3GPP TSG CN Plenary Meeting #12
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Agenda item:	5.1
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3GPP TSG CN WG1 Meeting #17
Puerto Rico, 14th - 18th May 2001

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TO [1]:   TSGN Plenary

Cc:

WI: TEI

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Attachments: [None]
(Please list documents numbers to be attached)

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CN1 was asked to study how the addition of new Mobile Country Code (MCC) would impact the operation of the system. The matter was discussed in CN1 #17 and the following scenarios were identified:

1.   Using a new MCC in a country where none was used before
This can happen when a new political country is formed but it applies to all cases where a new MCC is allocated to a country which for one or another reason did not use an MCC code before. For a mobile which is registered in a PLMN under any other MCC the new PLMNs under the new MCC will be considered to be abroad. In this scenario this will be true. So allocating an MCC to the new country causes no problems in UMTS system.

2.   Using a new MCC in a country where at least one MCC is already in use
The use of additional MCC code(s) to a country which already has got at least one MCC will effect the operation of mobiles which have been manufactured before the addition. The following points were identified:

- **National roaming:** Periodic HPLMN search is mandatory when roaming in home country. As the old mobiles will not know that the new MCC is in the same country as the old MCC(s) of that country, they will not perform HPLMN search when it would be needed as the new MCC will be assumed to be abroad, which in this case will not be true. Periodic HPLMN search is defined already in GSM Phase 2+ Release 96 (GSM 03.22 v. 4.b.0 / 4.4.3.3)
  The consequence of this is that these old mobiles will not return to the HPLMN until they lose coverage from the network with the new MCC code.
- **Background scan of higher priority PLMNs:** When mobiles are roaming they perform the mandatory background scan of higher priority PLMNs in the same country. Any Mobile Network Code (MNC) will be ignored by the old mobiles if it is associated with the new MCC as it will be assumed to be in a different country. Background scan is defined for the first time in R99 specification (TS 03.22 v.3.6.0 / 4.4.3.3)
  The consequence of this is the old mobiles will not move to the higher priority PLMN until they lose coverage from the network with the new MCC code.

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[1] Please write any action required from the groups in a clear way.

CN1 is aware that there are several countries to which multiple MCC codes have been allocated. But the only specified case on support of multiple MCC in one specific area corresponds to North America. This case has been explicitly covered by specific exception handling for Country Codes in range of 310 to 316 which has been defined in GSM 03.22 from R'98 onwards.

Deletion of an existing MCC was also discussed briefly and that has got no side effect on the system behaviour.

To keep an homogeneous behaviour of all terminals (legacy ones and new ones supporting a potential evolution of MCC meaning) before and after a PLMN starts using new MCC in area where one MCC was already in use, it will be necessary to update all legacy terminals.