

THE REGIONAL REGULATORY FORUM FOR EUROPE



AGENCY FOR ELECTRONIC  
COMMUNICATIONS

# 5G implementation in Macedonia

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27-28 September 2021

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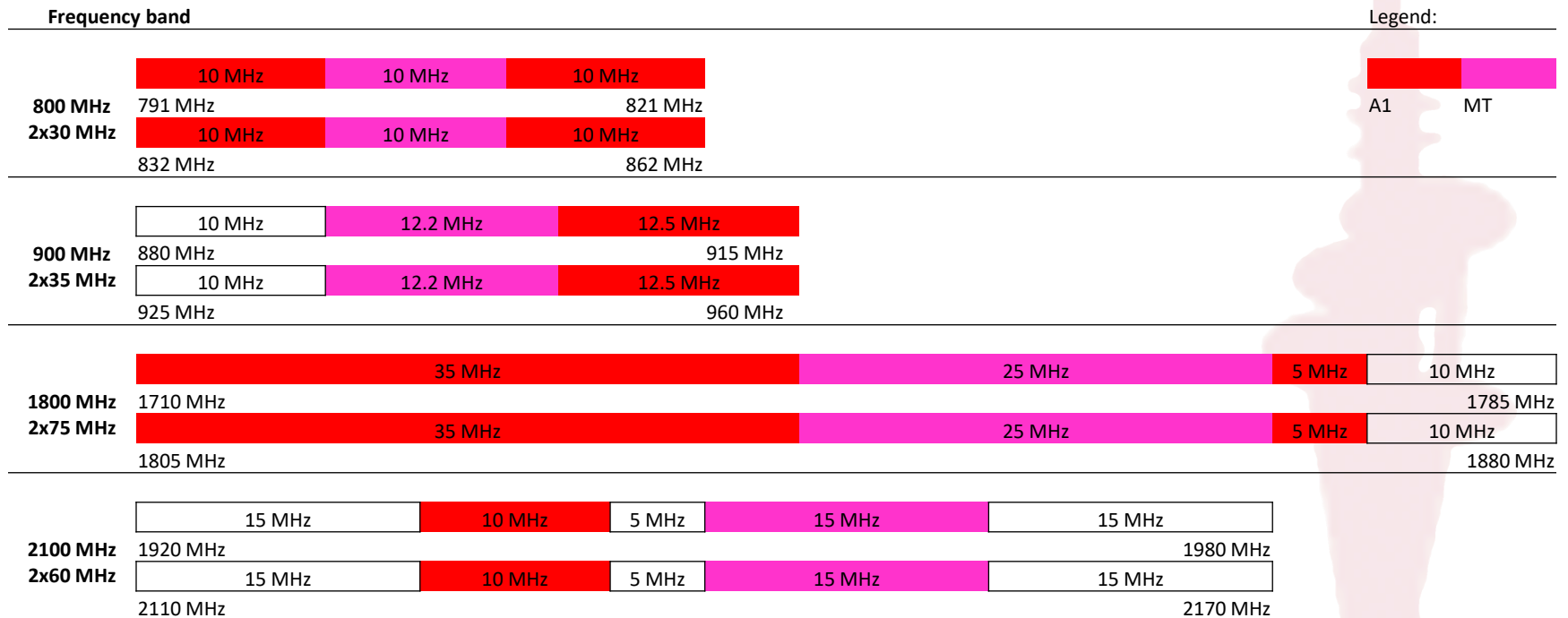
# Public consultation for 5G

- From 05.02 to 20.04.2020 public consultation for issuing frequency authorizations for 5G
- Received comments from the following interested parties: Intracom Telecom, NEOTEL, Makedonski Telekom, A1 Macedonia and EOLO S.p.A.

## Summary from the public consultation:

- There is no operator who is interested for all frequency bands
- There is no interest for 1500 MHz band, possible inclusion of 2100 MHz band
- Proposals for longer duration of licences (20 years)
- All operators support synchronisation of networks
- Call to stop the procedure for 5G received from the scared citizens due to fake news on the net

# 5G in assigned bands



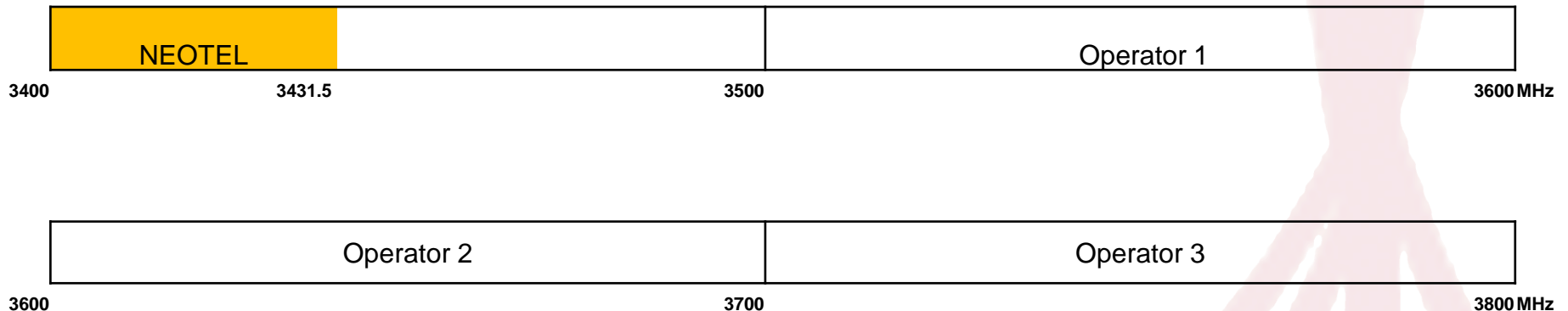
# New bands for 5G – 700 MHz

- December 2015 - South Europe Digital Dividend Implementation Forum- SEDDIF: re-planning of radiofrequency band allocated to broadcasting service (DVB-T: 470-790 MHz) with goal to free frequency band 694-790 MHz and it's allocation to the mobile service
- December 2017 – Multilateral Framework Agreement between members of SEDDIF and bilateral agreements with neighbours (except Albania)
- Change of National Frequency Allocation Table
- 2018-2020 – Meetings with DVB-T operators A1 and Public Enterprise National Broadcasting, preparation of migration plan and its execution (finished in February 2020)

694-703	703-708	708-713	713-718	718-723	723-728	728-733	733-738	738-743	743-748	748-753	753-758	758-763	763-768	768-773	773-778	778-783	783-788	788-791
Guard band	Uplink						Gap	SDL (A)				Downlink				Guard band		
9 MHz	30 MHz (6 blocks of 5 MHz)						5 MHz	20 MHz (zero up to 4 blocks of 5 MHz)				30 MHz (6 blocks of 5 MHz)				3 MHz		

# New bands for 5G – 3.x GHz

- March 2021 – Migration of the assigned spectrum to NEOTEL at the beginning of the band (from 3545-3576.5 MHz to 3400-3431.5 MHz)
- 3 Frequency authorisations for 100 MHz bandwidth for national coverage (3500-3800 MHz)
- Because of TDD mode, synchronisation of the networks is obligatory
- Frame A (»DDDSU«) from ECCREC(20)03



# New bands for 5G – 26 GHz

Available resources - 9 licences with 200 MHz bandwidth:

- 800 MHz in band: 24.3-25.1 GHz,
- 600 MHz in band: 25.5-26.1 GHz and
- 400 MHz band: 26.5-26.9 GHz).



# Intention for tender

On 01.06.2021 Agency announced its intention to conduct a public tender procedure with public bidding for issuance of a limited number of authorizations for use of radio frequencies. The intention states that the subject of the public tender are

- 2x30 MHz in frequency band 694-790 MHz,
- 300 MHz in frequency band 3400-3800 MHz and
- 800 MHz in frequency band 24.25-27.5 GHz.

During the public hearing that lasted until 05.07.2021, three letters of interest were received from interested parties, as follows:

- Bitstream Mobile (2x10MHz in 700 band and 100 MHz in 3.x)
- A1 Macedonia (2x20MHz in 700 band and 200 MHz in 3.x) and
- Makedonski Telekom (2x10MHz in 700 band and 100 MHz in 3.x)



# Tender conditions

## 700 MHz

License	Frequency band	Proposed one time fee
A1	703-713/758-768 MHz	3 000 000 EUR*
A2	713-723/768-778 MHz	6 000 000 EUR
A3	723-733/778-788 MHz	6 000 000 EUR

## 3.x GHz

License	Frequency band	Proposed one time fee
B1	3.5-3.6 GHz	1 500 000 EUR*
B2	3.6-3.7 GHz	3 000 000 EUR
B3	3.7-3.8 GHz	3 000 000 EUR

\*A1 and B1 licences will be reserved for new network operator

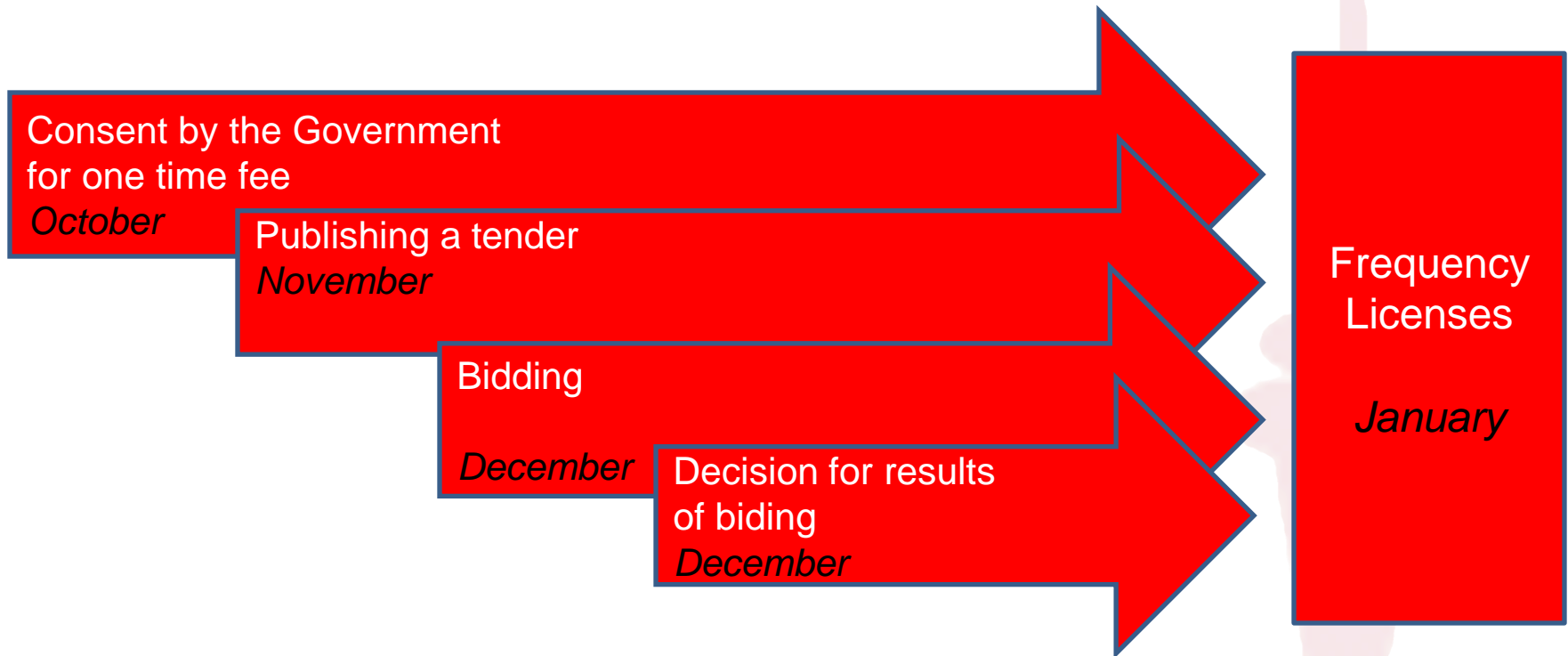
License duration 15+5 years

# Coverage obligations

According to National operational broadband plan the national broadband targets for Macedonia are as follows:

- By the end of 2023, at least one larger city to be covered with 5G signal.
- By the end of 2025, the main corridors in accordance with the Treaty establishing the Transport Community on the basic and comprehensive road network in the country should be covered with an uninterrupted 5G signal
- By the end of 2027, all towns in the country are covered with uninterrupted 5G signal.
- By the end of 2029, anyone can have the opportunity to access the internet through 5G with a minimum speed of internet access of at least 100 Mbps.

# Future activities



Thank you for attention