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COMMENTS ON DRAFT ECC REPORT 274 "REGULATORY ANALYSIS OF OVER-THE-AIR PROVISIONING OF E.212 AND E.118 RESOURCES INCLUDING ITS IMPACT ON NUMBER PORTABILITY"

Sources

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(1) The European Telecommunications Network Operators' Association (ETNO) represents 40 major companies, which provide electronic communications networks over fixed, mobile or personal communications systems across 35 countries. ETNO is Europe's leading trade association for telecoms. More information about ETNO can be found at: www.etno.eu

1. General Comments

ETNO welcomes the opportunity to comment on Draft ECC Report 274 "Regulatory Analysis of Over-The-Air Provisioning of E.212 and E.118 Resources including its impact on Number Portability"

1.1 ETNO's general view

ETNO appreciates ECC's intent to investigate the regulatory consequences of OTA provisioning on SIM and operator switching in general, However, as the report also acknowledges, part of the work is still on-going, and some of the claims made in the text seem premature or unsubstantiated.

In particular, ETNO believes that the Report should not prejudge the discussions presently ongoing in ITU-T Study Group 2 on the revision of Recommendation E.118: these discussions have just started, the issues are complex in nature and the studies have long to reach their conclusions.

In addition, it is in ETNO's view that the Report should take into consideration that the role of mobile operators, regarding number portability and switching, remains unaltered in an "over-the-air" provisioning environment. The operators maintain their usual responsibilities. Therefore, ETNO questions the need for "new" forms of regulations that would be specific to new technical functions (such as subscription managers, etc.) are inappropriate and premature.

In general, remote provisioning is just a different technique to ensure „switching the SIM card“ during the number portability and switching procedure, which remain in charge of mobile recipient operators. The eSIM remote configuration only means that the operators will have to make the necessary arrangements and agreements, in order to make the provision work correctly.

As regards the Conclusions of the Report, see the specific comments below:

Chapter 4:

- ‘’For M2M-applications the E.164 number is normally not visible and sometimes only used for billing and operational purposes. This suggests that the reasons for keeping the E.164 number when changing operator are rather limited. On the other hand NP is a well-established process for which the incremental costs for porting M2M-numbers in surplus of voice E.164 numbers are rather low.“

We agree that, as indicated also in chapter 6, there should be a possibility for NRAs to make exemptions from NP obligations to assignee for specific numbering ranges in certain cases.

Indeed, M2M numbers do not have the value and meaning for the customers that they have in the case of voice telephony or messaging, since they are not linked to their identities. Customers are indifferent to the numbers associated to M2M terminals. Therefore, changing them does not pose any problem in order to switch the service provider. It does not generate any barrier that affects their possibilities of choice and, therefore, has no impact on competitive dynamics.

However, we do not agree with the statement according to which the cost for porting M2M-numbers would be rather low. With no information to support such a claim, it is premature to conclude that the introduction of NP for M2M would be “*rather low*”. M2M services can be implemented on different service platforms compared to regular mobile services, the M2M services have also different number length. ETNO refutes the term as it has no “absolute meaning” (What is the definition of “low” / ‘’high’’ cost? Does a cost need to be considered ‘’Low’’ compared to M2M ARPU, to a P2P service ARPU, others….?); especially when the same report refers to NP changes being necessary to accommodate new IINs. Most mobile NP infrastructures are also country specific and surely costs (of yet-to-be-determined nature…) would vary from one country to another. For these and other reasons, it cannot be concluded that the cost for the introduction of NP for M2M numbers would be low.

It is necessary to take into account that the provision of portability for M2M numbers, which could involve millions of numbers for a single customer request, could not be manageable with the existing portability process and system and, without concrete advantage for customers,

create new impact and increase cost for systems used to manage portability, both the internal ones of the operators, and the national NP databases/systems.

In addition to that, the non-relevance of the NP obligation for M2M services is strengthened by the fact that that there are no end users in such cases, but only devices or sensors distributed throughout a territory.

Moreover, in the case of extra-territorial use of E.164 numbers (e.g. numbers assigned to authorized entities in country A for use in a foreign country B), NP, being a national obligation, is applicable only between operators in country A; but the numbers are used extra-territorially for end users in country B. As a consequence, the NP concrete applicability is complex or not manageable. That should be considered and highlighted in the new regulation.

Chapter 6:

- Page 21: "The M2M-user that purchases a connectivity service from a M2M service provider and incorporates it into a product and sells the product to an end-user does not necessarily imply that the M2M-user becomes a provider of an electronic communication service."

In the analysis, it is considered that the M2M user does not necessarily become a provider of an electronic communication service. However, this is not totally excluded. If this would be the case, the customer of the electronic communication service offered by the M2M user, could also request to switch provider. This case should not be excluded beforehand and should also be analysed. E.g. an M2M user could offer an electronic communication service via the M2M service to end-users, those end-users should have the possibility to switch provider. The end-user right to switch could also be relevant in this scenario.

Chapter 7:

- ~~**The eligibility criteria defined in ITU Recommendation E.118 should be reviewed so that not only Operating Agencies are eligible for an assignment of E.118 numbering resources**~~.

  ETNO considers that this is an open question of the on-going work on E.118, various opinions have been expressed and the need for the proposed change described in the sentence. In ETNO's opinion it is better to eliminate references to activities on Recommendation E.118 which are at present ongoing in ITU-T

SG2 and where no conclusions are available yet. At least it should be reformulated to avoid taking any position on the final conclusion e.g. it is currently investigated whether there is a need to review the ITU recommendation.

- **National Regulators Authorities (NRAs) should take into account that even if new functions are introduced into the ecosystem with the introduction of remote provisioning, the operators remain in charge of the correct provision of the eSIM in the Number Portability and switching process. No further entities are relevant. The subscription manager function needs to be performed by an entity that treats all market players equally in order to avoid operator lock-in of the end-user or of Mobile Virtual Network Operator (MVNOs).**

  In ETNO's opinion there is the need to highlight the unaltered role of mobile recipient operators as regards the update of the SIM information during the number portability and switching process, even in an "over-the-air" provisioning environment rather than a physical replacement. So new forms of regulations specific to new technical functions are inappropriate.

- **NRAs should analyse the need to review their NP processes to ~~include~~ allow new potential scenarios identified in this report and to verify the possible necessity of data exchange between donor and recipient operators, like the fact the eUICC has to be updated remotely.**
  It is indeed a good suggestion to analyse the potential impact of the remote provisioning of the eUICC on the technical and operational processes for NP.

  However, it seems premature to conclude in the framework of this document the firm need to change the current NP process. It is also premature to conclude the need of data exchange between donor and recipient operator. This can only be concluded after detailed analysis of the technical and operational processes by the operators based on the processes applicable at national level. The modifications of the NP process are not a goal as such. The focus should be rather on checking if the compatibility is guaranteed with remote provisioning. Possibly no change or only a limited change of the NP process is required.

  In the same way the NP process should be investigated with regards the NP request validation, at the end of a subscription, the return of a number in the opposite direction. It is premature to conclude that these processes should be modified.

  It should be considered that the remote provisioning is just a different technology to ensure the SIM swap during the NP and switching process, which are in charge of the mobile recipient operators.

  It should be taken into account also that the NP process has to be compatible in parallel both for a scenario with remote provisioning of the eUICC as well as at the same time for the current scenario with a physical SIM replacement. This aspect is not considered in the current version of the document.

- ~~**In reviewing the NP process, it should be noted that the procedure for changing service provider could be similar whether the E.164 number is being changed or retained**~~.

  There is a contradiction in this sentence as the NP ("number" portability) process is meant to keep the number when changing service provider. Therefore reviewing the NP process where the E.164 number is changed, is contradictory and not related to NP "Number Portability".

In principle, however –a nd we believe this is the intent of the sentence – there is no need to link the process to change operator with the NP process, these are two different processes.

ETNO understands it would be better to eliminate the sentence, since either there is NP or there is a switching based on new numbers.

In the case of switching, there is a change of number.

There is no immediate need to install a process in case the numbers are not ported and new numbers are implemented. In that case, the new operator is free to manage the OTA provisioning of the eSIM independent of the old operator.

The process consists of a simple cessation by the old operator and reactivation at the new operator with a new number; the fact of having to configure an eSIM only means that the new operators will have to make the necessary implementations and agreements to change the eSIM configuration. In principle the new operator independent of the old operator can drive the process as it is the case today.

- **Furthermore, existing processes could potentially need to be reviewed, and potentially new processes introduced, in order to ensure that:**

  In ETNO's opinion it is premature to conclude that existing processes need to be reviewed.

  - **The update of NP databases and the remote update of the eUICC, in the case that NP data is also needed for the service, is synchronised by the involved operators. ~~The use of any characteristic or feature (e.g. SIM locking) that may limit synchronisation should be carefully evaluated and possibly avoided~~.**

    In ETNO's opinion, it is too early to conclude that there is a need for additional synchronisation on the NP process due to eSIM OTA provisioning.

    The remote provisioning is just a different technology to ensure changing the SIM in a NP and switching process that remain in charge of mobile recipient operators; the fact of having to configure an eSIM remotely only means that the mobile recipient operators will have to make the necessary implementations and agreements, in order to make the provision work correctly.

  - **Current methods of ensuring that end-users (and M2M-users) are not switched to another provider against their will should be re-evaluated with the introduction of remote provisioning also taking into account M2M services**.

    In case of Number Portability or in case where the customer switches operator with new E.164 numbers, it is important that in both processes there is a guarantee for the end-user not to be changed to another provider against its will. This risk is inherent to the remote provisioning of the eSIM. Therefore, it can occur in both cases.

  - ~~**Methods of communications with end-users during the switching process need to be reviewed as, for example with M2M, an SMS to a device can no longer be considered as a communications with the M2M user**~~.

    In ETNO's opinion, it would be better to eliminate this sentence as the customer, in the M2M case, is the entity who has signed the contract for the provision of the service with the operator, for all his devices, and therefore the communication will be destined to that entity.

    In general, methods of communication to the end-user need to be evaluated in the new context but it is premature to state that the communication will definitely have to change. We agree that this should be investigated, but it is too early to make any conclusions.

Further technical comments are included in the following table.

2. Proposals related to the ECC Deliverables

[Note: proponents are invited to use the following table to provide comments. It is also possible to provide as an annex the proposals with track changes and related justifications.]

Comment number	Section number/ Clause	Paragraph Figure/ Table	Type of comment (General/ Technical / Editorial)	COMMENTS	Proposed change
XX/1	**0 EXECUTIVE SUMMARY**	**Last paragraph on conclusions**	General	See ETNO General Comments above.	**See the specific changes proposed above in ETNO' General View.**
XX/2	**2.**	**2nd paragraph**	General	It is suggested to eliminate the sentence in brackets since the definition of the EID is reflected and under the review of 3GPP specifications, and it is not under the review of Recommendation E.118.	With traditional SIM cards, the ICCID identifies the physical hardware and it is possible to have multiple profiles in one SIM card which have different IMSIs. This is illustrated on the left hand side of **Error! Reference source not found.** below. With the eUICC, the GSMA specification introduces a new identifier **~~(not reflected in the present version of ITU-T Rec. E.118)~~** called the embedded Universal Integrated Circuit Card IDentifier (EID).
XX/3	**2.1**	**6th**	General	It is better to add, for the sake of clarity,	ITU-T Recommendation E.118 is based on the International

		paragraph		the last sentence: "It has to be underlined that ITU-T Recommendation E.118 is independent of the new ISO/IEC format since the MIT 89 is allocated to ITU-T E.118, as specified in the ISO standard itself."	Organization for Standardization (ISO/IEC) 7812-1 standard **Error! Reference source not found.** In January 2017 this standard was amended and the length of the Issuer identification number was increased from 6 to 8 digits. As can be seen in **Error! Reference source not found.** above, the present ITU-T Recommendation E.118 has defined a maximum length of 7 digits for the Issuer identification number. **It has to be underlined that ITU-T Recommendation E.118 is independent of the new ISO/IEC format since the MIT 89 is allocated to ITU-T E.118, as specified in the ISO standard itself**.
XX/4	**2.1**	**7th paragraph**	General	It is better to delete the sentence since Study Group 2 has decided NOT to start a review of Recommendation E.118 to determine the impact of the change to the ISO standard, and a Liaison Statement underlining this fact was sent to ISO/IEC in November.	In ITU-T Study Group 2, a discussion has started ~~**on a possible review of Recommendation E.118 to determine the impact of the change to the ISO standard and**~~ to investigate possible changes to the eligibility criteria so that not only OAs may receive an assignment of E.118 numbering resources.
XX/5	**2.3**	**1st paragraph**	General	It is better to add the reference 5 and 6 and to clarify that EID is also used for the discovery Service for P2P.	The EID uniquely identifies the eUICC and is defined in the GSMA Remote Provisioning Architecture for Embedded UICC - Technical Specification [4**, 5, 6**] and ETSI TS 103 383 [10]. This identifier is set by the eUICC manufacturer and the present specification foresees that it does not change during the operational life of the eUICC. The EID is used as a key by a function called the Subscription Manager - Secure Routing (SM-SR) to identify eUICCs in its database **[4]. EID for consumer (P2P) is used for the discovery service etc.** The EID shall be protected from unauthorised modification.

XX/6	**2.3**	**3rd paragraph**	General	It is better to delete the sentence stricken through since the structure of the EID conforms with the revised ISO/IEC 7812-1 standard only for the fact that the CC and IIN are both 3 digits fixed length, but already considering their left-padding with zeros, as appropriate, based on their respective values specified in E.118.	The GSMA Remote Provisioning Architecture for eUICC - Technical Specification **Error! Reference source not found.** specifies that the **CC and** IIN shall be assigned based on what is specified in ITU-T Recommendation E.118 **(including left-padding with zeros, as appropriate to obtain a 3-digit fixed length for each).** ~~**The structure of the EID already conforms with the revised ISO/IEC 7812-1 standard**~~.
XX/7	**3.3.**	**Figure 7: System Architecture**	General	The shown figure is outdated (phase 1). Listed in the reference is already phase 2 (specified early 2017) including the components SM-DS and LDS.	
XX/8	**3.3.3**	**1st paragraph**	General	As an important example the operator push should be added	Several procedures are specified for controlling the profile management procedures. The following list gives examples of some procedures that may be activated by the end-user: ▪ Profile download with activation code; ▪ Add **(download)** profile with activation code **and by operator push** ▪ Enable profile; ▪ Disable profile; and ▪ Delete profile.
XX/9	**4.1**	**2nd paragraph**	General	It is better to delete the sentence strikethrough since these are scenarios to be verified and no estimates of preventive costs can be made. M2M solutions can be implemented on a	For M2M-applications the E.164 number is normally not visible and sometimes only used for billing and operational purposes. This suggests that the reasons for keeping the E.164 number when changing operator are rather limited. ~~**On the other hand NP is a well-established process for which the incremental costs for porting M2M numbers in surplus of voice E.164 numbers are**~~

				totally different platform and solutions compared to that from the P2P solutions. It is not possible to make a general conclusion that the incremental costs are low to introduce number portability for M2M numbers. We agree that there should be an exception made by the regulator in the number portability obligations for M2M services. The extra territorial use of numbers in the M2M context should be taken into account in this context.	~~**rather low.**~~
XX/10	**4.3**	**2nd paragraph**	General	It is better to delete the sentence strikethrough since it is just an example, and will be covered by the agreements between operators. The NP process should in principle not change, further analysis should confirm this. Today there is a specific moment in the NP process to change the SIM card physically. At that moment the mobile recipient operator is responsible to start the eSIM OTA provisioning process.	~~**After the NP validation process is concluded, the donor operator will receive an "NP-Execute" message. The donor operator will then deactivate the user's service and send the "NP-Ready" message to the recipient operator. An "NP-Broadcast" message will then be sent to all operators so that they can update their routing tables. The user will notice that service is no longer available and must then replace the existing SIM card with the new SIM card provided by the recipient operator**~~.
XX/11	**4.3**	**4th paragraph**	General	It is better to delete the sentence strikethrough since it is just an example, and will be covered by the agreements between operators.	~~**This implies that the SIM card profile update process must start when the "NP-Ready" message is received from the donor operator and the "NP-Broadcast" message must be synchronised with the SIM card profile update process.**~~

				The NP process should in principle not change. Today there is a specific moment in the NP process to change the SIM card physically. At that moment the mobile recipient operator is responsible to start the eSIM OTA provisioning process. It should be taken into account that the NP process should function with physical SIM replacement and with eSIM OTA provisioning at the same time.	
XX/12	**5**	**Table 2**	General	Wrong Link	A: See section **~~56~~**.1 B: See section **~~56~~**.2
XX/13	**5.2**	**NA**	General	It is suggested to remove the complete clause 5.2 since it is just a normal scenario of cessation and new activation.	**~~5.2 Scenario B: Switching the operator of an M2M-user while changing the E.164 number where the E.164 number range was assigned to the operator~~**
XX/14	**7. Conclusion**	**Last paragraph on conclusions**	General	See ETNO General Comments above.	**See the specific changes proposed above in ETNO' General View.**

About ETNO

ETNO (European Telecommunications Network Operators' Association) represents Europe's telecommunications network operators and is the principal policy group for European e-communications network operators. ETNO's primary purpose is to promote a positive policy environment allowing the EU telecommunications sector to deliver best quality services to consumers and businesses.