



# SPECTRUM REFARMING: BROADBAND CONTEXT & FRAMEWORK

THURSDAY 21 MAY 2026

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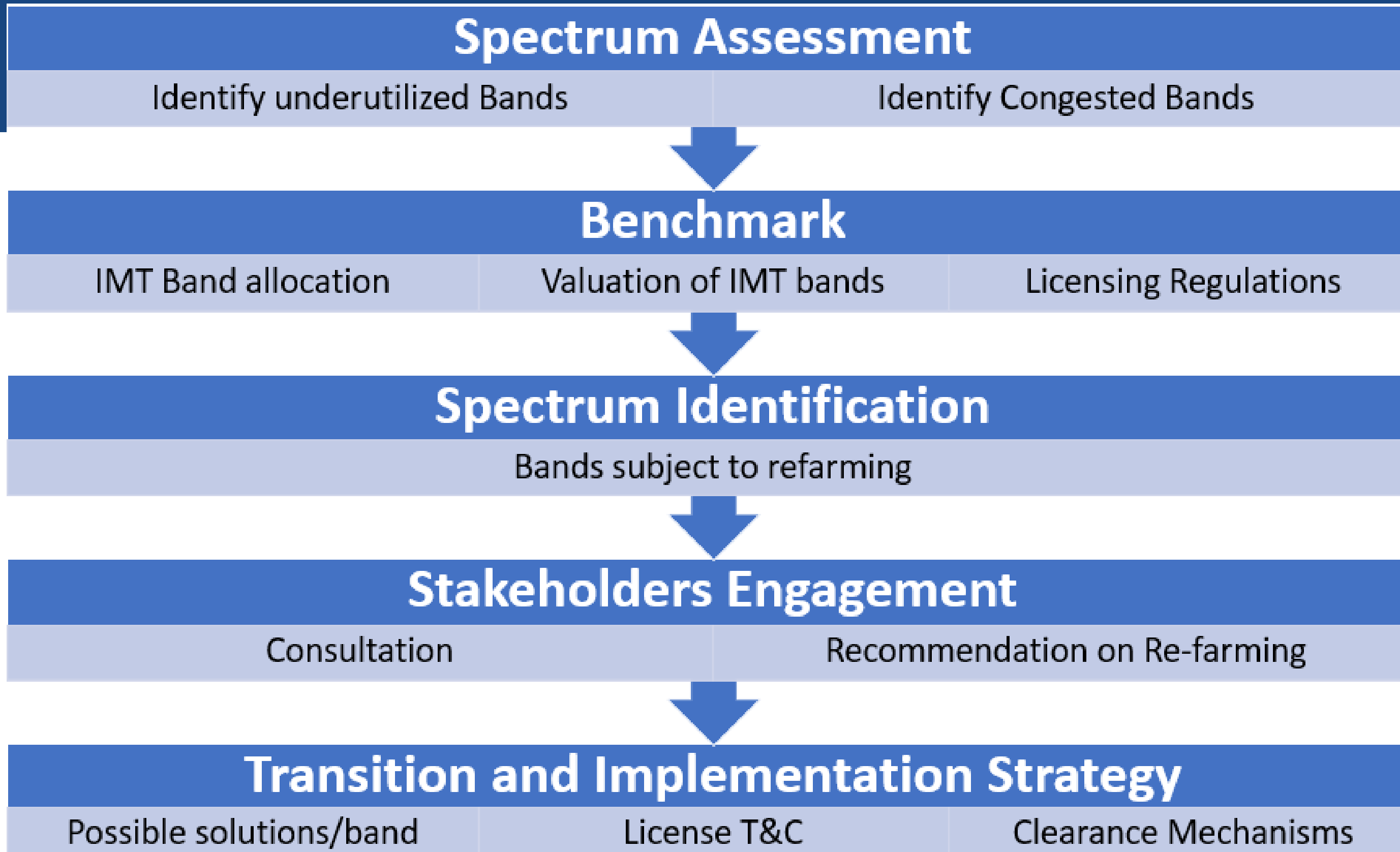
# OUTLINE

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- ❑ Refarming Action Plan
- ❑ Spectrum Refarming Objectives, Scope, & Plan for Lebanon
  - ❑ Broadband Context & Challenges
  - ❑ TRA Objectives & Framework
  - ❑ Licensing Outlook & Options
  - ❑ Spectrum Refarming Scope
  - ❑ Refarming Benchmark, Rules and Options
- ❑ Rollout and Coverage Conditions



# REFARMING PROCEDURES



# ACCELERATING BROADBAND IN LEBANON

The TRA intends to **accelerate Broadband** deployment by:

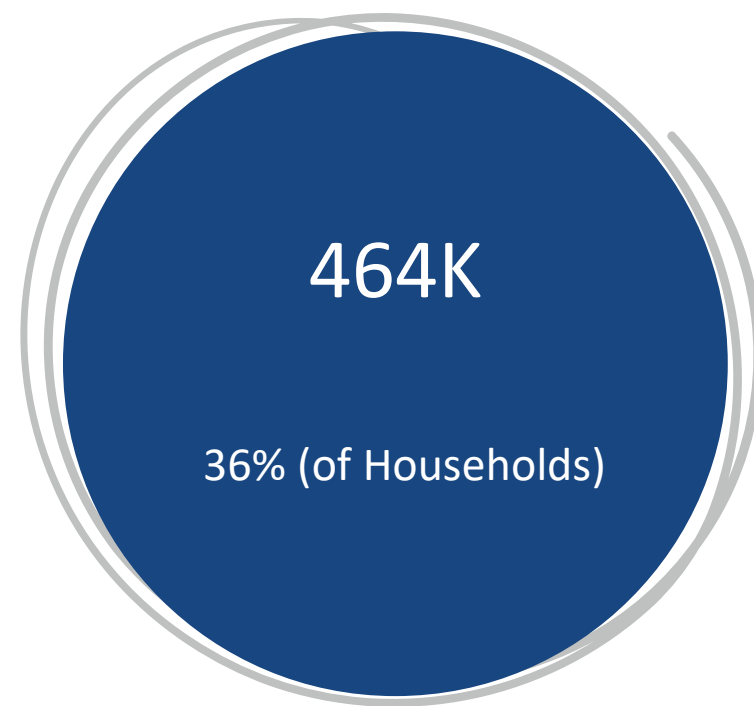
1. Expand the footprint of **FTTH** through Ogero/LibanTelecom and new broadband national/regional strategy
2. Issue Licenses to MIC1, MIC2 and Ogero/Liban Telecom
3. Allow **Existing DSP's and new entrants** to apply for broadband access licenses
4. Issue regulatory decisions and guidelines to **resolve unlawful operations** including unlicensed Resellers market
5. Put into action enforcement procedures and imposing penalties in accordance with the Telecommunications Law 431

**The target is to trigger investments in actual deployment in infrastructure and access networks**

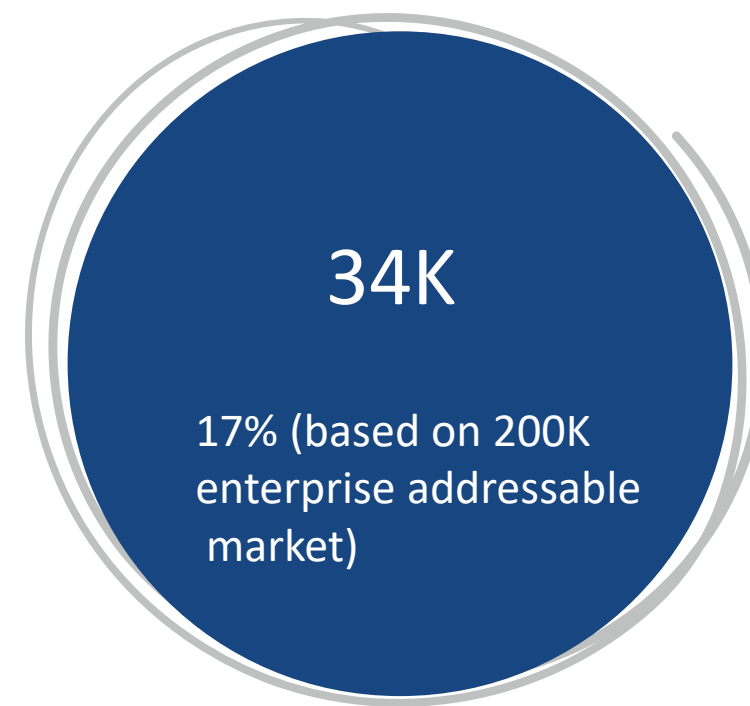
**Fair competition  
will help speed up  
deployment,  
improve service  
and reduce prices**

# BROADBAND PENETRATION IN LEBANON

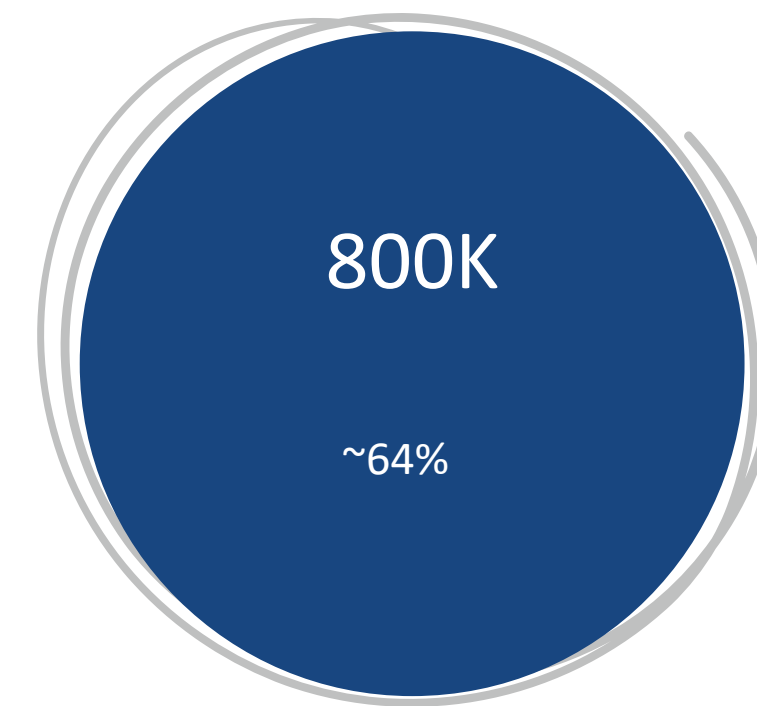
Fixed broadband (FWA, DSL, Fiber, LTE) penetration in Lebanon based on a population of 5.8M (1,262,200 households)\*:



**MoT/OGERO**



**LICENSED ISPs**



**UNLICENSED RESELLERS**

\* World Bank

# BROADBAND PENETRATION IN LEBANON

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- ❑ **The unlicensed internet market is nearly double the size of the licensed market**
- ❑ **Mobile broadband (3G, 4G-LTE) is provided by the two Mobile Operators MIC1 & MIC2**
- ❑ **MIC1 & MIC2 Data Subscribers: ~ 4 Million**
- ❑ **Total licensed and unlicensed BB penetration is virtually 100% of total Households, but the majority is being offered by unlicensed resellers**

# TRA IS REVISING THE SPECTRUM ALLOCATION AND RE-FARMING VALUABLE BANDS TO ADDRESS DISORDER IN SPECTRUM USAGE

- ❑ **Scope:** Re-farming of the IMT bands primarily **2.3, 2.6, 3.5 & 26 GHz** to address network needs to enable BWA competition among Mobile operators, Liban Telecom and DSPs
- ❑ **Size:** the IMT midbands (2.3, 2.6 & 3.5 GHz) subject to refarming is around **800 MHz** capacity but currently most of them are being extensively used
- ❑ **The Re-farming takes into consideration:**
  - Current licensed spectrum
  - Continuity of services directly or indirectly
  - Revision of required spectrum allocation according to technological advancement & market trends
  - International benchmarks
  - Efficient usage (bits/Hz) in the most valuable bands for BB (fixed and mobile) access services
  - Alignment of the actual usage with the international standard such as the IMT and ITU recommendations

# MOBILE & FWA LICENSING OUTLOOK (OPTIONS)

## Baseline National Licenses (common to all options):

- MIC1 – National Mobile and FWA
- MIC2 – National Mobile and FWA
- Liban Telecom – National POTS, Mobile, FWA, Core Infrastructure & International Gateway

## New FWA Licenses (Current DSPs/New entrants)

- 1 National license + 1 Regional License
- 2 National licensees
- 9 DSPs (Maintain current situation)

## Strategic Goals:

- Address disorder in spectrum usage
- Develop regulatory framework to address illegal BB market
- Ensure continuity of services during refarming transition and illegal transformation
- Expand broadband (fixed and mobile) penetration (urban + rural)
- Promote competition & infrastructure investment
- Restructuring the sector to enhance investment opportunities

**Number of FWA  
service providers  
is maintained to  
be ≤ 5 nationally**

# FWA OPTIONS BEYOND THE BASELINE NATIONAL LICENSES

Option	Additional Access Licensees	Key Implications
<b>Option 1</b>	+ 1 New National + 1 New Regional	Balanced mix of national & regional players; fosters localized competition
<b>Option 2</b>	+ 2 New National	Stronger national competition; higher investment requirements
<b>Option 3</b>	+ 9 DSPs with extended status but with new T&C (License duration, spectrum allocation, price, & revenues .....)	Broad DSP participation; innovation potential; complex coordination

Any current DSP, consortium of DSPs or a new entrant can bid for a license

# REFARMING OPTIONS

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## □ National Access License

- A consortium of DSPs is strongly recommended since it optimizes spectrum allocation and use
- A national licensee is likely to have core network buildout obligation to interconnect its access parts
- A national licensee is likely to have rollout and coverage obligations in the access network especially with regards to absorption of unlicensed resellers

## □ Regional Access License

- Spectrum allocated to regional licenses will be re-assigned and reused in multiple regions
- Regional licensee is likely to have rollout obligations in the access network especially with regards to absorption of unlicensed resellers



## REFARMING OPTIONS CONTINUED

### Option1

(60-100) MHz could be allocated to national & (30-50)MHz to regional licensees/DSPs

### Option 2

(60-100) MHz could be allocated to national licensees/DSPs

### Option 3

- Option 3A & 3B maintains distribution of available spectrum equally among 9 DSPs .

This is the least efficient option since it uses up virtually all available spectrum

- Option 3C intended to auction available spectrum among the 9 DSPs

# SPECTRUM USAGE STATUS AND REQUIRED IMMEDIATE ACTIONS

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## Required Immediate Actions:

- Ensure implementation of MoT Decision # 1982/أص dated August 10, 2022 to vacate the 3.5 GHz spectrum currently used
- The TRA issued a Decision to extend the current DSP licenses till 6 October 2026
- The TRA to finalize the draft Decree of **Spectrum Fees**
- The TRA to finalize the draft Decree of **Rights of Way (RoW)**
- The TRA to finalize and issue the **Inspection and Enforcement** Regulation(s)
- TRA's policy on **FTTH Guidelines** and Rollout
- TRA to update the **LNFT** (Lebanese National Frequency Table)

# SPECTRUM REFORMING RULES

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- Minimum spectrum ( $S_{min}$ ) to be secured for DSPs, will be awarded and priced either on the basis of Reserved Price or on the average of total open auctions of the remaining spectrum
- Spectrum ceilings ( $S_{max}$ ) will be considered to prevent spectrum blocking and to ensure fair competition.
- For Option 3, spectrum to be awarded **either equally** to the 9 DSPs or by **auction** and priced on the basis of Administrative pricing/Auction accordingly
- DSPs could continue to use parts of the spectrum on a temporary basis but will have to pay RTU fees linked to the prices generated from (Reserved Price/Auction)
- In addition, current DSPs have to migrate from their current positions unless they acquire same spectrum sub-bands in the reforming auction.

# SPECTRUM REFORMING RULES

## □ Spectrum Auction Rules

- ✓ For National License: Open auction in midbands
- ✓ Set reserved price for national and regional blocks on the basis of population
- ✓ Current DSPs can participate in the National/Regional auction either as individuals or as a consortium.
  - Current DSP should win in the auction the minimum blocks in order to be awarded  $S_{min}$
  - A winner among current DSPs (Individual/Consortium) will be assigned spectrum  $S_{min} +$  Blocks Awarded by auction.

## □ Spectrum Fees

- ✓ Spectrum for P2P to be re-assessed, reformed and priced on link-by-link basis
- ✓ MICs, LT and DSPs shall pay RTU and SAC fees for frequencies used in all bands (AIP/Market based)
- ✓ Current DSPs who win in the auction will pay:
  - ✓  $S_{min}$  fees (reserved Price) + Blocks awarded by auction (Auction price)

# LICENSE TERMS & CONDITIONS

Element	Baseline	National DSP	Regional DSP
License Type	Individual	Individual	Individual
License Term	20 years	15 years	10 years
DSP Consortium	N/A	Encouraged	Neutral?
FWA Technology	4G/5G	4G/5G	4G/5G?
Mobility	Yes	No	No
Fixed Access (FTTH) in addition to FWA	<u>Yes</u> for LT only	Yes	Yes
Protection for Fixed Access after which Open Access is mandatory	No	5 years	3 years
Backbone Obligation	Yes	Yes	No, just IX POP
Coverage and Reseller Customer Absorption Oblig.	Yes	Yes	Yes

# ROLLOUT AND COVERAGE CONDITIONS

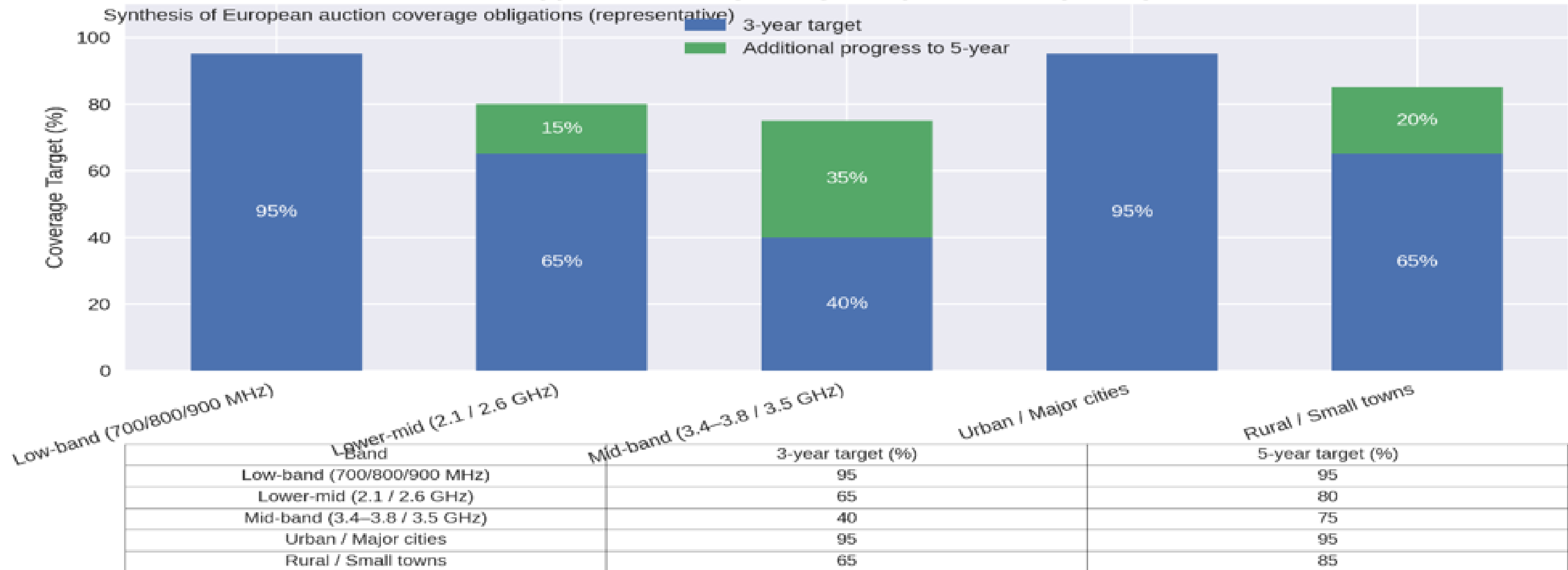
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Coverage rollout  
conditions

Reseller customers  
absorption  
rollout conditions

# COVERAGE BENCHMARKS - EUROPE

Typical Coverage Targets by Band — 3yr & 5yr



# COVERAGE BENCHMARKS

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- ❑ **European benchmark:** staged rollout, city-first, band-specific targets.
  - ❑ **Year 3:** ~50–65% population coverage (urban focus, mid/high bands).
  - ❑ **Year 5:** ~75–85% population coverage.
  - ❑ **Long-term low-band obligations:** ~90–95% national coverage.
  
- ❑ **MENA benchmark:** staged rollout, fast urban launches, 50–85% national coverage in 3–5 years, 70–95% in 7–10 years.

# AGGREGATE (NATION-WIDE) COVERAGE TARGETS BY OPTION

Option	Year 1	Year 2	Year 3	Urban Year 3	Year 5
<b>Option 1</b> 3 baselines + 1 Nat. DSP+ 1 per Region	15%	35%	50%	65%	75%
<b>Option 2</b> 3 baselines + 2 Nat. DSPs	15%	35%	50%	65%	75%
<b>Option 3A</b> 3 baselines + 9 Nat. DSPs	20%	45%	65%	60%	90%
<b>Option 3B</b> 3 baselines + 9 Nat. DSPs	20%	45%	65%	60%	90%

# RESELLER ABSORPTION OBLIGATIONS

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- ❑ **Problem:** ~3,000 unlicensed resellers serve ~2× the legal subscriber base, covering most households not lawfully connected.
- ❑ **Objective:** Regularize service provision, protect consumers, and migrate reseller customers into licensed services.
- ❑ **Framework:** Obligations split between baseline operators (MIC1, MIC2, LT) and 9 DSPs.

# ALLOCATION OF ABSORPTION OBLIGATIONS (OPTION #3B)

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- ❑ **Baseline operators (MIC1, MIC2, LT):** absorb **15% each** → total **45%** of reseller customers.
- ❑ **DSPs (9 licensees):** absorb **55% collectively**.
- ❑ **Per DSP quota:**  $\sim 6.11\% \approx 50,000$  customers each.
- ❑ **Urban clusters:** voluntary competition, no mandated quotas.
- ❑ **Suburban/rural/underserved clusters:** mandatory absorption quotas.

# Thank You