Technical Specification Group Services and System Aspects
Global Text Telephony Workshop, Düsseldorf, Germany, 18-19 April 2001

GTT(01)0022

Source: **Nortel Networks**

Title: **Transcoder based solutions for TDMA and CDMA**

Document for: **Information**

Agenda Item: **5**

The FCC in 1997 required to American mobile operators to offer to the TTY users access to the emergency call centres (a.k.a. E.911). The AMPS, widely used in North America, was considered giving a sufficient quality for these accesses. It was therefore asked that the Digital wireless networks provide at least a same quality.

This requirement applies to all the technologies used in North America, i.e. TDMA (IS-136), CDMA (IS-95 or CDMAOne), iDEN and GSM.

In year 2000 solutions were standardised for TDMA and CDMA. They are based on bit-stealing mechanism of the encoded speech. Actually the TTY add-on is embedded in the speech codec. Such techniques imply in the network side to be implemented within the transcoders.

TDMA as well as CDMA involve hard handovers while the mobile station is moving. These handovers can imply change of transcoder. For certain implementation it's even systematic.

This was found compatible with the FCC requirements. In case of GSM most of the time the change of transcoder occurs in inter-BSS handovers. These handovers are much less frequent than intra-BSS handovers. In case of UMTS the change of this should be even less frequent.

The interruption introduced by handovers happen only when TTY is being transmitted in UL, in DL the bridging that is usually active to shorten the interruption should reduce the loss of characters.