

Coverage and competition with a "spectrum swap"

The Bundesnetzagentur facilitates the expansion of the existing mobile broadband networks and promotes competition. The current demand for spectrum is an argument against extending the usage rights and in favour of fair award proceedings. It is now up to market participants to improve their chances of access to the spectrum with a voluntary spectrum swap.

Challenge: coverage vs competition



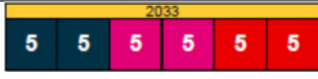
- The current **division into thirds of the 30 MHz of spectrum available at 800 MHz makes sense from a technical perspective** for LTE (= "broadband"). With less than 10 MHz of spectrum, the data rate would drop noticeably. Splitting the spectrum more does not make technical sense.
- **Comparable spectrum** is either already **assigned** (700 MHz and 900 MHz) or its availability has **not yet been cleared up** (eg in the UHF band).
- The spectrum is to be awarded in a fair and legally secure procedure. An auction currently seems the most suitable method.
- In a re-assignment, **one or more operators** may be **unsuccessful**. This could have serious consequences for the existing LTE coverage of the established mobile operators or for the market entry of 1&1, as they have all stated, and lead to a bidding war for the spectrum.
- The objective of the Bundesnetzagentur is to promote **both** mobile coverage **and** competition. To do this...
 - ...the existing LTE coverage should be secured;
 - ...1&1 and potential new entrants should have the opportunity to acquire spectrum below 1 GHz.

Proposed solution: "spectrum swap" followed by award

- The **subject of the proceedings will be changed**:
 - ...usage rights at 800 MHz would expire at the end of 2033 rather than at the end of 2025;
 - ...usage rights at 900 MHz would expire at the end of 2025 rather than at the end of 2033.
- The same amount of 900 MHz spectrum would be awarded instead of the 800 MHz.
- This could **relieve the demand situation**.
 - The existing LTE coverage at 800 MHz would be secured for the longer term.
 - The focus at 900 MHz is the provision of narrowband GSM services (voice/SMS). GSM can also be used effectively with less than 10 MHz. Another possibility would be the operation of a joint GSM network for Germany by all three established network operators.
 - 1&1 and potential new entrants would have the opportunity to acquire comparable spectrum in a fair process.
- The position paper is to consult on this.

Background information

- Various spectrum usage rights expire at the end of 2025. The **focus is on the 800 MHz spectrum**, the physical properties of which are particularly suitable for the network rollout. It has a long range around an antenna and provides good indoor coverage.
- 2 x 30 MHz will be available. This spectrum is currently split with one third each for the established network operators (2 x 10 MHz each). **In addition to these operators, 1&1 has also expressed interest.** This is an argument in favour of objective, transparent and non-discriminatory award proceedings rather than extending the usage rights.
- **Re-awarding the 800 MHz spectrum could lead to a new distribution of spectrum.** The market has highlighted the following **implications**.
 - The established operators have argued that 800 MHz has so far been used to provide country-wide LTE as a "basic layer" and losing the usage rights would lead to a worsening of coverage.
 - 1&1 has maintained that it needs the spectrum for its successful market entry, as the national roaming agreement it has secured with Telefónica is insufficient.
- The **current assignment situation** below 1 GHz is as follows:

Band	Assignment Situation	Expire date
900 MHz band		35 MHz (paired) expires end of 2033
800 MHz band		30 MHz (paired) expires end of 2025
700 MHz band		30 MHz (paired) expires end of 2033

NB: the 900 MHz band is 2 x 35 MHz (paired), somewhat broader than the 800 MHz band. Telekom won the additional block at auction, which it would keep in the event of a spectrum swap until its expiry at the end of 2033.

- The spectrum swap takes into consideration the fact that the **spectrum has different uses** for historical reasons.
 - The 900 MHz band has historically been used almost completely for GSM, although there are also regional broadband uses.
 - It is conceivable that the demand for GSM could be reduced to 5 MHz (paired) in each case. Negative consequences for users could be mitigated by shifting the GSM traffic to 4G or 5G.
 - Another possibility would be the operation of a joint GSM network for Germany by all three established network operators. This would enable the band to be used to a greater extent for mobile broadband.
 - The re-award of the 900 MHz spectrum could speed up the introduction of current broadband technology such as 4G or 5G in this band.

The different uses of 800 MHz and 900 MHz could lead to a lower assessment of the risk of loss of spectrum by the network operators → Clarifying this is an aim of the upcoming consultation on the position paper.

A swap with the 700 MHz spectrum is also in principle possible, but initial indications are that the 900 MHz spectrum seems to be more suitable. In any case, whether it is 900 MHz or 700 MHz, the Bundesnetzagentur will seek to follow a standardised approach.