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TSGR4(00)0270

Source: 3GPP TSG RAN WG4
Title: Response to LS on SoLSA support on UTRAN
To: 3GPP SA1
Copy: SA2, RAN1, SA

RAN4 has received a liaison statement from SA2 (S2-000300), with the request to review a liaison statement from S1 (Tdoc S2-00-0063; S1-99-1077) on SoLSA support on UTRAN from a radio interference perspective.

It is RAN4 opinion that if the SoLSA solution leads to either

-SoLSA UE being connected to an LSA cell, where "normal" handover would have moved the UE to a non-SoLSA cell; or

-a UE not allowed access to a specific LSA, but where the LSA cell is "optimal" from a radio perspective, is connected to a cell further away,

because of the higher required UE and BS output power will lead to potentially very severe interference both in the network offering the SoLSA service, as well as in any network on an adjacent frequency, and should thus be avoided in the solution.

Example: Especially with exclusive access, if a UE not allowed on an exclusive access cell, but connected to a cell on the same frequency, gets close to the exclusive access cell, it is likely to block that cell, so service from that cell is not possible.

This problem also exists in GSM with SoLSA but is far less serious as the impact on operators adjacent in frequency can be avoided by not using outer frequencies, and the fact that guard frequencies exist between operators. The problem within a GSM network is significantly reduced in most cases as interfered connections can be improved by intracell interfrequency or intertimeslot handover, as well as use of frequency hopping.

Currently the SoLSA Stage 1 contains the following definitions of Exclusive Access and LSA only access.

4.2.4 Exclusive access

For a cell belonging to one or more service areas and where only one or more specific subscribers shall have allowed access, other subscriber's mobile stations shall be prevented from using the cell to obtain any service, other than TS12 (Emergency Calls).

Handovers into cells belonging to localised service areas where only specific subscribers shall have allowed access, shall be possible to be prevented for other subscribers, if required by a SoLSA application.

4.2.5 LSA only access

With access allowed only within one or more localised service areas, it shall be possible to prevent receiving and/or originating activities from non-LSA cells outside LSA.

It shall be possible to prevent handovers to cells not belonging to allowed localised service areas, if required by a SoLSA application.