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Digital Decade and Connectivity
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RADIO SPECTRUM POLICY GROUP

PEER REVIEW

REPORT

(ed. February 2024)

Foreword

The following 3rd edition of the Peer Review Report results from the provisions of the Article 35 (8) of the Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Communications Code according to which indicates experiences and best practices collected on draft measures that fall within the scope of the comparative or competitive selection procedure pursuant to Article 55(2) and discussed by Member States and the European Commission through Peer Review Forums.

In the period covered by the 3rd Peer Review Report, i.e. January 1st – December 31st 2023, **8 Member States** (and EEA EFTA countries) have notified pursuant to Article 35(1) and 23(2) of the Code the RSPG about their intention to award spectrum in a frequency band harmonised for use at EU level in accordance with Decision No 676/2002/EC.

- **France (Reunion Island)**, 10th January – of the intention to undertake a selection procedure in order to reassign frequencies from frequency band 900 MHz
- **Sweden**, 26th January – of the intention to undertake a selection procedure in the 900 MHz, 2.1 GHz and 2.6 GHz bands
- **Belgium**, 23rd February – on the publication of draft measures regarding the granting of user rights of radio spectrum for which harmonised conditions have been laid down by means of technical implementing measures in conformity with Decision no. 676/2002/EC. Frequency bands reported: 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2600 MHz, 3600 MHz.
- **Poland**, 11th April – on the second public consultation regarding selection procedure (auction) in order to assign radio spectrum in 3400-3800 MHz band.
- **Austria**, 12th July – of the intention to undertake a selection procedure in order to assign radio spectrum in 3600 MHz (remaining frequencies) and the 26 GHz band for wireless electronic communications networks.
- **Latvia**, 1st September – of the intention to undertake a selection procedure in order to assign rights of use of spectrum band 3750 MHz-3800 MHz
- **Slovak Republic**, 23rd August – of the intention to undertake a selection procedure in order to reassign frequencies from frequency band 900 MHz and 2100 MHz
- **Bulgaria**, 27th October – on the assignment of the radio spectrum in the 700 MHz and 800 MHz

Five Member States made a notification under Article 35 of the European Electronic Communications Code without a request to convey a Peer Review Forum.

The following **three** Member States have requested a Peer Review Forum on the basis of Article 35 of the European Electronic Communications Code.:

- **Sweden**, 22th February – of the intention to undertake a selection procedure in the 900 MHz, 2.1 GHz and 2.6 GHz bands
- **Slovak Republic**, 14th September – of the intention to undertake a selection procedure in order to reassign frequencies from frequency band 900 MHz and 2100 MHz.
- **Austria**, 2nd October – of the intention to undertake a selection procedure in order to assign radio spectrum in 3600 MHz (remaining frequencies) and the 26 GHz band for wireless electronic communications networks.

In all of the above cases neither report according to the Article 35 (7) of the European Electronic Communications Code nor opinion according to the Article 35 (9) were requested by the Member States that asked to organize Peer Review Forum align with Article 35 (1) of the EEC. This Report takes into account the experiences and good practices raised during those Peer Review Forums.

Information provided by the Member States for the purpose of conducting Peer Review Forum.

I. SWEDEN

1. General information

Frequency band(s)

900 MHz, 2,1 GHz and 2,6 GHz

Type of award mechanism

Competitive selection procedure (auction)

Spectrum blocks and number of rights of use

- 880–915 and 925–960 MHz (900 MHz band): 6 FDD blocks in total, distributed in 3 different categories:
 - 1 2×5 MHz frequency specific block adjacent to the current GSM-R use below 880/925 MHz
 - 4 2×5 MHz frequency generic blocks
 - 1 2×10 MHz frequency generic block associated with a coverage obligation.
- 1920–1980 and 2110–2170 MHz (2,1 GHz band): 12 2×5 MHz frequency generic blocks.
- 2500–2690 MHz (2,6 GHz band): 18 blocks in total, distributed in 2 different categories
 - 14 2×5 MHz frequency generic FDD blocks
 - 4 10 MHz frequency generic TDD blocks

Upfront fee conditions (reserve prices, payment terms etc.)

50% of the auction fee was to be paid shortly after the decision had been made. The other half of the auction fee is to be paid at the end of 2025, before the licenses become valid for use per 2026. The spectrum licences which are awarded will be valid for use from 1 Jan. 2026 and onward.

Spectrum caps and holdings, spectrum reserve for new entrants

Spectrum caps:

- 2×20 MHz in the 900 MHz band.

- 120 MHz (FDD and/or TDD) in the 2,1 GHz and 2,6 GHz bands.

No spectrum reserved for new entrants

Eligibility and/or exclusion criteria if appropriate (in connection with Article 48(4) EECC)

A specific part of the open invitation procedure, where the applicants provide necessary information in order to be assessed whether radio usage associated with their networks can be assumed to have the potential to cause harm to Sweden's security.

Timeframe of the process

April-September 2023

Decision on the award of spectrum

September 2023

1. Licence conditions

Technology (incl. technical conditions, and coordination requirements, if applicable)

The licensee must comply with conditions according to the current coordination agreements between Sweden and other states. The licensee must also obtain consent from the Swedish Armed Forces when installing new transmitters and changing existing transmitters (e.g. changed technology, direction/tilt, power, channel width) in certain municipalities.

Geographical extent

Sweden

Access obligations (e.g. MVNO and resellers)

No

Coverage obligations (e.g. the specific requirements to be met)

In order to improve the current coverage, one frequency block of 2×10 MHz in the 900 MHz band is associated with coverage and infrastructure obligations. Additionally, in order to improve the possibility of connection for travellers on trains, licensees who win at least 40 MHz in the 2.1 GHz and/or 2.6 GHz bands (FDD and/or TDD) in the auction will have their licences associated with coverage and infrastructure obligations along high-traffic railways.

Spectrum sharing (incl. obligation to provide national roaming, if applicable)

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Other obligation(s) (e.g.-numbers of base station, quality of the service)

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Spectrum trading/leasing

Trading and leasing of (a part of) the spectrum licence is allowed but subject to prior approval by the PTS, according to the Swedish Act on electronic communications.

License duration

- 2026-2048 (900 MHz bands)
- 2026-2050 (2,1 GHz and 2,6 GHz bands)

Annual fees

Those who hold a licence to use radio transmitters shall pay an annual fee according to the Act on electronic communication. The amount of the fee can be found in PTS' regulations on fees and charges

2. Objectives

Promotes the development of the internal market, the cross-border provision of services, as well as competition, and maximises the benefits for the consumer, and overall achieves the objectives set in Articles 3, 45, 46 and 47 of EECC Directive, as well as in Decisions No 676/2002/EC and No 243/2012/EU

Coordination agreements in place

- Harmonised technical conditions allowing equipment currently available as well as further improved.
- Well-balanced protection criteria that ensure functionality for adjacent services
- Adequate spectrum caps
- Coverage and infrastructure obligations only where and when needed.

Ensures effective and efficient use of radio spectrum

Competitive selection procedure where the willingness to pay for spectrum is well reflected.

- Harmonised technical conditions allowing equipment currently available as well as further improved.
- Regulations for trade and lease in place.
- Sharing mechanism making complementary usage possible

Ensures stable and predictable investment conditions for existing and prospective radio spectrum users when deploying networks for the provision of electronic communications services which rely on radio spectrum

Harmonised technical conditions allowing equipment currently available as well as further improved.

- Licence duration longer than 20 years.

II. Slovak Republic

1. General information

Frequency band(s)

Band 900 MHz (880 – 915 MHz / 925 – 960 MHz) and Band 2100 MHz (1920 – 1980 MHz/ 2110 -2115 MHz) for national use

Type of award mechanism

Simple clock auction (SCA) with assignment phase for specific placement in the band. Two separate process /auction for band 900 MHz and 2100 MHz.

Spectrum blocks and number of rights of use

- Band 900 MHz – 7 duplex blocks
- Band 2100 MHz – 12 duplex blocks

Upfront fee conditions (reserve prices, payment terms etc.)

30% of reserve price.

For new operators deposit auction guarantee equivalent to 30% of reserve prices of at least 1 block in 900 MHz and 4 blocks of 2100 MHz spectrum which represents minimum nationwide frequency equipment of an efficient mobile network operator in Slovakia

Spectrum caps and holdings, spectrum reserve for new entrants

Band 900 MHz – 2 blocks

Band 2100 MHz – 4 blocks

Spectrum cap will increase by one if the spectrum is not sold

Eligibility and/or exclusion criteria if appropriate (in connection with Article 48(4) EECC)

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Timeframe of the process

Not yet determined.

Decision on the award of spectrum

Issue the license – Not yet determined.

2. Licence conditions

Technology (incl. technical conditions, and coordination requirements, if applicable)

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Geographical extent

Slovak Republic

Access obligations (e.g. MVNO and resellers)

- Wholesale offer
MNOs to provide a wholesale offer for MVNOs via spectrum auction limited just to auctioned frequencies (900 and 2100).
- National roaming for 900 MHz band
NR obligation applies to successful participant who obtains at least two auction blocks in the 900 MHz frequency band from 8/9/2026 to 31/12/2030. Applicant for NR – obtain frequencies from 900 MHz band, has no other frequencies below 1 GHz and fulfils the development criteria
- Operate the GSM/UMTS network (voluntary commitment) - necessary for e-call; toll collection; remote deduction of electricity. From 8/9/2026 until 31/12/2030

Coverage obligations (e.g. the specific requirements to be met)

- Band 900 MHz:
 - For existing users
 - Cover at least 95% population of Slovakia or built and operate at least 1500 base stations
 - Cover all highways, expressways and railways until 31/12/2030
 - If take voluntary commitment to GSM/UMTS cover at least 99% population of Slovakia or built and operate at least 1700 base stations
 - For new users
 - Cover at least 60% population of Slovakia or built and operate at least 600 base stations until 31/12/2027
 - Cover at least 80% population of Slovakia or built and operate at least 900 base stations until 31/12/2028
 - Cover at least 90% population of Slovakia or built and operate at least 600 base stations until 31/12/2029
 - Cover at least 95% population of Slovakia or built and operate at least 600 base stations until 31/12/2030
 - Cover all highways, expressways and railways until 31/12/2030
- Band 2100 MHz:

- Cover at least 60% population of Slovakia or built and operate at least 600 base stations in this band until 31/12/2028.

Spectrum sharing (incl. obligation to provide national roaming, if applicable)

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Other obligation(s) (e.g.-numbers of base station, quality of the service)

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Spectrum trading/leasing

Restriction of the transfer and lease of rights when the spectrum cap is exceeded.

License duration

From 8/9/2026 to 31/12/2045

Annual fees

Six instalments (first bank guarantee; The remaining part of the one-time payment is divided into five instalments in the same ratio – maturity until 31/12/2024; 31/12/2025; 31/12/2026; 31/12/2027 a 31/12/2028.

3. Objectives

Promotes the development of the internal market, the cross-border provision of services, as well as competition, and maximises the benefits for the consumer, and overall achieves the objectives set in Articles 3, 45, 46 and 47 of EECC Directive, as well as in Decisions No 676/2002/EC and No 243/2012/EU

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Ensures effective and efficient use of radio spectrum

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Ensures stable and predictable investment conditions for existing and prospective radio spectrum users when deploying networks for the provision of electronic communications services which rely on radio spectrum

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III. AUSTRIA

1. General information

Frequency band(s)

26 GHz (1.4 GHz award by means of an auction, 600 MHz for local use for campus licenses/private networks/industrial use assigned by an administrative procedure), and 3600 MHz (leftover regional spectrum from main award in 2019)

Type of award mechanism

Auction (ESMRA). Administrative procedure for campus licenses/private networks/industrial us

Spectrum blocks and number of rights of use

- 26 GHz:
 - LB1 25.5-25.9 GHz (nationwide, 400 MHz)
 - LA1-LA5 26.5-27.5 GHz (5 blocks of 200 MHz each, nationwide)
- 26 GHz:
 - 24.3-24.9 GHz: 3 blocks of 200 MHz for local use assigned by an administrative procedure based on a real estate licensing model
- 3600 MHz:
 - LC1 3410-3450 MHz (region A1u, 40 MHz)
 - LC2 3440-3450 MHz (region A1r, 10 MHz)
 - LC3 3410-3470 MHz (region A4u, 60 MHz)
 - LC4 3410-3470 MHz (region A4r, 60 MHz)
 - LC5 3410-3470 MHz (region A5u, 60 MHz)
 - LC6 3410-3470 MHz (region A5r, 60 MHz)
 - LC7 3460-3470 MHz (region A6u, 10 MHz)

Upfront fee conditions (reserve prices, payment terms etc.)

- 26 GHz:
 - LA1-LA5: EUR 1,900,000 each
 - LB1: EUR 3,800,000
- 3600 MHz:
 - LC1: EUR 1,357,500
 - LC2: EUR 98,000
 - LC3: EUR 247,000
 - LC4: EUR 290,500
 - LC5: EUR 161,000
 - LC6: EUR 126,500
 - LC7: EUR 50,000

Spectrum caps and holdings, spectrum reserve for new entrants

- 26 GHz:
 - Spectrum cap of 1000 MHz per bidder
- 3600 MHz: No spectrum caps for this award

Eligibility and/or exclusion criteria if appropriate (in connection with Article 48(4) EECC)

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Timeframe of the process

2019/2021: Consultations on market demand for 26 GHz
 2022 Q3: Consultation on award models and auction design
 2023 Q3: Consultation of tender document and auction rules
 2023 Q4: Publication tender document
 2024 Q1: Auction

Decision on the award of spectrum

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2. Licence conditions**Technology (incl. technical conditions, and coordination requirements, if applicable)**

- 3600 MHz: Technical arrangement on border coordination between neighbouring countries in force.
- 3600 MHz and 26 GHz: Certain protected areas (e.g. Satellite Earth Stations, military zones) defined in the tender.

Geographical extent

- 25.5-25.9 GHz: nationwide rights of use
- 26.5-27.5 GHz: nationwide rights of use
- 3600 MHz (leftover regional spectrum): regional rights of use
- 24.3-24.9 GHz: local licenses for campus networks/industrial use/private networks
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Access obligations (e.g. MVNO and resellers)

No access obligations

Coverage obligations (e.g. the specific requirements to be met)

- 25.5-25.9 GHz / 26.5-27.5 GHz:

If amount of awarded spectrum is = 200 MHz:

- 15 base stations until 2027
- 45 base stations until 2030
- 150 base stations until 2034

If amount of awarded spectrum \geq 400 MHz:

- 30 base stations until 2027
- 90 base stations until 203
- 300 base stations until 2034

- 3600 MHz and regions with > 10 MHz:
 - 5 additional base stations per awarded region within 5 years

Spectrum sharing (incl. obligation to provide national roaming, if applicable)

No spectrum sharing obligations

Other obligation(s) (e.g.-numbers of base station, quality of the service)

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Spectrum trading/leasing

Allowed according to § 20 Austrian Telecommunications Act

License duration

- 26 GHz:
 - 25.5 - 25.9 GHz: 1.1.2025 - 31.12.2046
 - 26.5 - 27.5 GHz: until 31.12.2046
- 3600 MHz: until 31.12.2039

Annual fees

Based on the telekom fee ordinance („Telekommunikationsgebührenverordnung – TKGV“)

3. Objectives

Promotes the development of the internal market, the cross-border provision of services, as well as competition, and maximises the benefits for the consumer, and overall achieves the objectives set in Articles 3, 45, 46 and 47 of EECC Directive, as well as in Decisions No 676/2002/EC and No 243/2012/EU

After the publication of a position paper on the subject of infrastructure sharing in 2018 and the award of spectrum in the 3410-3800 MHz range in 2019 and in the 700, 1500 and 2100 MHz ranges in 2020, the award of the unsold spectrum in the 3600 MHz range and spectrum in the 26 GHz range is a further contribution to the 5G expansion in Austria. The basis of every award is initially the specification of goals associated with the specific award by the regulatory authority (on the basis of legal provisions). In view of the specific properties of spectrum in the 3600 MHz band and in particular in the 26 GHz band (not suitable for widespread use, several conceivable business models, etc.), the regulatory authority determines in addition to the points legal certainty, ensuring/promoting effective competition and promoting coverage (the central award objective of the multi-band auction 2020), in particular the efficient use of spectrum and the promotion of innovation and business development as the focus of the award. Maximizing the revenue is explicitly not an award objective, nor actively promoting a newcomer.

Ensures effective and efficient use of radio spectrum

Spectrum is awarded by means of a market based procedure (competition on incremental spectrum).

- Build-out requirements and coverage obligations;
- Award of 2 GHz which allows operators and verticals to acquire sufficient spectrum;
- Liberal sharing framework (passive and active sharing).

Ensures stable and predictable investment conditions for existing and prospective radio spectrum users when deploying networks for the provision of electronic communications services which rely on radio spectrum

License duration of more than 20 years:

- Award of 2 GHz which allows operators and verticals sufficient spectrum
- Low reserve prices
- Flexible sharing framework
- Legal certainty

Additional information for the purpose of the Commission Recommendation (EU) 2020/1307 of 18 September 2020 on a common Union toolbox for reducing the cost of deploying very high capacity networks and ensuring timely and investment-friendly access to 5G radio spectrum, to foster connectivity in support of economic recovery from the COVID-19 crisis in the Union.

1. Promoting adequate reserve prices which reflect the minimum levels of fees for rights of use of radio spectrum.

The provision in the Austrian Telecommunications Act that regulates the reserve price stipulates that TKK is only allowed to set market price related reserve prices, if the expected market value for the spectrum is higher than the spectrum usage fee which is based on administrative cost.

In case TKK sets market price related reserve prices, TKK uses national and international benchmarks (adjusted to national circumstances). The reserve price has to be set on a rather conservative level (lower end of estimated market value). It may not exceed 50% of the lower limit of the market value.

2. Avoiding spectrum scarcity by ensuring the assignment of the full amount of radio spectrum harmonised at Union level.

2 GHz in the 26 GHz band as much as possible / double the size required by EECC / not possible to assign the full 26 GHz band / remaining spectrum 3.4 - 3,8 GHz.

3. Providing in a non discriminatory manner the possibility that fees for rights of use of radio spectrum are paid in instalments within the period of those rights.

TKG does not allow instalment payments.

- 4. Using an individual authorisation regime for the 24.25-27.5 GHz frequency band which promotes its timely use including, in particular, one that is based on fast-track administrative procedures when applied to geographically limited rights of use.**

600 MHz (24.3 - 24.9 GHz) will be assigned by a fast-track administrative procedure (real estate licensing model) for local use (campus networks/industrial use/private networks).

- 5. Combining financial incentives with obligations or formal commitments to accelerate or to expand high-quality wireless coverage.**

Reasonable coverage obligations in connection with moderate reserve prices.

- 6. Providing, subject to competition law, the possibility for the sharing of passive and active infrastructure, as well as for joint roll-out of infrastructure that relies on the use of radio spectrum.**

Active and passive infrastructure sharing is subject to competition law. According to § 85 Austrian Telecommunications Act active sharing has to be approved by Telekom-Control Commission (TKK).

Apart from that:

26 GHz: No restriction on infrastructure sharing.

3600 MHz leftover regional spectrum: Restriction on active sharing in the three biggest cities of Austria (Vienna, Graz und Linz).