5G in Cambodia the Current Status

17 October 2024

Makuhari Messe, Japan

Content

Overview

Cambodia flag

- Official name: **Kingdom of Cambodia**

- Land Area: **181,035 km²**

- Population: **17,6 million** (est. 2024)

- Most visiting place: **Angkor Wat (Siem Reap)**

- Location: **Southeast Asia**

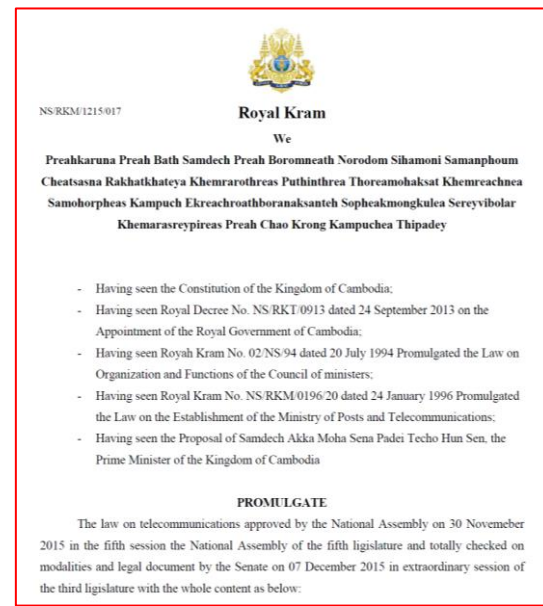- Join ITU: **1952 (CBG)**

- Domain name: **.KH**

Cambodia Map

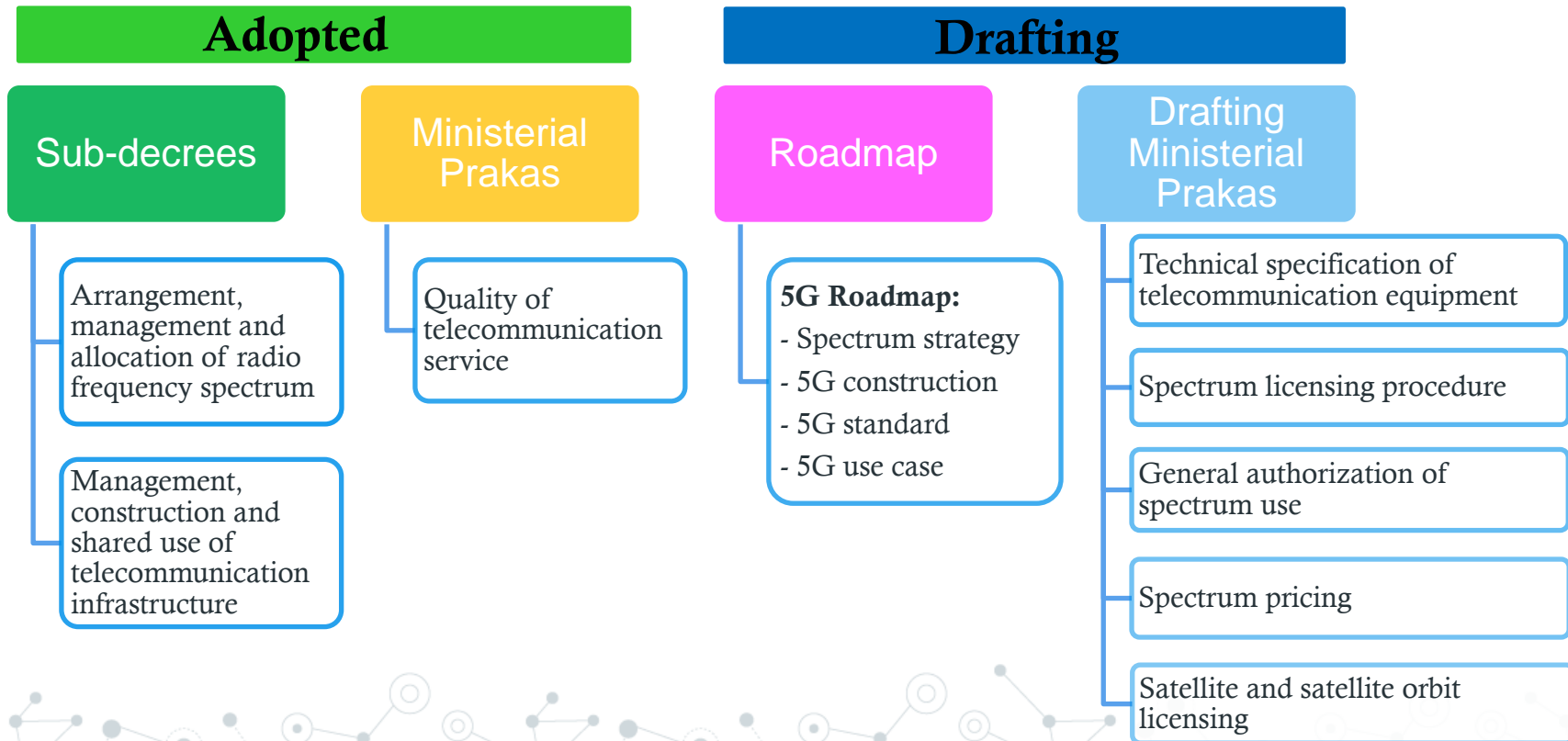# 2. Regulation and 5G Roadmap

*Law on Telecommunications:

- Adopted in 2015

- Regulating telecommunication industry

- Role of MPTC and TRC

- Foundation and principle for establishing regulations on licensing regime, spectrum, numbering plan, IP and domain name, QoS and…..

2. Regulation and 5G Roadmap (Cont)

Adopted

Drafting

Sub-decrees

- Arrangement, management and allocation of radio frequency spectrum

- Management, construction and shared use of telecommunication infrastructure

Ministerial Prakas

- Quality of telecommunication service

Roadmap

5G Roadmap:
- Spectrum strategy
- 5G construction
- 5G standard
- 5G use case

Drafting Ministerial Prakas

- Technical specification of telecommunication equipment

- Spectrum licensing procedure

- General authorization of spectrum use

- Spectrum pricing

- Satellite and satellite orbit licensing

3. 2G, 3G and 4G in Cambodia

Mobile subscriber

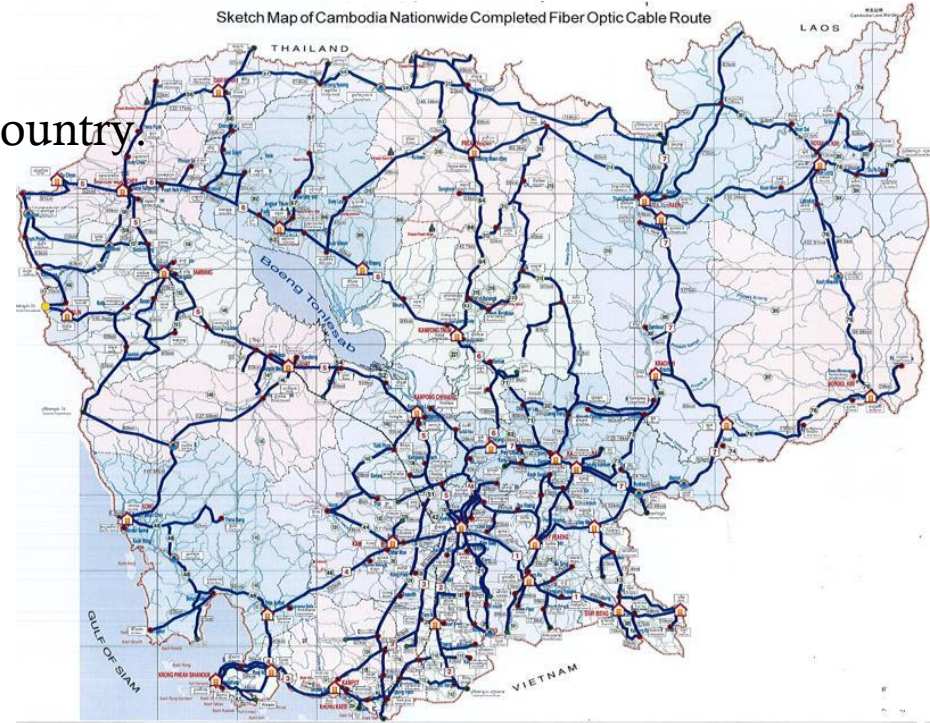| Mobile Operators	Active
CamGSM	3,648,017
Smart Axiata	8,210,254
Seatel	223,974
Viettel (Cambodia)	9,781,364
Total	21,863,609

*Data from TRC 2024

- 3G devices have minimal usage, representing only 0.35% of total devices due to the gradual shutdown of 3G network by operators.
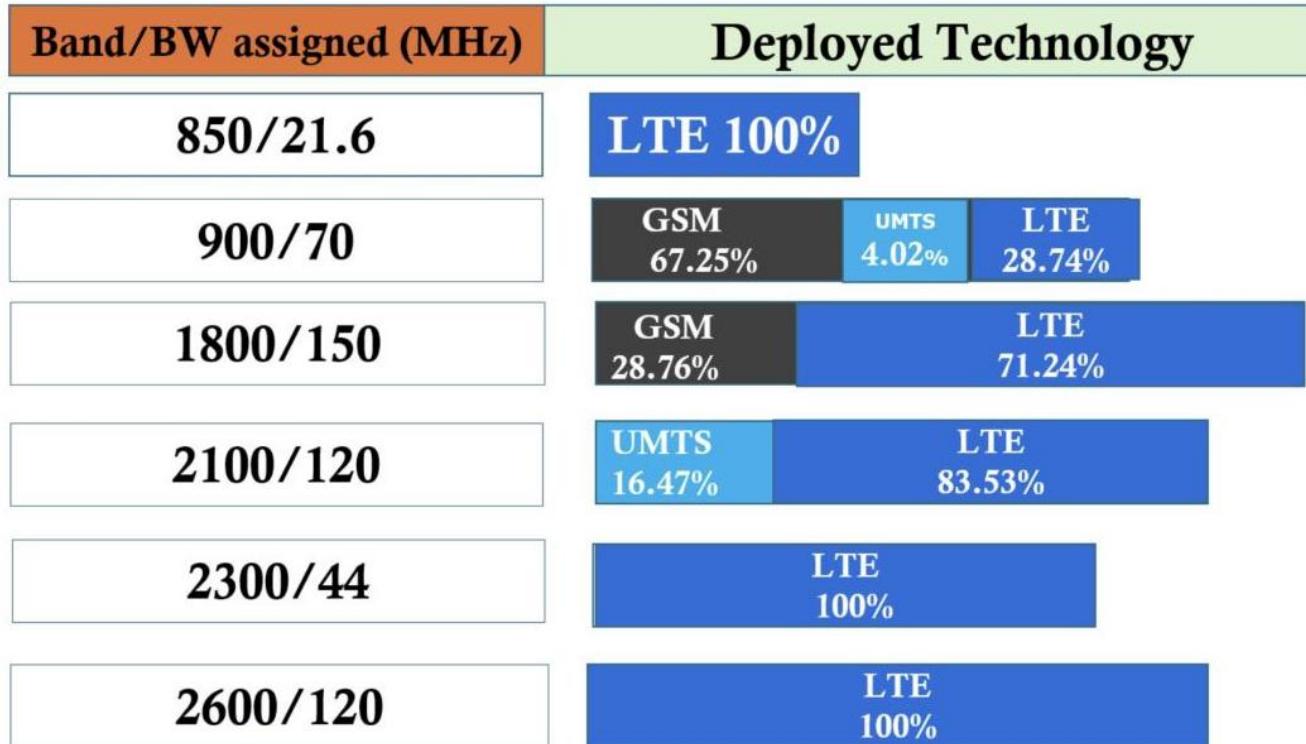
3. 2G, 3G and 4G in Cambodia (Cont)

Sketch Map of Cambodia Nationwide Completed Fiber Optic Cable Route

- The 12,841 BTS were deployed whole country.

- Provided coverage to the population

   a. 2G: 99.7%

   b. 3G: 70%

   c. 4G: 92.7%

Optical Cable	• 29,945 km

4. Spectrum Assignment

Band/BW assigned (MHz)	Deployed Technology
850/21.6	LTE 100%
900/70	GSM 67.25% / UMTS 4.02% / LTE 28.74%
1800/150	GSM 28.76% / LTE 71.24%
2100/120	UMTS 16.47% / LTE 83.53%
2300/44	LTE 100%
2600/120	LTE 100%

Total 525.6 MHz

5. Monitoring Equipment

System	Name (Manufacture, Model)	Maker (Year)	Frequency Range	Quantity
Fixed	A&D system: MD6672	2014	20 MHz-6 GHz	1
	R&S: DDF205	2015	20 MHz-3 GHz	1
Semi-Fixed	R&S: UMS300	2022	20 MHz-3 GHz	2
Mobile	R&S: DDF205	2015/2022	20 MHz-6 GHz	2
Potable	R&S: DDF007	2015/2022	9 kHz-7.5 GHz	5
	R&S: PR100		9 kHz-7.5 GHz	
	R&S: FSH20		9 kHz-20 GHz	
	R&S: FSH3		30 Mhz-3 GHz	
	R&S: PR200		8 kHz-8 GHz	

6. 5G for Cambodia

Low band	Mid band	mm wave
▪ 703-803 MHz ▪ BW: 100 MHz ▪ 1 block=2×15 MHz	▪ 3300-3600 MHz ▪ BW: 300 MHz ▪ 100 MHz/block	▪ 25.45/26.65 GHz ▪ BW: 1200 MHz ▪ 1 bock=2×400 MHz

- 6 GHz and 4.9 GHz is RF ecosystems and identify reserved band for 5G and beyond.

- Developing a plan to phase out 2G and 3G services using radio frequency band 3, 5, 7, 8, 38, and 40 to reallocate them for future 4G and 5G services.

6. 5G for Cambodia (Cont)

5G Rollout Strategy

Key Indicators	Description
First	Trial to be conducted and official launch in 2025
Second	Infrastructure and Network Deployment ▪ Coverage goal: 50% in 3 years ▪ Year 1: 500 5G BTS, 3 areas ▪ Year 2: 1500 BTS, coverage 30% of population ▪ Year 3 2500 BTS or coverage 50% of the population Extend coverage to at least 80% of population with low band
Third	A minimum download speed limited
Forth	Encourage the official implementation of pilot project across 5 priority sectors

6. 5G for Cambodia (Cont)

Spectrum Planning Strategy

Phase 1
- Spectrum planning 3300-3600 MHz
- Coordinating with neighboring countries
- Collaborating with MoInfo to coordinate with broadcasting operators and other satellite service
- Fully acquire the 700 MHz
- Developing a plan to phase out 2G and 3G services and reallocate spectrum for 4G
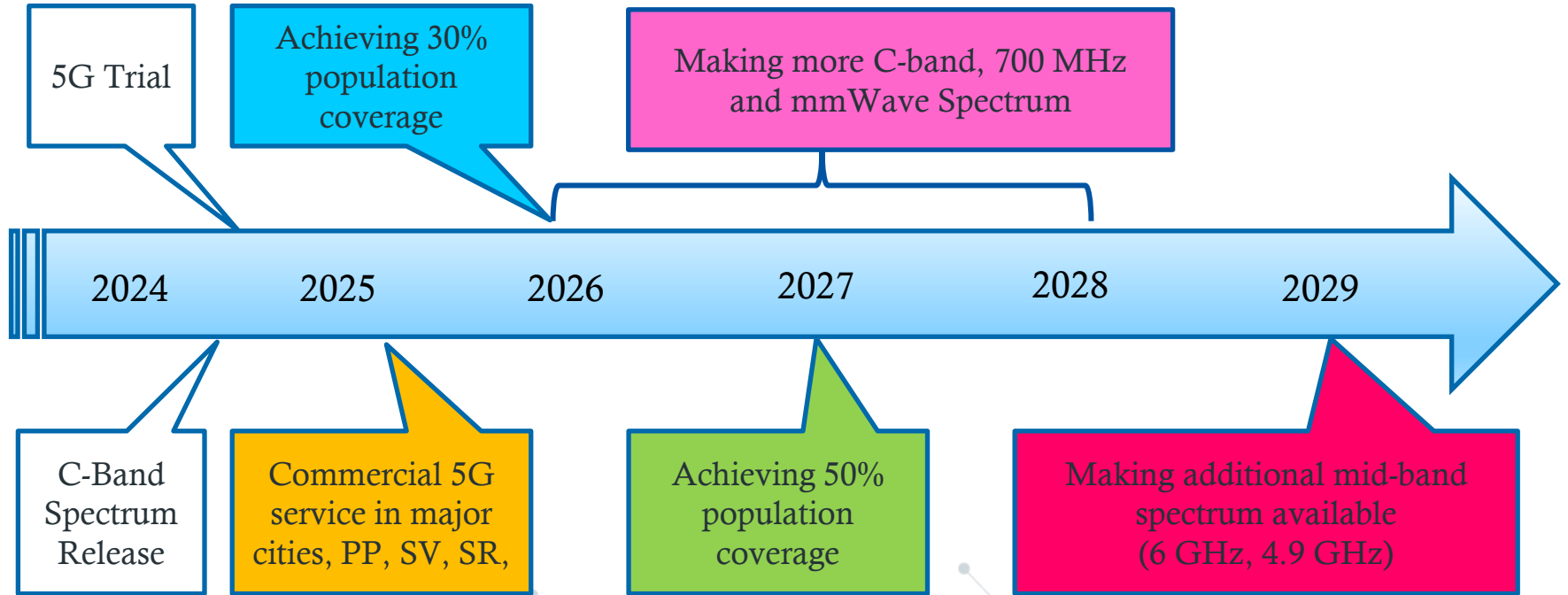
Phase 2
- Spectrum planning:
  - mid band; 3600-3700 MHz
  - mmWave; 25.45-26.65 GHz
  - low band; 703-803 MHz
- Evaluating the maturity of 6GHz and 4.9 GHz for phase 3.

Phase 3
- Developing a plan:
  Release mid frequency 6 GHz and 4.9 GHz

6. 5G for Cambodia (Cont)

Timeline of 5G deployment

2024	2025	2026	2027	2028	2029

5G Trial

Achieving 30% population coverage

Making more C-band, 700 MHz and mmWave Spectrum

C-Band Spectrum Release

Commercial 5G service in major cities, PP, SV, SR,

Achieving 50% population coverage

Making additional mid-band spectrum available (6 GHz, 4.9 GHz)

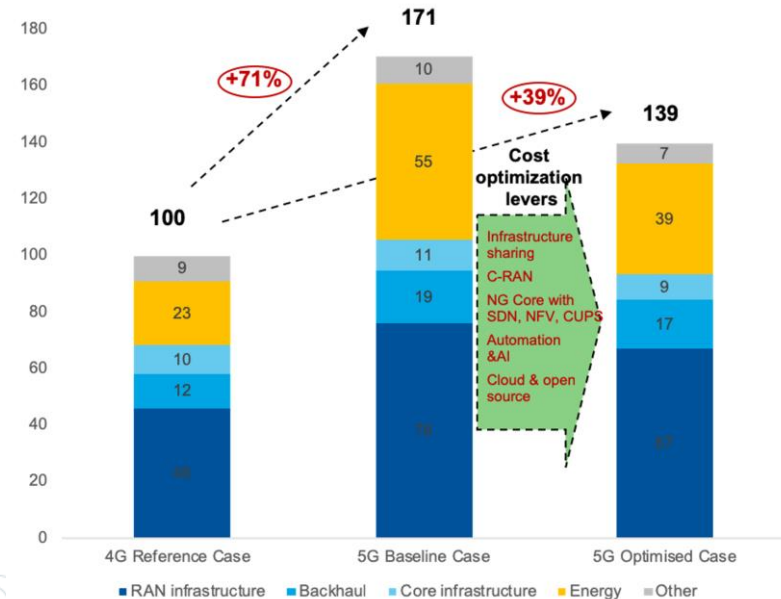# 7. Cooperation with Japan (Open Ran)

- GSMA 2020, 5G investments could increase by up to 71% compared to 4G investment if operator invest independently.

- The cost could decrease to 39% compared to 4G investments if operators share some telecommunications infrastructure.

O-Ran Technology (Trial)

- Testing: 4G Core network

- Frequency: B7 (10 MHz)

GSMA, 2019

8. 5G Use case in Cambodia

- Promoting the implementation of pilot projects focused on key sectors including industry, agriculture education, health, disaster management, transportation, energy, and other sectors as requested.

- Building 5G infrastructure in various industrial parks, along with training entrepreneurship and technologies knowledge.

- The possibility of creating applications based on 5G services to support government digital policies.

Thank you