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**Europeiskt digitalt mobiltelesystem, GSM —
Krav på tonbesked från ett GSM-nät till ett
allmänt tillgängligt telenät**

**European digital cellular telecommunications
system, GSM — Requirements on tone
messages sent from a GSM network
connected to a PSTN**

I detta dokument återges den svenska standarden SS 63 63 63
vilken finns enbart på engelska.

This document contains the Swedish Standard SS 63 63 63
which is available in English only.

European digital cellular telecommunications system, GSM — Requirements on tone messages sent from a GSM network connected to a PSTN

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1 Scope This standard covers requirements concerning tone messages to be sent by public land mobile networks (PLMNs) according to the paneuropean digital system, GSM, connected to a public switched telephone network (PSTN).

2 Reference The following standard contain requirements, which through reference constitute requirements of this standard. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent edition of the standard listed below.

Swedish standard:

SS 63 63 27 Telecommunications equipment – Private Branch Exchanges (PBXs) – Common technical requirements

3 General The tone messages permitted to be sent towards a PSTN are listed in section 4.1. No other tone messages may be sent towards a PSTN. The characteristics of those tones are specified in section 4.2. Tones that may be sent by a PSTN towards a PLMN are described in the Swedish standard SS 63 63 27, clauses 4.4–4.9.

Tones sent internally within a PLMN are not covered by this standard.

4 Tone messages

4.1 Sending tone messages to a PSTN

4.1.1 The requirements set forth below refer to the sending of tone messages to the PSTN. The levels indicated in the description of the tone messages refer to levels in the digital interface between the PLMN and a PSTN.

4.1.2 The ringing tone shall comply with the description provided in section 4.2.1.

4.1.3 A busy tone shall comply with the description provided in section 4.2.2.

4.1.4 A warning tone in connection with speech recording shall comply with the description provided in section 4.2.3.

4.1.5 A warning tone in connection with switching in the operator shall comply with the description provided in section 4.2.4.

4.1.6 A congestion tone shall comply with the description provided in section 4.2.5.

The sending of ringing tone is mandatory. The sending of tones indicated in sections 4.1.3 – 4.1.6 is optional.

4.2 Technical characteristics

4.2.1 Ringing tone

Meaning: A ringing signal or a call waiting tone is sent to the called party (or equivalent).

Character: First ringing tone, 300 – 600 ms

Intermittent tone, 1000 ± 100 ms tone, 5000 ± 500 ms pause.

A ringing tone shall be sent directly in connection with the receipt of a response from a mobile station being idle. This may be accomplished as follows:

- an intermittent tone is sent, initiated simultaneously with the ringing signal, or
- a separate first ringing tone as above is sent directly, and after that an intermittent tone is sent with an arbitrary phase step. In this case, a first ringing tone may coincide with an intermittent tone, resulting in a tone lasting about 1600 ms.

Frequency: 425 ± 15 Hz

Harmonics: Less than 5 %

Level: -10 dBm₀ ± 5 dB

4.2.2 Busy tone

Meaning: A called party (or equivalent) is busy.

Character: Intermittent tone, 250 ± 25 ms tone, 250 ± 25 ms pause.

Frequency: 425 ± 15 Hz

Harmonics: Less than 5 %

Level: -10 dBm₀ ± 5 dB

Note — The characteristics of the busy tone and the congestion tone according to this standard are opposite to those set forth in CCITT recommendations.

4.2.3 Warning tone in connection with speech recording

Meaning: A speech recording machine is switched in during the call.

Character: Intermittent tone, 400_{-100}^{+50} ms tone every 15 ± 3 s. The tone is superimposed on the call in progress.

Frequency: 1400 ± 21 Hz

Harmonics: Less than 5 %

Level: -30 dBm₀ ± 5 dB

4.2.4 Warning tone in connection with switching in the operator

Meaning: An operator is switched in during the call.

Character: Intermittent tone, 100 ± 10 ms tone, 1500 ± 150 ms pause.

Frequency: 1400 ± 21 Hz

Harmonics: Less than 5 %

Level: -30 dBm₀ ± 5 dB

4.2.5 Congestion tone

Meaning: A requested connection cannot or must not be established. A requested service is not accepted.

Character: Intermittent tone, 250 ± 25 ms tone, 750 ± 25 ms pause.

Frequency: 425 ± 15 Hz

Harmonics: Less than 5 %

Level: -10 dBm₀ ± 5 dB

Note — The characteristics of the busy tone and the congestion tone according to this standard are opposite to those set forth in CCITT recommendations.