Source: **Nokia**

Title: **IMEI coding change**

Document for: **Discussion**

Agenda Item:

Attached: ARIB IMEI AdHoc letter to N1 and N4

Overview

The current IMEI message structure is proposed to be changed to allow use of hexadecimal coding in addition of current BCD. The change is proposed in 3GPP TSG-CN,TSG-S, TSG-T and TSG-R to allow 16.7 million mobile terminals to be produced with one Type Approval Code - Final Assembly Code combination. The current restriction for one million units per TAC-FAC pair is already a problem in the GSM terminal manufacturing and can only be predicted to worsen in the future. Altogether, the total new IMEI space would be 720 times larger than the current space.

Change to use hexadecimal coding is the simplest solution since it does not affect to existing message lengths in GSM air interface and network interfaces.

Discussion

In the transition time there is a backward compatibility problem. Indeed, the mobile may have a new format IMEI which is not accepted (or understood) by the network.

CN groups will take care of how the network indicates to the mobile that it is capable of receiving a new format IMEI. It is essential that this indication mechanism can be included already into R99 specifications. This requires that all relevant groups handle this matter as soon as possible. For S3 this means that it has to be confirmed that the transition to hexadecimal IMEIs does not introduce security problems. This confirmation should be communicated to N1 and N4 already from S3#13 meeting in Yokohama.

In the case where a new terminal with a genuinely hexadecimal IMEI is used in an "old" network the terminal has to use some other IMEI value instead. This "default IMEI" must be a value which is shared with other terminals. This implies that the default value cannot be blacklisted and there exists a potential security problem.

Proposal

We propose that the new format IMEI is included in R99 and later release specifications (both GSM and 3G). On the other hand, a suitable date is agreed before which all networks have had enough time to be updated to accept the new format IMEI values.

Prior to this date no terminal can have an IMEI with genuine hexadecimal symbols.

After the date IMEIs with genuine hexadecimal symbols can be used in terminals. There exists a fixed default IMEI value which is sent from those terminals in the case the network cannot receive the real unique IMEI.

The option of sending the default value can be dropped in a suitable later release when it is clear that all networks are updated to accept the new format IMEI values.

Attachment : ARIB IMEI AdHoc letter to N1 and N4

From: "Stephen Hayes (EUS)" <EUSSRH@am1.ericsson.se>

To: Shun-ichiro.Nagareda@yrp.mci.mei.co.jp

Subject: FW: IMEI number in 3GPP

Date: Tue, 9 May 2000 04:30:28 -0500

MIME-Version: 1.0

Dear Shun-ichiro, Please find below the request sent to N1 and N4.

Regards, Stephen

Dear Colleagues,

Please find below a correspondence from ARIB regarding the need for IMEI expansion.

I note also that this discussion seems to have already started in N4.

One of our goals is to prevent regional variations. This requires that the partner organizations allow the solutions to be developed in 3GPP and that the 3GPP be responsive to regional needs. I therefore urge N1 and N4 to address this issue in as timely a manner as possible with the goal of agreeing on a solution by CN#8.

If a solution can be found by CN#8, then we can take a plenary decision as to which release it is part of.

Regards, Stephen Hayes

TSG-CN Chair

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-----Original Message-----

From: Shun-ichiro.Nagareda@yrp.mci.mei.co.jp

[mailto:Shun-ichiro.Nagareda@yrp.mci.mei.co.jp]

Sent: Monday, May 08, 2000 11:26 PM

To: stephen.hayes@ericsson.com

Cc: Stephen Hayes (EUS)

Subject: IMEI number in 3GPP

To: TSG Core Network Chairman Stephen Hayes

From: Chairman of IMEI Adhoc in ARIB , Shun-ichiro Nagareda

Date: May 9, 2000

Regarding: IMEI number in 3GPP

Dear Mr. Hayes,

For the last few months, IMEI Adhoc members in ARIB have been conducting an in-depth study of the IMEI number in 3G. So far the study has concluded that there are IMEI number administration and number structure problems that Japan first, and ultimately all 3GPP members will face.

Regarding IMEI number structure, if 3G continues to use the current structure, we think that there is a LACK OF SERIAL NUMBERS FOR 3G TERMINALS.

As you might know, in the current IMEI number structure there are six (6) digits reserved to represent the serial number of the terminal. This limits the number of same-model terminals that can be manufactured in the same factory to 1 million. Shortages of this number already exist in 2G, i.e., GSM markets. The temporary solution that has been adopted in 2G markets is to have a new Final Assembly Code (FAC) when a factory reaches the 1-million mark. However, FAC numbers are also in shortage, making this arrangement a short term solution for 2G. Based on the large terminal volumes predicted for 3G, there is a need to change IMEI number to cope with it. One of the solutions that have been proposed is to change the IMEI representation from decimal to hexadecimal.

This is the main reason why we believe that this matter needs to be discussed and handled with high priority within 3GPP.

As you might know, in TSG-SA #7, it was decided that IMEI number should be studied in TSG-CN. With this letter, we bring to your attention our need to have this matter treated with high priority in TSG-CN.

Thus we would like to ask you, as Chairman of 3GPP's TSG-CN, your guidance and help with the following points:

(1) CN1 and CN4 to discuss this matter during their next meetings

(2) IMEI changes to be included as part of for R99 although the contributions and work to make the changes are done in 2000.

(3) TSG-CN to make a resolution at TSG-CN#8.

Thank you in advance for your co-operation. Should you have any comments or questions, please do not hesitate to contact me.

Many regards,

Shun-ichiro Nagareda, Chairman of IMEI Adhoc in ARIB

IMEI Adhoc members in ARIB are:

  Matsushita Communication Industrial

  Nokia Mobile Communication

  Nippon Ericsson

  NEC

  Mitsubishi Electric

  Kenwood

  Fujitsu

  Sharp

  Toshiba

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