Liaison Statement

To: **3GPP TSG RAN, 3GPP TSG RAN WG4**

Copy: **ETSI/ERM/RM, CEPT WG SE** (Working Group, Spectrum Engineering)

From: **CEPT ERC TG1**

Subject: **Definition of ACLR and emissions requirements**

ERC TG1 thanks TSG RAN for its LS reporting on the progress of its work, and particularly the work of WG4 in defining RF parameters. TG1 is hopeful that we would be able to advance our work based on timely inputs from TSG RAN as described below.

1 ACLR

ERC TG1 notes that WG4 is still in the process of defining ACLR requirements. ERC TG1 requests that, in defining the ACLR requirement, WG4 takes due account of the emissions requirements outside of the UMTS band, as well as UMTS performance considerations.

The previous liaison statement from ERC TG1 to TSG RAN included a draft ERC report on “Adjacent band compatibility between UMTS and other services in the 2GHz band”. The compatibility studies in this report used assumed spectrum masks which are defined in Annex A of the report. These spectrum masks represent ACLR values of approximately 40dB for the MS, and more than 60dB for the BS.

ERC TG1 has concluded that, if the UTRA requirements for the spectrum mask are less stringent than assumed in the report, it will need to review the conclusions of the report. This review may result in an increase in the guard bands within the UMTS bands needed to protect services in neighbouring bands. As a result, the bandwidth available to support UMTS services would be reduced.

ERC TG1 wishes to inform WG4 that much of the regulatory action for the introduction of UMTS within Europe has been based on the assumption that twelve paired channels will be available within the paired UMTS band (2 X 60MHz, minus any spectrum required for guard bands), and that seven unpaired channels will be available (within 1900 – 1920MHz and 2010 – 2025MHz, minus any spectrum required for guard bands). If the guard band requirements are increased, there is a possibility that the number of available channels could be reduced. This would have serious consequences for the coordinated introduction of UMTS by 1 Jan 2002.

ERC TG1 recognises that ACLR must be considered in conjunction with the parameters which influence the optimum channel spacing in order to determine the requirements. ERC TG1 offers to work with WG4 to define these parameters so that they are both optimum from a technical perspective, and meet regulatory requirements in Europe.

2 Specification of emissions

ERC TG1 understands that the emissions requirements may be defined as:

- an ACLR measurement at multiples of 5MHz offset from the carrier frequency, in a measurement bandwidth of nominally 4.096MHz
- a swept measurement at greater offsets than the ACLR measurements.

This definition results in some frequency ranges for which the emissions are not defined (between the ACLR measurements). All guard band calculations in the ERC report rely on emissions levels in these frequency ranges close to the carrier which are not currently defined. Also, the ACLR measurements in 4MHz bandwidth are difficult to apply to compatibility requirements if the spectral power density is likely to vary within this bandwidth.

ERC TG1 requests that a continuous spectrum mask for emissions is defined as soon as possible, starting at the edge of the wanted channel. This is required as a reliable basis for studies which are used throughout Europe to prepare for UMTS introduction.