

TSG-RAN Working Group1 meeting #11

TSGR1#11(00)0355

**San Diego, CA, U.S.A., February 29 – March 3, 2000**

**Source** : Nortel Networks, Vodafone AirTouch, Mitsubishi  
**Title** : LS on UMTS synchronisation channel detection  
**To** : ETSI STC SMG2, 3GPP TSG RAN WG4  
**Cc** : 3GPP TSG RAN WG2

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At the 3GPP TSG RAN RRM Ad Hoc held in Turin, 9-11 February, SMG2 delegates requested some input from RAN WG1 on the detection of the FDD synchronisation channel during GSM idle - frames.

The FDD synchronisation channel is 10ms long and the GSM idle period is of the order of 5ms. There were some concerns expressed that these idle periods may not be sufficient long to uniquely identify a cell as they do not cover the whole synchronisation channel. Moreover, as they are repeated every 120ms, the same portion of the SCH channel is always covered.

Simulations presented so far in RAN WG1 have never considered the case where FDD SCH has to be detected from GSM i.e. the scrambling code is known and the same part of the SCH is seen. However, the simulations presented in TSGR1#99(g76) and TSGR1#99(b98), considering scrambling code acquisition times for inter frequency FDD-FDD handovers with compressed mode gaps of length 7-14 slots, provide some guidance on what can be achieved., . It is the common understanding in RAN WG1 that synchronisation can be acquired unambiguously within these 5ms (theoretically, frame timing and scrambling code group information can be recovered unambiguously from a sequence of 3 consecutive Secondary Synchronisation Channel Codes). As simulations with assumptions corresponding to the GSM to UMTS handover have not been performed it is not clear what the minimum accumulation time under various conditions is. Typical values for these accumulation periods used were from 8 up to 30 slots for the detection of the Primary Synchronisation Channel and from 15 to 30 slots for the Secondary Synchronisation Channel.

SMG2 also asked how often the synchronisation information needs to be reconfirmed. RAN WG1 cannot provide this information as it is strongly dependent on the radio conditions, system deployment, etc... RAN WG1 kindly asks RAN WG4 if this issue has already been considered in the frame work of intra frequency handover measurements and performance analysis.