INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

E.213

TELEPHONE NETWORK AND ISDN

OPERATION, NUMBERING, ROUTING AND MOBILE SERVICE

TELEPHONE AND ISDN NUMBERING PLAN FOR LAND MOBILE STATIONS IN PUBLIC LAND MOBILE NETWORKS (PLMN)

ITU-T Recommendation E.213

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation E.213 was published in Fascicle II.2 of the *Blue Book*. This file is an extract from the *Blue Book*. While the presentation and layout of the text might be slightly different from the *Blue Book* version, the contents of the file are identical to the *Blue Book* version and copyright conditions remain unchanged (see below).

2 In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

Recommendation E.213

TELEPHONE AND ISDN NUMBERING PLAN FOR LAND MOBILE STATIONS IN PUBLIC LAND MOBILE NETWORKS (PLMN)

1 Basic requirements

1.1 It should in principle be possible for any subscriber of the international telephone network or ISDN to call any subscriber of a public land mobile network.

Note – Other constraints may exist (e.g., charging constraints) so that this condition cannot be met in practice.

1.2 The numbering should be composed in such a way as to allow standard telephone or ISDN charging and accounting principles to be used.

1.3 It should be possible for each Administration to develop its own independent numbering plan for mobile stations.

1.4 The numbering plan should not prohibit the development of interconnected public land mobile networks to form service areas as defined in Recommendation Q.70.

1.5 It should be possible to change the international mobile station identity (see Recommendation E.212) without changing the telephone or ISDN number allocated to the station and vice versa.

1.6 It should be possible, in principle, for mobile subscribers to roam without constraints among PLMNs.

1.7 The numbering plan should take into account human factors such as the compatibility with user dialling procedures for the most predominant network in each country, i.e. the public switched telephone network (PSTN), and the compatibility between adjacent countries as well.

1.8 Different numbers may be allocated for interconnection with other types of networks than the PSTN [e.g., PDNs] in order to meet specific numbering requirements within these networks.

2 National (significant) mobile number

The national (significant) mobile number could have the following form depending upon the way in which the land mobile numbering plan is integrated with the telephone numbering or ISDN plan:

i) The land mobile numbering plan might be fully integrated with the telephone numbering or ISDN plan. In this case the mobile stations will be allocated a *subscriber number* as defined in Recommendation E.160, § 5. The *national* (significant)*mobile number* then consists of the *trunk code* or *national destination code* allocated to the numbering area corresponding to the home area of the mobile station followed by the *subscriber number* allocated to it.

ii) The public land mobile network might be regarded as a separate numbering area within the telephone network or the ISDN. In this case the national (significant) mobile number will consist of the *trunk code* or *national destination code* allocated to the PLMN and the *subscriber number* within the PLMN.

3 Mobile station roaming number

3.1 *The mobile station roaming number* is a number allocated to a land mobile station for the purpose of rerouting calls to that station when it has roamed out of the area covered by the PLMN [maritime switching centre MSC)] in which the station is permanently registered.

3.2 The composition of the mobile station roaming number may vary depending upon where the mobile station is temporarily located and depending upon the method by which it is allocated.

3.3 One acceptable method for allocating mobile station roaming numbers is for the foreign PLMN (i.e. the network in which the mobile station is currently located) to allocate a temporary national (significant) mobile number to the visiting mobile station within its own numbering plan. The mobile station roaming number would thus have the following composition:

(country code of the country in which the foreign PLMN is located)[1] + (temporary national (significant) mobile number).

The mobile station roaming number is transferred to the home PLMN of the mobile station.

Note - A second method has been identified where the foreign PLMN uses a separate numbering plan for visiting mobile stations where the number used is composed of a prefix indicating a foreign station followed by the country code of the country in which the station is permanently registered and the national (significant) mobile number in its home network.

The home PLMN of the mobile station must in this case inform the foreign PLMN about the mobile station roaming number.

The possible use of this method requires further study considering that it may impose a requirement for digit capacity greater than 12 digits for the PSTN or 15 digits for the ISDN.

3.4 It may be advantageous (but it is not obligatory) for the roaming number to be kept secret from both the fixed and/or mobile subscriber. In this situation, the number would only be used within PLMNs and the PSTN/ISDN for rerouting of calls to a mobile station that had registered with a visited PLMN. The number would then not be used for direct routing of a call from a fixed (or mobile) subscriber to the mobile station.

3.5 This approach would allow the reallocation to another mobile station of the roaming number as soon as the station to which the roaming number had been originally allocated had left the visited PLMN. It will of course be desirable for a call to the roaming number, originating from an ordinary subscriber, to be rejected by the visited PLMN. In order to achieve this rejection the necessary signalling facilities and mechanisms at the mobile switching centres will need to be provided.

3.6 The implementation of the above approach, of barring the roaming number to fixed and/or mobile subscribers, should be a matter of bilateral agreement.

4 Number analysis

In respect to routing, charging and accounting, the requirements on number analysis given in Recommendation E.163 for the PSTN and Recommendation E.164 for the ISDN should also be met for calls to mobile stations.

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1) May not be required in all cases, e.g. the two PLMNs are located in the same country or in an area with an integrated numbering plan.