3GPP TSG CN Plenary Meeting #11 **Tdoc NP-010098**
Palm Springs, CA, USA
14th – 16th, March 2001

Source: **NTT DoCoMo, KPN, SK Telecom, NEC, Fujitsu, NTT Comware**

Title: **Network Optimisation**

(toward integrated approach)

Agenda item: **9.7**

Document for: **APPROVAL**

1. Introduction

Network optimisation has been discussed in CN4. At the CN4#06 meeting held in January 2001, there was proposal which was based on separated logical architecture, but could reduce signalling load under the integrated physical architecture by combining messages. However, the proposal was rejected. The reason is mentioned in the meeting minutes (NP-010061) as follows;

"The solution does not realize network optimisation. Even if it can reduce signalling under the integrated network, no optimisation is realized because it can not reduce signalling under the reference model."

This contribution raises concerns on the above conclusion and is proposing four conclusions for handling future network optimisation activities.

2. Situation Analysis

2.1 Introduction of integrated approach

When the 3GPP started the R99 discussion, network architecture was deeply discussed. In particular, integrated approach intended to introduce integrated nodes was discussed. The integrated approach means that a physical network node can be composed of MSC/VLR and SGSN. On the other hand, the separated approach means that MSC/VLR and SGSN are physically separated.

It was concluded that while MSC/VLR and SGSN are logically separated, they can be physically combined or separated. The conclusion is identified in the current TS 23.002 (Network Architecture) as follows; "When the MSC and the SGSN are integrated in a single physical entity, this entity is called UMTS MSC (UMSC)."

2.2 Analysis of integrated approach

As mentioned in section 2.1, the integrated approach is already possible and identified. Since an integrated approach is one of new requirements introduced by 3GPP R99, the signalling protocol should evolve in order to meet such a new requirement.

Also, if a new signalling protocol yields improved network performance for an integrated approach then it should be considered and specified by 3GPP.

It should be noted that interoperability should always be ensured, and any new signalling protocol should not force other networks to introduce such protocol. In order to ensure such backward compatibility, necessary protocol expansion shall be allowed, however other networks should not be forced to introduce such a protocol. In any case to prevent any impacts on non modified networks, it may be preferable that the new protocol is applied only between networks which already have agreements.

Also, while stage2 information flows are defined based on logical network architecture and defined for all interfaces between functional entities, stage3 protocols for the interfaces within physical nodes are not necessary, because they are not used. Therefore, when new protocols for integrated approach are

specified, no protocols for the interfaces between functional entities within an integrated physical node are necessary.

3. Conclusion

Based on the above analysis, the following four conclusions can be drawn;

(1) Signalling protocols should evolve in order to satisfy the requirements of an integrated approach.

(2) The effect of network optimisation should also be evaluated based on possible implementation examples such as an integrated approach.

(3) The stage3 protocols for the interfaces between functional entities within a physical node are not necessary, while stage2 information flows must be specified.

(4) Any necessary protocol expansion for ensuring interoperability between old and new approaches shall be allowed.

4. Proposal

This contribution proposes that CN plenary mandates CN4 to continue the specification works for network optimisation based on the above conclusion.