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**Antwerp, Belgium**

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**From: TSG S3**

**To: TSG T2, TSG T3**

### **Location of conversion functions c2 and c3**

During the Antwerp meeting, S3 has noticed a need of clarification about the location of the conversion functions c2 and c3 that allow converting 3G authentication vectors to 2G authentication vectors to ensure interoperation. S3 identified the following solutions :

- 1) conversion functions are located both in the USIM and the UE :

If this solution is chosen, the USIM shall convert 3G authentication vectors into 2G authentication vectors only when it is inserted in a pre-release 99 UE (to ensure that a USIM can function in such a terminal). When inserted in a R99 UE, the USIM would just transfer CK and IK to the UE that would convert CK into Kc whenever required.

- 2) conversion functions are located in the USIM only :

If this solution is chosen, the conversion would always take place in the USIM. At this point, there seems to be two ways to deal with the transmission of the keys to the UE.

- a) the USIM can send all keys to the UE (CK, IK and Kc derived from CK) after a successful 3G authentication
- b) the UE can obtain the keys it needs from the USIM with special messages.

S3 understanding is that T3 working assumption is the solution described in 2) a). Since for S3 the described solutions are equivalent from a security point of view, T2 and T3 are kindly asked to coordinate and choose the most efficient solution.

Please note that other conversion functions (c4, c5) must be anyway implemented in the terminal.

We would appreciate a fast response to include in R'99.