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Technical Specification

**3rd Generation Partnership Project;
Technical Specification Group Services and System Aspects;
Network Identity and TimeZone (NITZ);
Service description;
Stage 1
(Release 16)**

Keywords
LTE, GSM, UMTS, addressing, stage 1

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Contents

Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

x the first digit:

1 presented to TSG for information;

2 presented to TSG for approval;

3 or greater indicates TSG approved document under change control.

y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

z the third digit is incremented when editorial only changes have been incorporated in the document.

1 Scope

The present document describes the feature Network Identity and Timezone (NITZ).

This feature provides the means for serving PLMNs to transfer current identity, time, Daylight Saving Time and the local timezone to Mobile Stations (MS)s, and for the MSs to store and use this information. This enhances roaming by permitting accurate indication of PLMN identities that are either newer than the Mobile Equipment (ME) or have changed their name since the ME was sold. Additionally time, Daylight Saving Time and timezone information can be utilised by MEs as desired.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1]   3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2]   3GPP TS 24.008: "Mobile radio interface layer 3 specification; Core Network Protocols - Stage 3".

[3]   3GPP TS 23.038: "Alphabets and Languages".

3 Definitions and abbreviations

In addition to the following definitions, abbreviations used in the present document are listed in 3GPP TR 21.905 [1].

NITZ	The feature Network Identity and Timezone as described in the present document.
UCS2	Universal Character Set 2
UT	Universal Time
LTZ	Local Time Zone, the offset from UT applying in that locality, including any adjustments for summer time, etc.
DST	Daylight Saving Time. Adjustment for summer time.

4 Description

The feature Network Identities and Timezone shall make it possible for a serving PLMN to transfer its current identity, universal time, DST and LTZ to MSs, and for the MS to store and use this information. Each one of these elements is optional. The feature significantly enhances roaming as it enables the accurate indication of network identities that are either newer than the ME or have changed their name since the ME was manufactured or sold. Additionally time and timezone information can be utilised by MEs as desired.

When using the default character set (see 3GPP TS 23.038 [3]), the serving PLMN shall make both a "short" and a "long" name available to the MS. As an alternative or, in addition, to the default character set, the serving PLMN can make a name available in UCS2. The MS shall be free to choose one of these names depending upon its own characteristics and/or limitations, such as those of its display.

   NOTE: Guidance is sought, particularly from non-European operators, as to whether long and short name is required in UCS2 format.

The Network Operator may change the network identity at any time. However the change of network identity need not force immediate transfer of information to the MS.

As a network option, it shall be possible to send universal time (UT) by the network. Time information shall include: Year, Month, Day, Hour, Minute, Second, Timezone and DST. The expected accuracy of the time information is in the order of minutes.

NOTE: Universal time indicates the time at which this information element (see 3GPP TS 24.008 [2]) may have been sent by the network. Thus it can be assumed that the accuracy of the time information when it arrives at the MS is usually within a couple minutes.

The serving PLMN shall make Local Time Zone (LTZ) available to the MS as an offset from Universal Time in units of 15 minutes.

When the LTZ is compensated for DST (summertime), the serving PLMN shall provide a DST parameter to indicate this. The adjustment for DST can be +1h or +2h.

For PLMNs which cover more than one timezone, it is assumed that the Network Operator will arrange for boundaries between subsets of the PLMN service area to be approximately aligned with timezone boundaries. When an MS changes Local Time Zone the PLMN is not required to immediately transfer new time zone information. Similarly the PLMN will transfer the LTZ changes arising from summer/winter adjustments when convenient to the network operator.

The MS will implement the new time zone information at an appropriate time following receipt.

The information passed to MSs supporting the NITZ feature is controlled by the serving PLMN Operator through administrative interaction. The interface necessary to support this administrative interaction is outside the scope of the present document.

5 Applicability

Network Identity and Timezone is both an optional network feature and an optional MS feature.

The NITZ feature is not intended to replace the existing method of PLMN Indication, nor is it intended to discharge the administration and maintenance of the associated MoU Permanent Document, SE13.

6 Normal procedure

6.1 Transfer of NITZ information

Network name, time, DST and timezone information can be transferred from the serving PLMN to the MS:

1) Upon registering on the network.

2) When the MS geographically relocates to a different Local Time Zone.

3) When the network changes its Local Time Zone, e.g. between summer and winter time.

4) When the network changes its identity.

5) At any time during a signalling connection with mobile station.

Transfer of relevant information shall not unduly consume scarce network resources.

6.2 Use of NITZ information

Relevant information shall be presented to the MS user at the earliest opportunity.

It is expected that the MS will display the most up to date information transferred to it.

Switching off the MS should not cause the updated name of the network(s) to be deleted.

Removal of the SIM/USIM should not cause the updated name of the network(s) to be deleted.

However, the number of different network identities retained in the ME is a manufacturer issue.

Usage of time information in MS is a ME manufacturer issue. For example, time information can be utilised to time stamp transactions for logging purposes.

Annex A (informative): Change history

								Change history			
TSG SA#	SA Doc.	SA1 Doc	Spec	CR	Rev	Rel	Cat	Subject/Comment	Old	New	Work Item
June 1999			GSM 02.42					Transferred to 3GPP SA1	8.0.0		
SA#04			22.042							3.0.0	
SA#05			22.042	001				Editorial update of references for GSM/3GPP use.	3.0.0	3.0.1	
SP-11	SP-010065	S1-010258	22.042			Rel-4		Transferred to 3GPP Release 4	3.0.1	4.0.0	
SP-15	SP-020045	S1-020457	22.042	003	-	Rel-4	F	Editorial CR to correct terms and references	4.0.0	4.1.0	TEI
SP-16	SP-020267	S1-021043	22.042			Rel-5		Updated from Rel-4 to Rel5	4.1.0	5.0.0	
SP-20	SP-030241	S1-030378	22.042	005	-	Rel-5	A	Alignment of TS 22.042 (NITZ) with implementation in TS 24.008	5.0.0	5.1.0	TEI5
SP-26	SP-040744	S1-040997	22.042			Rel-6		Updated from Rel-5 to Rel-6	5.1.0	6.0.0	
SP-36			22.042			Rel-7		Updated from Rel-6 to Rel-7	6.0.0	7.0.0	
SP-42	-	-				Rel-8		Updated from Rel-7 to Rel-8	7.0.0	8.0.0	
SP-46	-	-	-	-	-	-	-	Updated to Rel-9 by MCC	8.0.0	9.0.0	
2011-03	-	-	-	-	-	-	-	Update to Rel-10 version (MCC)	9.0.0	10.0.0	
2012-09	-	-	-	-	-	-	-	Update to Rel-11 version (MCC)	10.0.0	11.0.0	
2014-10	-	-	-	-	-	-	-	Update to Rel-12 version (MCC)	11.0.0	12.0.0	
2015-12								Update to Rel-13 version (MCC)	12.0.0	13.0.0	
2017-03	-	-	-	-	-	-	-	Updated to Rel-14 by MCC	13.0.0	14.0.0	
2018-06	-	-	-	-	-	-	-	Updated to Rel-15 by MCC	14.0.0	15.0.0	
SA#88e	-	-	-	-	-	-	-	Updated to Rel-16 by MCC	15.0.0	16.0.0	