customers at its own cost in the public or national interest as and when conveyed by the Authority.

7.9.2 The Licensee shall activate the Ring Back Tone at its customer's numbers at its own cost in the public or national interest as and when conveyed by the Authority.

PART 8: TARIFFS

8.1 TARIFF OF NON-SMP OPERATORS

8.1.1 The Licensee shall comply with the Authority's orders, determinations and regulations relating to the Licensee's tariffs, issued from time to time by the Authority.

8.2 PRICE REGULATION OF OPERATORS WITH SMP

8.2.1 If the Authority determines that the Licensee possesses SMP in a relevant market, the Authority may regulate the Licensee's prices, terms and conditions for those Licensed Services in the SMP market and any Licensed Services incidental thereto as determined by the Authority. The method of regulation shall be determined by the Authority and may include a requirement for prior approval of the Authority for any price terms or conditions, or the maximum or minimum price, or both, for the Licensed Services.

8.3 PUBLICATION OF TARIFFS, NOTIFICATIONS AND DISPLAY OF INFORMATION

8.3.1 The Licensee shall comply with all requirements regarding publication of prices, terms, and conditions, notifications and display of information, as established by the Authority from time to time. No hidden tariffs will be charged to the Customer.

PART 9: RELATIONS WITH OTHER OPERATORS

9.1 INTERCONNECTION

9.1.1 The Licensee shall, within 15 business days of a written request by another licensee, enter into negotiation, in good faith, for an agreement:

9.1.1.1 to connect and keep connected the Licensee's Licensed System to the Telecommunications Network run by the requesting operator at specified points of interconnection; and

- 9.1.1.2 to provide such other Mobile Communications Services as are reasonably requested in order for the requesting person to provide Mobile Communications Services to its Customers.
- 9.1.2 The Licensee may not be required to enter into an agreement as required above under sub clause 9.1.1 where to do so would, in its reasonable opinion and with the consent of the Authority:
 - 9.1.2.1 cause or would be likely to cause danger, damage or injury to any person or to any property;
 - 9.1.2.2 cause damage or otherwise interfere with the running of the Licensee's Licensed System or the provision of its Licensed Services over its Licensed System; or
 - 9.1.2.3 not be technically or economically feasible.
- 9.1.3 If the Authority determines that the Licensee has SMP in the relevant telecommunications market under the Rules issued from time to time then termination charges shall be offered at cost based rates with reasonable margins as determined by the Authority or in line with the methodology set by the Authority through industry consultation, and:
 - 9.1.3.1 on a transparent, non-discriminatory and objective basis; and
 - 9.1.3.2 subject to reasonable terms and conditions.
- 9.1.4 Subject to any default charges which may be approved by the Authority, the Licensee shall ensure that, within a reasonable specified period of time to be set by the Authority, its charges for the provision of Licensed Services in accordance with the above clause 9.1.3 shall be cost-oriented and fully justified, such charges to be calculated based on a reasonable assessment of the costs associated with establishing interconnection and providing the requested services.
- 9.1.5 The Licensee shall provide the evidence of cost for Interconnection Termination rates within 12 months of Commencement of the services. The rates so provided shall be certified by a practicing Cost and Management Accountant firm of Pakistan.
- 9.1.6 The Licensee shall provide to the Authority all such technical, operational and accounting information as the Authority may reasonably require in order to ensure that the requirements of this condition 9 are met. The Authority shall ensure that any information provided to it in accordance with this Condition 9 which is expressed to be confidential is maintained as such.
- 9.1.7 In the event that the Licensee and the party requesting interconnection are unable to reach an agreement between themselves, then either party may refer the matter to the Authority and the Authority shall use its best endeavours to determine the matter within three (3) months of the date of referral. The rates so determined will be binding on both the parties.

PART 10: INFRACTIONS AND SANCTIONS

10.1 SANCTIONS FOR VIOLATIONS OF THE LICENSE

- 10.1.1 If the Authority determines that the Licensee has violated a provision of this License or the Act, Rules or Regulations conditions of this License or any other orders or instructions of the Authority, the Authority may by order impose one or more sanctions provided in the Act, the Rules and Regulations issued there under.

PART 11: TERMINATION AND AMENDMENT

11.1 TERMINATION OF THE LICENSE

- 11.1.1 The License shall remain in force until it is terminated by one of the following events:
- 11.1.1.1 The term of the License expires without renewal;
 - 11.1.1.2 The Licensee agrees to the termination of this License; or
 - 11.1.1.3 The License is suspended or terminated in accordance with the Act, Rules or Regulations, or the provisions of this License.

11.2 AMENDMENT

- 11.2.1 This License may be amended by written agreement between the Licensee and the Authority subject to the provisions of the Act, Rules and Regulations.
- 11.2.2 Where any modifications to this License is proposed by the Authority but the Licensee and the Authority cannot agree in relation to that modification, the Licensee and Authority shall comply with Section 22 of the Act.

PART 12: GENERAL

12.1 ASSIGNMENT OF RIGHTS

- 12.1.1 This License granted under the Act and Rules shall be personal to the Licensee and shall not be assigned, sub-licensed to, transferred, directly or indirectly or held on trust for any person, without the prior written approval of the Authority.
- 12.1.2 The Licensee shall comply with the Rules and the Regulations, as regards transfer of this License or ownership of the Licensee.

12.2 OWNERSHIP AND CONTROL REPORTING

- 12.2.1 The Licensee shall notify the Authority of the occurrence of any act, agreement or transaction that, to its knowledge, directly or indirectly, results in (a) acquisition by a person or a group acting in common of more than 10 percent of the Voting Interests of the Licensee, or (b) disinvestment by a person or a group acting in common having direct or indirect control of 10 per cent or more of the Voting Interests of the Licensee, of those Voting Interests to any other person or group of persons.
- 12.2.2 The Licensee shall give the notification referred to in sub clause 12.2.1 above to the Authority on the later to occur of (a) one day after the date that the Licensee

becomes aware of the act, agreement or transaction, or (b) 60 days prior to the completion of the act, agreement or transaction.

12.2.3 For a period of one year following the Effective Date, the Licensee shall take all necessary steps to ensure that no transaction described in sub clause 12.2.1 takes place unless the prior consent of the Authority is obtained.

12.2.4 The Licensee shall provide the Authority with the name of each shareholder of each Relevant Company, and the total number of shares held by each such person, as and when required by the Authority.

12.3 NO LIABILITY BY THE AUTHORITY

12.3.1 Without prejudice to the rights of the Licensee under Section 7 of the Act, no suit, prosecution or other legal proceeding shall lie against the Authority or any member or employee of the Authority in respect of anything done or intended to be done by the Authority in good faith in exercise of its powers subject to section 33 of the Act.

12.4 FORCE MAJEURE

12.4.1 Notwithstanding anything to the contrary contained in this License, if the Licensee shall be rendered unable to carry out the whole or any part of its obligations under this License for any reason beyond the control of the Licensee, including but not limited, to acts of God, strikes, war, riots, etc., then the performance of the obligations of the Licensee as it is affected by such cause shall be excused during the continuance of any inability so caused, provided that the Licensee has taken all appropriate precautions and reasonable measures to fulfil its obligation and that it shall within 14 days of its first occurrence notify to the Authority the same and cause of such inability and its efforts to remove such cause and remedy its consequences.

12.5 COMMUNICATION WITH THE LICENSEE

12.5.1 The Licensee shall maintain on file with the Authority a current address for the Licensee, including telephone number, fax number and email address, and the name and title of a contact person, for the purpose of receiving communications from the Authority. Any notice or other communication to the Licensee permitted under this License may be given by hand delivering the same, or by mail, facsimile, or electronic mail addressed to the Licensee at its most recent address on file with the Authority.

PART 13: INTERPRETATION AND DEFINITIONS

13.1 INTERPRETATION

13.1.1 In this License, words importing the singular shall include the plural and vice versa.

13.1.2 The headings in this License shall not affect its interpretation.

13.1.3 Any reference, express or implied, to any legislation (including rules and regulations issued pursuant to that legislation) includes references to that legislation (and Rules and Regulations) as it may be amended or modified from time to time.

13.2 DEFINITIONS

13.2.1 The words and expressions used herein but not defined shall have the same meaning as are respectively assigned to them in the Act, the Rules and Regulations and Licenses issued thereunder. Unless the context otherwise requires, the following terms used in this License shall have the meanings indicated below:

“**Act**” means The Pakistan Telecommunication (Re-organization) Act 1996;

“**Authority**” means the Pakistan Telecommunication Authority established under section 3 of the Act;

“**Board**” means the Frequency Allocation Board;

“**Control**” means control in any manner that results in control in fact of more than 10% or more, whether directly through ownership of shares or indirectly through an agreement, arrangement or otherwise, or indirectly through an agreement or arrangement involving next of kin;

“**Data Throughput**” means the Internet speed in the downlink/uplink available on the testing mobile equipment during the testing session;

“**Date of Spectrum Auction**” means the date when auction is closed i.e assignment stage.

“**Effective Date**” means, 2026;

“**Federal Government**” means the Federal Government of Pakistan;

“**Financial Year**” means the period of twelve (12) months in respect of which the Licensee is required to make up its Annual Report and Audited Accounts under the Companies Act, 2017;

“**Initial Spectrum Fee (ISF)**” means, for the purpose of this license, fee to be paid under license condition 4.1.1;

“**Gross Revenue**” means the turnover or gross income exclusive of sales tax or any other tax levied by the Government from time to time which is charged and collected by the Licensee at the time of sale and deposited with the tax authorities and trade discount shown on invoices or bills, derived from sale of goods or from rendering or supplying services or benefits or from execution of contracts for Licensed Services or business;

“**ITU**” means the International Telecommunications Union;

“**LI**” means Lawful Interception;

“**License**” means this License, the terms and conditions applicable thereto, and any amendments thereto;

“**Licensed Services**” means the Mandatory Services and the Optional Services incidental to advanced NGMS technologies such as 5G and beyond;

“**Licensed System**” means the Telecommunication Systems which are in existence and operational or installed or otherwise provided, maintained and/or

operated by the Licensee now and at any time and from time to time for the purpose of providing Licensed Services by whatever means;

“**Licensee**” for the purpose of this license means the license holder No. signed on ;

“**Long Distance**” means end to end communication between points that are (i) located in different Regions or (ii) such other distance apart as the Authority may by Regulations specify;

“**Long Distance and International Licensee**” or “**LDI Licensee**” means a Licensee licensed to offer end to end communication between points that are (i) located in different Regions or (ii) located in Pakistan and outside of Pakistan or (iii) such other distance apart as the Authority may by Regulations, specify;

“**Mandatory Services**” means the Telecommunications Services that the Licensee must provide under this License, and which are described in sub clause 1.1.2 of this License;

“**Mobile Communication Service**” means a wireless-based Telecommunications Service where the Terminal Equipment is connected to the Telecommunications System by wireless means and which is capable of use while in motion;

“**Mobile Numbering Portability**” means a facility provided by any licensed provider of Mobile Communications Services to another which enables any User to whom a telephone number has been assigned to continue to be provided with Mobile Communications Services using the same number irrespective of the identity of the service provider providing the service;

“**Mobile Virtual Network Operator (MVNO)**” means an operator who has no frequency spectrum assignment(s), however, will provide mobile services to its own users by means of entering into commercial arrangement(s)/ agreement with a licensed Mobile Network Operator (MNO) by utilizing the capacity and facilities of that network, after grant of MVNO license by PTA;

“**Numbering Plan**” means the numbering scheme administered by the Authority which sets out the sequence of numbers or other characters which shall be used to route telephony traffic to specific locations;

“**Operator**” means any person authorised by a License issued by the Authority to establish, maintain and operate Telecommunications System or to provide Telecommunications Services.

“**RAB**” means Radio Access Bearer;

“**Region**” means a telecommunications administrative region, as determined by the Authority;

“**Regulations**” means all or any regulations issued from time to time by the Authority;

“**Rules**” means all or any rules issued from time to time under the Act;

“Signal Strength” means the transmitter power output as received by a reference antenna at a distance from the transmitting antenna as per Appendix-3.

“Site” means an outdoor installation having a mast height or an overall height above ground level of not less than ten (10) meters, established for the provision of cellular mobile services.

“SMP” means significant market power as defined in the Rules;

“Telecommunication Service” means a service consisting in the emission, conveyance, switching or reception of any intelligence within, or into, or from, Pakistan by any electrical, electro-magnetic, electronic, optical or optoelectronic system, whether or not the intelligence is subjected to re-arrangement, computation or any other process in the course of the service;

“Telecommunication System” means any electrical, electro-magnetic, electronic, optical or optic-electronic system for the emission, conveyance, switching or reception of any intelligence within or into, or from, Pakistan, whether or not that intelligence is subjected to re-arrangement, computation or any other process in the course of operation of the system, and includes a cable transmission system, a cable television transmission system and terminal equipment;

“Terminal Equipment” means equipment which is directly or indirectly connected to any Network Termination Point and which is used directly by users in order to access Telecommunications Services;

“USO” means universal service obligation as defined in any Regulations issued by the Authority from time to time;

“VSAT Services” means satellite communications services utilizing very small aperture terminals capable of satellite communications;

“Voting Interest” means, in respect of:

- (a) a corporation with share capital, means the vote attached to a voting share,
- (b) a corporation without share capital, means an interest that entitles the owner to voting rights similar to those enjoyed by the owner of a voting share,
- (c) a partnership, a trust, an association or a joint venture, means an ownership interest in the assets of it that entitles the owner to receive a share of the profits of it, to receive a share of the assets of it on dissolution and to participate directly in the management of it or to vote on the election of the persons to be entrusted with the power and responsibility to manage it, and
- (d) a not-for-profit partnership, trust, association or joint venture, means a right that entitles the owner to participate directly in the management of it or to vote on the election of the persons to be entrusted with the power and responsibility to manage it.

ACCEPTANCE

The Terms and Conditions of the License along with all its appendices are hereby accepted.

For and on behalf of
Company Name
(The Licensee)

Signature: _____

Name : xxxxxx

Designation : xxxxx

(Official Stamp)

APPENDIX- 1

A1 – Network Rollout

Phase	Due Date	Rollout Obligations (4G/5G)
Phase 1	2 years From Effective Date of the License	<ul style="list-style-type: none">i. Deployment of minimum 1000 sites per year;<ul style="list-style-type: none">a. 20% must be completely new sites at new locations to address coverage gaps (i.e. at least 200 new sites per year);b. 4G sites to be proportionately distributed in urban and rural areas in each province;c. Availability of 5G coverage in Federal and Provincial Capitals i.e. Karachi, Lahore, Peshawar, Quetta and Islamabad / Rawalpindi (10% of equivalent existing 4G/LTE sites in each city to be rolled out for provision of 5G services each year).ii. FTTS ratio to be increased to 20% of total network sites.
Phase 2	4 years from Effective Date of the License	<ul style="list-style-type: none">i. Deployment of minimum 1,000 sites per year;<ul style="list-style-type: none">a. 20% must be completely new sites at new locations to address coverage gaps (i.e. at least 200 new sites per year);b. 4G sites to be proportionately distributed in urban and rural areas in each province;c. Availability of 5G coverage in 10 additional cities (at least 2 additional cities from each province, i.e. Punjab, Sindh, KPK & Baluchistan) (10% of equivalent existing 4G/LTE sites in each city to be rolled out for provision of 5G services each year).ii. FTTS ratio to be increased to 25% of total sites.
Phase 3	6 years from Effective Date of the License	<ul style="list-style-type: none">i. Deployment of minimum 1,000 sites per year;<ul style="list-style-type: none">a. 20% must be completely new sites at new locations to address coverage gaps (i.e. at least 200 new sites per year);b. 4G sites to be proportionately distributed in urban and rural areas in each province.c. Availability of 5G coverage in 10 additional cities (at least 2 additional cities from each province, i.e. Punjab, Sindh, KPK & Baluchistan) (10% of equivalent existing 4G/LTE sites in each city should be rolled out for provision of 5G services each year).ii. FTTS ratio to be increased to 30% of total sites.

Phase	Due Date	Rollout Obligations (4G/5G)
Phase 4	9 years from Effective Date of the License	<ul style="list-style-type: none">i. Deployment of minimum 1,000 sites per year;<ul style="list-style-type: none">a. 20% must be completely new sites at new locations to address coverage gaps (i.e. at least 200 new sites per year);b. 4G sites to be proportionately distributed in urban and rural areas in each province.c. Availability of 5G coverage in 15 additional cities (at least 2 additional cities from each province, i.e. Punjab, Sindh, KPK & Baluchistan) (10% of equivalent existing 4G/LTE sites in each city should be rolled out for provision of 5G services each year).ii. FTTS ratio to be increased to 35% of total sites.

Note: Network database will be locked with PTA on Effective Date of license. Yearly site rollout plan shall be submitted to PTA on each anniversary of License Effective Date.

Notes:

- (i) The Licensee has to meet/exceed the QoS targets mentioned in Appendix 3.
- (ii) Rollout Obligations could be fulfilled by the frequencies stated in Appendix 2 or by any other frequencies for mobile communications the Licensee is entitled to use.
- (iii) 4G/5G coverage to be prioritised to address coverage gaps, motorways / highways, tourist areas, airports, industrial zones, universities, technology parks, hospitals, major transit hubs, train stations and bus terminals etc.
- (iv) The Licensee is required to provide 5G coverage map with clear boundaries on its website in addition to existing coverage maps.
- (v) Bandwidth expansion in existing frequency bands i.e 1800 MHz & 2100 MHz will not be considered as new site addition.
- (vi) For purpose of PBG release rollout obligations targets will be verified after due date.
- (vii) Any relaxation in the above targets may be granted by the Authority only in case of genuine difficulties to be supported and substantiated with reasons by the Licensee.

A2 - Performance Bond as a Guarantee

- a) As a guarantee for the performance of the Licensee’s network roll-out obligations set out in A1, the Licensee shall submit four (04) separate Performance Bank Guarantees (PBGs), one for each rollout phase, in the form of unconditional, irrevocable, and continuing Bank Guarantees. Each PBG shall be issued by a local bank in Pakistan having a minimum credit rating of AA+ and above, to the satisfaction of the Authority.
- b) The Licensee shall submit the four PBGs being issued in Pakistan Rupees for an aggregate amount equivalent to USD 15,000,000 (US Dollar Fifteen Million). Each PBG shall accordingly be in Pakistan Rupees being equivalent of USD 3,750,000 (US Dollar Three Million Seven Hundred Fifty Thousand), submitted prior to the signing of the License or as per the schedule prescribed by the Authority. For USD-PKR conversion in this regard, National Bank of Pakistan

(NBP) TT selling rate prevailing on the date preceding the date of spectrum auction shall be used.

- c) Each PBG shall be released upon the Licensee's successful completion of the respective phase's rollout obligations specified in A1. The PBG for each phase shall remain valid until six (06) months after completion of the associated phase's rollout milestone.
- d) If the Licensee fails to meet the required rollout obligations for a specific phase, the Authority shall release only the portion of that phase's PBG equivalent to the percentage of rollout achieved, and the remaining proportionate amount corresponding to unfulfilled obligations shall be encashed by the Authority.
- e) Any incomplete rollout obligations of a given phase shall be carried forward and completed by the Licensee in the subsequent phase's rollout, without affecting the Authority's right to encash the proportionate PBG for the phase in which the shortfall occurred.

APPENDIX- 1* (For New Entrant Only)

A1 – Network Rollout

Phase	Due Date	Rollout Obligations (4G/5G)
Phase 1	2 years From Effective Date of the License	Deployment of minimum 200 sites per year (at-least 20% FTTS and 20% 5G sites).
Phase 2	4 years from Effective Date of the License	Deployment of minimum 200 sites per year (at-least 20% FTTS and 20% 5G sites).
Phase 3	6 years from Effective Date of the License	Deployment of minimum 200 sites per year (at-least 20% FTTS and 20% 5G sites).
Phase 4	9 years from Effective Date of the License	Deployment of minimum 200 sites per year (at-least 20% FTTS and 20% 5G sites).

Note:

- (i) The Licensee has to meet/exceed the QoS targets mentioned in Appendix 3.
- (ii) Rollout Obligations shall be fulfilled by the frequencies stated in Appendix 2.
- (iii) 4G/5G coverage to be prioritised to address coverage gaps, motorways / highways, tourist areas, airports, industrial zones, universities, technology parks, hospitals, major transit hubs, train stations and bus terminals etc.
- (iv) The Licensee is required to provide 5G coverage map with clear boundaries on its website in addition to existing coverage maps.
- (v) For purpose of PBG release rollout obligations targets will be verified after due date.
- (vi) Any relaxation in the above targets may be granted by the Authority only in case of genuine difficulties to be supported and substantiated with reasons by the Licensee

A2 - Performance Bond as a Guarantee

- a) As a guarantee for the performance of the Licensee’s network roll-out obligations set out in A1, the Licensee shall submit four (04) separate Performance Bank Guarantees (PBGs), one for each rollout phase, in the form of unconditional, irrevocable, and continuing Bank Guarantees. Each PBG shall be issued by a local bank in Pakistan having a minimum credit rating of AA+ and above, to the satisfaction of the Authority.
- b) The Licensee shall submit the four PBGs being issued in Pakistan Rupees for an aggregate amount equivalent to USD 15,000,000 (US Dollar Fifteen Million). Each PBG shall accordingly be in Pakistan Rupees being equivalent of USD 3,750,000 (US Dollar Three Million Seven Hundred Fifty Thousand), submitted prior to the signing of the License or as per the schedule prescribed by the Authority. For USD-PKR conversion in this regard, National Bank of Pakistan

(NBP) TT selling rate prevailing on the date preceding the date of spectrum auction shall be used.

- c) Each PBG shall be released upon the Licensee's successful completion of the respective phase's rollout obligations specified in A1. The PBG for each phase shall remain valid until six (06) months after completion of the associated phase's rollout milestone.
- d) If the Licensee fails to meet the required rollout obligations for a specific phase, the Authority shall release only the portion of that phase's PBG equivalent to the percentage of rollout achieved, and the remaining proportionate amount corresponding to unfulfilled obligations shall be encashed by the Authority.
- e) Any incomplete rollout obligations of a given phase shall be carried forward and completed by the Licensee in the subsequent phase's rollout, without affecting the Authority's right to encash the proportionate PBG for the phase in which the shortfall occurred.

APPENDIX - 2

RADIO FREQUENCY SPECTRUM ASSIGNMENT, TERMS AND CONDITIONS

1.1 RADIO FREQUENCY SPECTRUM ASSIGNED TO LICENSEE

1.1.1. Subject to the terms and conditions of this License, the Licensee is assigned the following radio frequencies for use in providing the Licensed Services in Pakistan:

- a) xxx MHz: xxx MHz (paired spectrum)
(xxx– xxx MHz / xxx – xxx MHz)
- b) xxx MHz band spectrum: xx MHz (unpaired spectrum)
(xxx– xxx MHz)

1.2 TERMS AND CONDITIONS FOR USE OF ASSIGNED FREQUENCY SPECTRUM

1.2.1. The licensee shall comply with the following conditions regarding transmit powers and out of band emissions:

a) 700 MHz FDD Band

- i) In-band power restrictions:
 - (1) BTS
 - (a) TRP of 53.5 dBm/5 MHz
 - (2) Terminal
 - (a) Nomadic: 23 dBm TRP
 - (b) Fixed: 23 dBm / 5 MHz EIRP.

ii) Out-of-band emission restrictions for non-AAS devices:

Separation from band edge	0-5 MHz	5-10 MHz	>10 MHz
Power level dBm/100kHz EIRP per transmitter port	-7dBm-7/5 ($F_{\text{offset(MHz)}} - 0.05$)dBm	-14	-16

iii) Out-of-band emission restrictions for AAS devices:

Separation from band edge	0-5 MHz	5-10 MHz	>10 MHz
TRP per sector (dBm)	2dBm-7/5 ($F_{\text{offset(MHz)}} - 0.05$)dBm	-5	-7

b) 1800 and 2100 MHz FDD Bands

The technologies implemented should use the Frequency Division Duplex (FDD) access method and be compliant with the transmit powers and out-of-block (OOB) emission limits as stipulated in the relevant 3GPP Technical

Specifications, as amended from time to time, or any other standards adopted or prescribed by PTA and FAB.

c) 2300, 2600 AND 3500 MHz TDD Bands

i) In-band power restrictions:

(1) BTS

- (a) AAS: 44 dBm / 5 MHz TRP per cell
- (b) Non-AAS: 65 dBm / 5 MHz EIRP per cell

(2) Terminal

- (a) Nomadic: 28 dBm TRP
- (b) Fixed: 35 dBm / 5 MHz EIRP

ii) Out-of-band emission restrictions:

Separation from band edge	0-5 MHz	5-10 MHz	>10 MHz
AAS dBm/5MHz TRP per cell	4	1	1
Non AAS dBm/5MHz EIRP per antenna	21	15	13

1.2.2. The licensee shall comply with the following technical conditions regarding TDD frame-structure, clock synchronization and cross border signals coordination/planning:

- 1.2.2.1. Regarding coordination with other cellular mobile operators within Pakistan, a LTE (4G) 4:1 and 5G NR 8:2 synchronised framing arrangement shall be adopted as the default arrangement in all TDD bands, but licensees may modify this through mutual agreement on a band-by-band basis in consultation with PTA & FAB;
- 1.2.2.2. Regarding coordination across national borders, licensee will be subject to existing and future agreements with neighbouring countries;
- 1.2.2.3. Licensees shall work together to coordinate their networks to minimise interference between themselves through all possible technical means;
- 1.2.2.4. Licensees may coordinate with operators in neighbouring countries to plan cross-border frequency assignments to minimise any potential interference;
- 1.2.2.5. The responsibility for clock synchronization and alignment of frame structures in the TDD-based networks proposed above shall rest solely with the operators, in accordance with prevailing global best practices, for the purpose of mitigating any unwanted effects arising from cross-border signals in overlapping frequency bands from neighbouring countries;
- 1.2.2.6. Licensee may consider adoption of ECC Recommendation 11(05) for Clock Synchronization of TDD based networks with neighbouring countries; and

- 1.2.2.7. PTA/ FAB reserves the right to amend technical conditions, including power limits and emission masks, in the interest of spectrum efficiency, interference mitigation, or harmonization with international standards.

APPENDIX - 3

QUALITY OF SERVICE STANDARDS

- 1.1 The Licensee shall take reasonable and prudent measures to ensure that the Licensed System and Licensed Services are available and operate properly at all times.
- 1.2 Any fault in any component of the Licensed System or Licensed Service shall be repaired as early as possible.
- 1.3 The Licensee shall provide direct access to Operations Support System (OSS) KPIs data for the purpose of monitoring in prescribed format whenever required by the Authority. The Authority shall have the right to verify, audit, and validate the integrity and source of such data.
- 1.4 During each calendar month, Licensee shall meet or exceed the following quality of service standards (except for causes attributable to another Operator or a service provider that provides telecommunications services outside Pakistan):

Indicators	Minimum Target	Remarks
Service Provisioning		
Service Activation Time		
Post-Paid	≤ 1hr.	
Pre-paid	≤ 30 min.	
Service Quality		
The Licensee shall be solely responsible for meeting all regulatory obligations such as PTA's Regulations on QoS and relevant International standardization forums such as ETSI, ANSI, ITU, 3GPP/2, IEC etc		
Key Performance Indicator	Benchmark	Remarks
Network Down-time	Union Council ≤ 5%	Network Down-time to be met at each benchmark
	Tehsil ≤ 3%	
	District ≤ 2%	
	Nationwide ≤ 1 %	

Grade of Service (end to end blocking)	≤ 2 %	
Call Connection Time	≤ 7.5 sec	
Call Completion Ratio	> 98 %	
Mean Opinion Score (Average of, Average A2B plus Average B2A)	>3	As recommended by ITU-T in recommendation number P.862.3 (POLQA) or latest ITU/Relevant forum recommendation
SMS Success Rate	≥ 99%	
End to End SMS Delivery Time	≤ 12 seconds	
RAB setup success rate	>98%	
Session abnormal release rate	<2%	
Inter System Handover (ISHO) success rate for CS Voice (only)	≥ 98%	
Indicators	BenchMark	Remarks
Customers' Complaints		
Customers' Complaints/100 Subscribers / Month		
Complaints Regarding Billing	≤ 1 %	
Complaints Regarding Network Operability	≤ 1 %	
Complaint Turn Around Time		
%age of Billing Complaints Resolved Within 24 hrs.	98 %	
%age of Billing Complaints Resolved Within 48 hrs.	100 %	

%age of Complaints (Regarding Network Operability) Resolved Within 24 hrs.	95 %		
Within 48 hrs.	100 %		
Billing Service			
Billing Complaints	0.2 per 100 bills issued	Applies to complaints which are valid	
Reconnection Time After Clearing Arrears	15min	The time it takes in minutes to reconnect the service once the due payment has been made by the customer	
Operator Service			
Operator Assistance Response Time Within 30sec.	≥98 %	There should be a queuing system for all operator attended calls i.e., no call should receive a busy signal; rather each call is queued and maximum calls (as shown in the given benchmark) should be answered within 30 seconds.	
Dedicated Customer Complaint Helpline Response Time within 30sec.	≥98 %		
Directory Assistance Response Time Within 30sec.	≥98 %		
Calls to Emergency Numbers Handled Within 30 Seconds	100%		
Directory Assistance			
Updated Directory Assistance	Provisioning of redirect mechanism to PTCL directory	Provisioning of updated directory assistance	The Licensee should provide redirect service mechanism for accessing PTCL's Directory Assistance to its subscribers. The Licensee is required to provide its own Directory Assistance services after one year of the Effective Date.

Network Management & Security		
Voice Security during Connection	Yes	
Personal Information Security	Yes	
Provisioning of Centralized Customer Complaint Database	Yes	
Provisioning of Computerized Directory Access System	Yes	
Probability of Fraud on User's Account	No	The Licensee should demonstrate to PTA that fraud controlled procedures are in place.

Key Performance Indicator	Benchmark for technologies standardized for 4G / LTE	Remarks
Signal Strength (RSRP)	A minimum outdoor signal strength of -100 dBm must be achievable with 90% confidence.	To be measured at random locations as per PTA QoS verification methodology. @ ≥10Mbps by end of 1 st year of Effective Date ≥20Mbps by end of 2 nd year of Effective Date ≥25Mbps by end of 3 rd year of Effective Date ≥35Mbps by end of 4 th year of Effective Date ≥40Mbps by end of 5 th year of Effective Date ≥45Mbps by end of 6 th year of Effective Date
User data throughput (For 90% Consumers)	a. Minimum downlink speed of 20 Mbps (nationwide) within two years from the Effective Date; b. Minimum downlink speed of 35 Mbps (nationwide) within four years from the Effective Date; c. Minimum downlink speed of 50 Mbps (nationwide) within nine years from the Effective Date; @ - yearly details as per remarks For upload throughput to be at least 25% of downlink speed.	
Latency (RTT)	≤ 75 msec	
Web Page load time	≤ 5 sec	

Key Performance Indicator	Benchmark for technologies standardized for 4G / LTE	Remarks
		≥50Mbps by end of 9 th year of Effective Date

Key Performance Indicator	Benchmark for technologies standardized for 5G	Remarks
Signal Strength (SS-RSRP)	A minimum outdoor signal strength of -100 dBm must be achievable with 90% confidence.	To be measured at random locations within claimed coverage area as per PTA QoS verification methodology.
User data throughput (For 90% Consumers)	a. Minimum downlink speed of 50 Mbps within two years from the Effective Date; b. Minimum downlink speed of 75 Mbps within four years from the Effective Date; c. Minimum downlink speed of 100 Mbps within nine years from the Effective Date; For upload throughput to be at least 25% of downlink speed.	
Latency (RTT)	a. ≤ 50 msec (2026-2028), b. ≤ 40 msec (2028-2030), c. ≤ 35 msec (2030-2032)	
Video MOS (avg)	≥ 3	
Jitter	≤ 30 msec	
Packet Loss	≤ 1%	
Web Page load time	a. ≤ 5 sec (2026-2028), b. ≤ 4 sec (2028-2030), c. ≤ 3 sec (2030-2032)	

1.5 The Licensee shall not apply any priority flag/Quality Class Identifier(QCI) in the surveyed area for the purpose of transparency.

1.6 PTA may revise the QoS standards and above-mentioned targets at any time. In addition, any QoS KPIs revised in future and regulations made thereto by the PTA for Licensed Services shall be strictly followed by the Licensee.