



ECC Recommendation (17)02

Harmonised European Management and Assignment
Principles for Geographic E.212 Mobile Network Codes
(MNCs)

Approved 31 May 2017

INTRODUCTION

ITU-T Recommendation E.212 was developed to define a unique international identification plan for public fixed and mobile networks providing users with access to public telecommunication services. The Recommendation describes a unique and unambiguous identification plan for subscriptions and the format of the International Mobile Subscription Identity¹ (IMSI). It also sets out the principles, criteria and procedures for the assignment and reclamation of E.212 Mobile Country Codes (MCC) and their respective Mobile Network Codes (MNCs).

Initially, the assignment of MNCs under geographic MCCs (“geographic MNCs”) was limited to public networks offering public telecommunications services as they were regarded as the only stakeholders in the value chain with a justifiable need for MNCs to facilitate authentication, roaming, billing and routing of their customers. As a result of this legacy view on the assignment of geographic MNCs, some CEPT member countries currently assign geographic MNCs according to strict criteria, whereby the applicant must either operate its own Radio Access Network (RAN) on radio frequencies that are suitable for the different generations of mobile technologies, or have its own infrastructure (Home Local Register (HLR) and other network elements) and a contractual agreement that allows access to a RAN operated by an Mobile Network Operator (MNO). A revised ITU-T Recommendation E.212 was approved on 23 September 2016 which introduces flexibility regarding the assignment of MNCs to entities other than public networks offering public telecommunications services. Such assignments are to be made according to procedures and criteria established by the national numbering plan administrator.

As business models have evolved as demonstrated in ECC Report 212 “Evolution in the Use of E.212 Mobile Network Codes”, there is an increasing demand for MNCs from entities other than public networks offering public telecommunications services. Informational Annex 1 contains a non-exhaustive list of potential applicants for geographic MNCs. One of the reasons for assigning an MNC to these entities is that it can create flexibility and less disruption if a change to the underlying network operator is required as there is no need to change the SIM profile for connected devices.

One of the conclusions of ECC Report 212 stated that:

CEPT countries should review the assignment criteria for E.212 Mobile Network Codes (MNCs) and consider introducing more flexibility regarding the assignment of MNCs for:

- a) *Traditional market players such as Mobile Virtual Network Operator (MVNOs), Mobile Virtual Network Enabler (MVNEs) and Resellers;*
- b) *Emerging business models such as M2M service providers and SMS Service Providers.’*

The purpose of this Recommendation is to harmonise the management and assignment principles for geographic MNCs to provide regulatory certainty for entities providing services for which there exists a justifiable requirement for the assignment of a geographic MNC. A harmonised approach is also needed to minimise the risk of regulatory shopping. Regulatory shopping is one issue that can arise where prospective applicants for numbering resources choose the regulator and regulatory regime which suits them best. If management and assignment principles diverge in the different countries prospective applicants may seek resources in the countries with a more flexible regulatory regime.

This Recommendation is cognisant that appropriate solutions for facilitating demand for geographic MNCs can be found so that competition and service innovation can continue to be facilitated while avoiding exhaustion of MNCs.

¹ The IMSI is a string of decimal digits, up to a maximum length of 15 digits, which identifies a unique subscription. The IMSI consists of three fields: the Mobile Country Code (MCC), the Mobile Network Code (MNC), and the mobile subscription identification number (MSIN).

ECC RECOMMENDATION OF 17(02) ON HARMONISED EUROPEAN MANAGEMENT AND ASSIGNMENT PRINCIPLES FOR GEOGRAPHIC E.212 MOBILE NETWORK CODES

“The European Conference of Postal and Telecommunications Administrations,

considering

- a) the September 2016 revisions to ITU-T Recommendation E.212 “The international identification plan for public networks and subscriptions” introduce flexibility in the assignment of MNCs to entities other than public networks offering public telecommunications services;
- b) that, as a result of technology and service innovation, the value chain now contains different entities than those who operate their own networks with or without access to spectrum. Informational Annex 1 contains a non-exhaustive list of potential applicants for geographic MNCs;
- c) that geographic MNCs are required to enable interconnection with mobile networks for certain services;
- d) that the majority of the existing geographic MNCs are not yet assigned which may represent an opportunity cost;
- e) that broadening the circle of market entities which are eligible for an assignment of geographic MNCs may lead to a scarcity of the resource and may also lead to new demand for other numbering resources. This is particularly relevant when broadening the circle to entities not providing publicly available electronic communications services;
- f) that Over-the-Air (OTA) provisioning is expected to provide a solution to enable operator switching without the need to physically change SIM cards. However, entities may still need an assignment of a geographic MNC for applications and business models that need these types of identifiers;
- g) that IMSIs are a public resource. The assignment of any portion of an IMSI (i.e., MNC, MSIN) does not imply ownership of the resource;
- h) the shared use of MNCs, via allocating different MSIN blocks to multiple entities under a single assigned MNC is technically feasible and can be a viable option in some cases;
- i) that harmonised management and assignment principles are required in order to maximise effective and efficient use of this resource in CEPT countries;
- j) that MNCs under the shared MCC 90x series are assigned by the Telecommunications Standardisation Bureau of the ITU-T (ITU-T TSB) for global services. The management and assignment principles for the shared MCC 90x series are a matter for the TSB and are outside of the scope of this Recommendation.

recommends

that CEPT administrations, when setting management and assignment principles for geographic MNCs take account of the following high level principles:

1. geographic MNCs are to be managed and assigned to permit the most effective and efficient use of a finite resource in order to defer, as long as is practicable, the need to request an additional MCC from the ITU-T TSB.
2. assignments of geographic MNCs are to be made according to procedures and criteria established by the national numbering plan administrator.
3. for services to be provided in more than one country, excluding mobile roaming services, an applicant for a geographic MNC should, as an alternative, be encouraged to consider applying to the ITU-T TSB for the assignment of an MNC under a shared MCC in the 90x series to avoid the need for multiple assignments of MNCs under different geographic MCCs.
4. applicants for geographic MNCs should be required to:
 - provide substantiating documentation justifying their need for the resource which also describes the network, services and/or functions that the resource will be used for;
 - affirm that the network, services and/or functions comply with applicable standards (ITU-T, ETSI, 3GPP etc.);
 - provide justification that other numbering solutions fail to meet requirements for specific services
5. geographic MNCs may be allocated for testing purposes or assigned on a temporary basis for testing purposes.
6. the shared use of MNCs should be considered as a viable option in particular in the case of entities not providing publicly available electronic communication services.”

ANNEX 1: EXAMPLES OF POTENTIAL APPLICANTS FOR MNCS (INFORMATIVE)

Assignments of geographic MNCs are to be made according to procedures and criteria established by the national numbering plan administrator. The following non-exhaustive list provides examples of entities that may have an interest in a geographic MNC assignment:

1. Mobile Network Operators (MNO);
2. Full or light Mobile Virtual Network Operators/Enablers/Aggregators (MVNO/MVNE/MVNA);
3. Entities with identification or authentication requirements in public networks, comprising providers of services with a public interest and providers of M2M/IoT services (e.g. GSM-R, eCall, smart metering, connected cars);
4. Public electronic communication service providers with interoperability requirements;
5. Entities for testing purposes.