

3GPP TSG\_CN  
Plenary Meeting #9, Oahu, Hawaii  
20<sup>th</sup> – 22<sup>nd</sup> September 2000.

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3GPP TrFO&TFO Harmonisation Workshop#3  
Seattle, Washington, USA  
29-30 of August 2000

Tdoc N4 – 000705  
(N4 – 000686)

Source: MCC ([franco.settimo@etsi.fr](mailto:franco.settimo@etsi.fr))  
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## 1 Opening of the meeting and approval of the agenda

The TrFO Workshop was opened by the TrFO Workshop Convenor, Mr. Yun-Chao HU, LM Ericsson AB, with MCC Secretariat support Mr. Franco SETTIMO. After an informal poll it was noted that the majority of the workshop participants were from N4 (obviously due of the colocation with N4). The workshop was further attended by representatives of WGs S2, S4, N1 and R3. A concern has been raised to the limited participation of R3, since a number of issues that are currently under discussion requires close involvement of R3 experts.

The Agenda was revised to Tdoc 0705, after some rearrangement of the agenda issues and Tdoc allocation.

## 2 Allocation of documents to agenda items

See previous point of the report

## 3 Meeting Reports – 0563, 0700

### Tdoc 0700

With reference to workshop#2, Alcatel recognised the basic correctness of the meeting report although it was found too synthetic in some parts, where significant debates took place during the meeting and formulated a written proposal to enhance it. Into more specific details:

1. *Text on Tdoc 0519* agreed to be included in the previous meeting report.
2. *Text related to 0476*: agreed to be included.
3. *Text related to 454*: agreed to be included.
4. *Text related to 493*: NTT should be NTT DoCoMo. Ericsson expressed concern on the sentence "Mainly an S2 document", however Alcatel precised that it had remained on the exploder not for a very long time. The new sentence will be "Mainly an S2 document provided by Alcatel".

**Action Point (disclosed) MCC:** to revise Tdoc 553 including the above changes and circulate it on the TrFO/TFO exploder. For better clarity, it was agreed to allocate a new Tdoc number: **N4-000706**.

## **4 Input liaison statements: allocation to agenda items as appropriate – 0688, 0703, 0704**

### **Tdoc 0688**

Ericsson presented the reply to LS from SA4 (000327R) on codec types for different access technologies. Recognised to be basically the formulation of a question for S4, so the TrFO Workshop Convenor proposed to note the LS from the N4 point of view.

### **Tdoc 0703**

REPLY TO LIAISON STATEMENT ON SYNCHRONISATION ISSUES DURING CODEC TYPE CHANGE (R3-002013) was presented by NEC, although it is an official LS coming from WG R3, not processed via the normal way because of technical difficulties (access to the 3GPP server) encountered. Further clarification given by the WG R3 representative indicated that the original question from the TrFO/TFO workshop in Helsinki had not been formulated with enough clarity. It was also found prudent to wait for the reply from S4, since direct questions were posed to this group as well.

Eventually it was agreed to give a response, providing further clarifications on the issues mentioned in the document. Ericsson volunteered to draft an LS in response (Tdoc 707).

### **Tdoc 704**

RESPONSE TO LS ON RAB ASSIGNMENT FOR TrFO, discussed in R3. Ericsson clarified that fallback mechanisms can be provided in the CN if the CN knows in advance that TrFO is not supported.

It was found appropriate to draft a response LS on synchronisation: NEC, BT, and Ericsson will sit down together to elaborate a joint response (Tdoc 0708).

## **5 Technical Issues – 0623 (stage 2)**

### **Tdoc 0623**

The changes proposed to 3G TS 23.153 "Out of Band Transcoder Control - Stage 2" (version 2.0.1 is the new proposed one) were presented by Ericsson.

Some questions (e.g. RANAP signalling handled by the MSC server) were parked on request of the Convenor, and the discussion of the document was consequently postponed to include the agreements made on the other contributions submitted to this meeting. Unfortunately, this discussion could not take place due to timing constraints of the workshop. The Convenor requested the source of the contribution to resubmit at the next workshop.

### **5.1 RAN Capabilities**

#### **5.1.1 Handover**

#### **5.1.2 SDUs Support and ACS/SCS Negotiation - 0651**

### **Tdoc 0651**

A document on Support of SDUs by RNC and ACS/SCS negotiation was presented by Ericsson, who proposed to follow 4 rules, duly listed in the document, to enable TrFO. Ericsson clarified that the principle of the figure and the discussions so far is to illustrate the architecture of Codec negotiations, not to restrict the choice to the BICC protocol. According to NEC, the 4 bullet points include restrictions to the radio interface, potentially preventing (according to Lucent Technologies) from the benefits that AMR is capable of providing. No clear agreement on the proposed rules could be reached. However during the discussion it became clear that the following was agreed by the workshop:

- The RFCI set per codec type shall be symmetrical in both directions. The behaviour of an RNC for receiving RFCIs at lu UP initialisation from the Core Network shall be changed to be applied for both uplink and downlink. In R99 only the uplink RFCIs are changed, for R00 the downlink RFCIs need to be changed as well.
- WG R3 shall provide the necessary specifications or CRs. Standardisation of RFCI indexes would simplify the TrFO, but it is the workshop's understanding that this is sensitive within R3

## 5.2 CN Capabilities

### 5.2.1 Workplan

### 5.2.2 CN Scenarios – 0604, 0657

#### Tdoc 0604

Presented by Siemens and supported by NEC. Ericsson appreciated the document and remarked that the saving of bandwidth consequent to the selection of lu UP protocols in the Core Network, could be even better highlighted. The document consequently proposes to use the lu UP protocol throughout the Core Network, avoiding unnecessary conversions to other protocols.

#### Tdoc 0657

The body of the contribution had been already seen in Helsinki but the conclusions presented here are significantly different. The document proposes to use a homogeneous solution for the framing protocol, independently of the traffic case.

After some discussion an agreement was eventually reached. A single framing protocol, namely lu UP, is to be used within a single PLMN for speech (on AAL2/ATM, IP): this means no framing negotiations are required.

#### Tdoc 0709

Presented by an N3 delegate. *Interworking functions at the edge*, as for the transcoder, was proposed as an issue to be studied by N4. If positive, N3 sees no problem in a single framing protocol.

Recommendations:

- to locate IWF at the edge of the network. A Work Item will be provided by N3, based on contributions from N4
- PLMN-BC IE needs to be available at the edge MGW.

These achievements (Tdoc 0657, 0709) result in the following agreements:

- The usage of the lu UP Protocol as a framing protocol within the circuit-switched AAL2/ATM and IP core network for compressed speech and CS data services based on considerations of required protocol terminations and protocol conversions
- The location of the CS data services IWF at the edge of the network (i.e. IWF on the Edge). However, the workshop also realised that the PLMN-BC IE needs to be available at the edge MGW to trigger the activation of the IWF.
- N3 will provide a WI to initiate this work. It was also realised that N4 will be involved into this work to transfer the PLMN-BC towards the border MGW.

### 5.2.3 lu UP Protocol – 0653, 0603, 0622, 0627

#### Tdoc 0653

Presented by NTT DoCoMo, with the objective of allowing operators to have network options (in this case, lu UP termination) suitable for each individual network configuration, in the perspective of cost optimisation. It was observed that fulfilment of this requirement might prevent from inclusion of TrFO in Release 4 (new name for Release 2000). Ericsson noted that lu UP termination is not clear defined in the document. The document was noted.

#### Tdoc 0603

Presented by Siemens. The addition of the impacts on RANAP or lu UP of the proposed solutions seems to be worthwhile, according to Ericsson.

#### Tdoc 0622

Presented by Ericsson.

### **Tdoc 0627**

Presented by NEC who expressed favour for a solution which does not terminate Iu UP protocol in the CN network for mobile-to-mobile calls.

### **Discussion of the following Tdocs 0603, 0622, 0627:**

It was agreed that the contributing companies would sit together, formulating the decision points to be discussed at meeting restart the morning after (Moon session).

#### **Alternatives**

1. Monitoring always and in all MGW
2. Monitoring only when RFCI can be changed in all MGW. RFCIs are stored in the MGW
3. RFCIs are read from associated RNCs when is needed.

#### **Alternative 1:**

##### **Pro:**

- Fast response
- No impacts to Iu UP, Mc i/f, BICC standards

##### **Cons**

- Additional HW required for every node per call

#### **Alternative 2:**

##### **Pro:**

- No monitoring HW required during stable call phase (not during call setup, relocation, ....)

##### **Cons**

- Every MGW needs to support the "listen" function
- One additional RANAP IE required

#### **Alternative 3:**

##### **Pro:**

- HW efficiency
- No Monitoring HW required

##### **Cons**

- Retrieve of RFCI information required, introducing "round trip" delay, to be introduced by every MGW
- Prevention of changing of RFCI during relocation
- Iu UP standardization impacts (new operations)
- Complicated interacting signalling procedures

**One alternative to be selected. This issue will be handled in the output session of the workshop (see section 8)**

## **5.2.4 Handover – 0624, 0626**

### **Tdoc 0624**

Presented by Ericsson. Proposal: if inter-MS-C handover/relocation is performed in R00 in the same way as for R99, then transcoders should always be inserted by the Non-Anchor side, as for R99. BT objected that the decision to be taken is based on a SA document, not promptly available. Ericsson volunteered to draft an LS (Tdoc N4-000713) to S2.

### **Tdoc 0626**

Basic working model for relocation is described in the NEC document. Some parts have been already covered in the agreement reached during the first day. The document was eventually noted. NEC requested clarifications about the procedure to submit the request for OID to ITU-T: one company has to bring the contribution, and Ericsson volunteered, since 3GPP has no official liaison procedures with ITU-T.

### 5.3 TrFO Break -

No contributions addressed to this issue

## 6 Voting Issue

Considerable progress has been made during the workshop. A number of agreements can be reported to the TSG Plenaries. Therefore, no discussion took place on this issue during the workshop.

## 7 AOB

## 8 Output Documents

### Tdoc 711

This document describes the first draft of the agreements made during the workshop based on the notes from Franco and Yun-Chao. An Ad Hoc session was established to complete the status report with the key persons (Mr. Toshiyuki TAMURA, NEC, Phil HODGES, LM Ericsson AB, Eva-Maria LANIG, Siemens AG). This document will be presented for comments of the workshop participants (Tdoc 720)

### Tdoc 720

The document contains a detailed description of the agreements reached during the workshop.. The following comments were raised:

**Sect. 1:** no comment.

**Sect. 2.1:** Alcatel remarked that there is nothing agreed for IP and proposes *Framing of IP network is open*. A consistent change was then performed by the TrFO Workshop Convenor. The term in brackets (e.g. modems) was found misleading. An explicit reference to Circuit Switched Core Network was introduced.

**Sect. 2.2:** it was better specified "*it would be beneficial to locate the IWF ...*". BT proposed to specify the benefit achieved (simplification of service modification without prenotification). Multimedia was added to speech/data/fax upon suggestion of NTT DoCoMo.

**Sect. 2.3:** Ericsson proposed to clarify the meaning of the first sentence, introducing the concept of local handover. RNS was corrected to SRNS. "*...and call set up*" was deleted from the first sentence. BT proposed to add a sentence indicating, qualitatively, that "*Changes to the lu UP protocols are foreseen to indicate the valid RFCIs*". Ericsson, however, noted that changes were restricted to the behaviour of RNC for receiving of lu UP re-initialisation. BT observed that for R00, also the downlink needs to be changed. Codec mode was corrected into codec type.

**Sect. 3:** title was changed to *Agreed Alternatives for obtaining RFCI Information at TrFO breaks*. A preface was included.

**Sect. 3.1:** in the Benefits "obtaining" was replaced with the broader concept of availability of information within MGW. The estimated standardisation work was better clarified. No impact on speech delay was better detailed in the section dedicated to disadvantages.

**Sect. 4:** the necessity of an intervention from the plenary was highlighted.

### Tdoc 0707

LS to R3 on Sending of NSI without modification to RAB. Objective: to inform R3 that our requirement is still there. Revised to 0739.

### Tdoc 0739

Approved.

### Tdoc 0708

LS to R3 on Support of SDUs for TrFO. Objective: to provide further clarification to R3 and to request an answer to the question that was raised in a previous LS. Revised to 0740.

### Tdoc 0740

Agreed.

### **Tdoc 0713**

LS to S2 on SRNS relocation based on global title. Objective: the Ericsson contribution makes references to a S2 document from which the status is unclear. Therefore status information was requested. Revised to 0741.

### **Tdoc 0741.**

Approved.

## **9 Closing of the meeting**

The Convenor thanked all participants in the workshop for their supportive contributions and for their availability to work until unsociable hours, a practise that allowed reaching significant achievements.

The Convenor stated that a status report will be given to the TSG CN, RAN and SA Plenaries based on the agreed document 0720.

The Convenor stated that no voting is required within TSG SA since the workshop has all confidence that an appropriate decision on the alternatives can be reached at the TSG Plenaries.

The workshop stated that a joint session with R3 is desirable, leaving us with the request to have a meeting within the week 42 (16-20 October, UK). The Workshop Convenor was requested to investigate the joint session opportunity with the R3 Chairman. To enable sufficient time for stage 2 activities the workshop requested a period of 3 days for the next workshop.

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