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**ITS, Informationstekniska standardiseringen**

## SVENSK STANDARD SS 63 63 59

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### Europeiskt digitalt mobiltelesystem, GSM — Synkroniseringskrav för fysisk anslutning till Televerkets telefonnät

Anslutning till det allmänna telenätet har tidigare reglerats genom specifikationer från Televerket. Sedan den 1 juli 1992 sker reglering genom Telestyrelsen.

Telestyrelsens mandat och arbetssätt innebär hänvisning till internationell, europeisk och svensk standard.

Ett antal specifikationer från Televerket kommer därför att överföras till svensk standard.

I denna utgåva av standarden överförs televerksspecifikation 8211-A 303 oförändrad. I nästa utgåva kommer en granskning av det tekniska innehållet och en anpassning till redigeringsreglerna för svensk standard att ske.

### European digital cellular telecommunica- tions system, GSM — Synchronisation requirements for physical connection to the telephone network of "Televerket"

Connection to the public switched telephone network has formerly been regulated by specifications issued by "Televerket". Since July 1, 1992 "Telestyrelsen" is the Swedish regulating authority.

The mandate and way of working of "Telestyrelsen" implies references to International, European and Swedish standards.

Several specifications from "Televerket" will therefore be transferred to Swedish standards.

In this version of the standard the specification 8211-A 303 from "Televerket" is transferred unchanged. In the second version a review of the technical content and an adjustment to the editing rules for Swedish standards will be performed.





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**Synchronization requirements for public land mobile networks according to the paneuropean digital system, GSM, connected to the public switched telephone network.**

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### 1 ADOPTION DATE

This standard shall take effect 1991-03-01.

### 2 SCOPE

This standard covers synchronization requirements for public land mobile networks (PLMNs) according to the paneuropean digital system, GSM, connected to the public switched telephone network (PSTN).

Further, this standard provides information about the synchronization source of the public switched telephone network.

Note: This standard is provided in english only.

### 3 OTHER RELATED STANDARDS

CCITT Recommendations, Blue Book 1988:

- G.811 Timing requirements at the outputs of primary reference clocks suitable for plesiochronous operation of international digital links.
- G.812 Timing requirements at the outputs of slave clocks suitable for plesiochronous operation of international digital links.
- G.823 The control of jitter and wander within digital networks which are based on the 2048 kbit/s hierarchy.



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## 4 GENERAL

The PLMN shall be operating plesiochronously with primary reference standard (Cesiumstandard) accuracy or be synchronized to the PSTN, applying a master-slave arrangement where the PSTN is acting as master.

## 5 REQUIREMENTS FOR THE PUBLIC LANDMOBILE NETWORKS SYNCHRONIZATION

### 5.1 Plesiochronous operation

With the PLMN operating plesiochronously towards the PSTN, the PLMN clocks shall fulfil the requirements according to CCITT Recommendation G.811, with a long term frequency departure better than  $10^{-11}$ .

### 5.2 Synchronous operation

The clocks for synchronization of the PLMN to the PSTN, shall meet the requirements for slave clocks according to CCITT Recommendation G.812. In holdover operation, as stated in Rec. G.812, the clock requirements for local node clock shall be fulfilled.

## 6 CHARACTERISTICS OF THE SYNCHRONIZATION SOURCE FROM THE PUBLIC SWITCHED TELEPHONE NETWORK

The originating synchronization sources in the PSTN are primary reference standards (Cesiumstandards) fulfilling CCITT Rec.G.811.

Slave clock nodes in the PSTN connecting the PLMN are synchronized to a source traceable to a primary reference standard, and will be in accordance with the following requirements:

### Long term phase variations:

Ideal conditions: MRTIE better than the values stated in CCITT Rec. G.812, section 2.2.1.

Holdover mode: MRTIE better than the values stated in CCITT Rec. G.812, section 2.2.3 for local node clock.

Note: MRTIE=Maximum Relative Time Interval Error



## TVT-STANDARD

## SPECIFICATION

3(3)

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Long term frequency departure:

Normal conditions:  $df/f < 1 \cdot 10^{-11}$  according to CCITT Rec. G.811.

Holdover mode: better or in accordance with CCITT Rec. G.812, section 2.2.3 for local node clock.

These values apply for the actual clocks in the nodes (exchanges) and are also valid for the output from the exchange. Due to jitter and wander from the interconnecting transmission links, actual phase variations might exceed the above stated in the interconnection point. However, the jitter and wander will not exceed the values stated in CCITT Recommendation G.823.