

**Title:**                    **Answer from AISG chairman to RAN4 LS in R4-030640 on Control of RET Antennas**

**Agenda Item:**        **8.2.5**

**Source:**               **Vodafone Group**

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## **1. Introduction**

A new work item "Remote Control of Electrical Tilting Antennas" has been approved at TSG RAN#19 to specify a standardised open interface to enable local RET antenna-controlling functionality situated in the Node B to allow the RET antenna system being provided by a third party vendor.

TSG RAN WG 4 was tasked by TSG RAN to sent a LS to the Antenna Interface Standards Group (AISG) in order to clarify items related to the AISG Specification on the interface to control Remote Electrical Tilting Antennas (see R3-030640).

This contribution provides the answers and comments to the RAN4 LS received from the chairman of AISG by email for information.

## **2. Answers and Comments from AISG**

### 1. Testing

The antenna control system creates several requirements for testing:

1.1 Verification that any spurious signals generated within the system are not radiated at levels which infringe the spurious spec (as revised) and that there is no intermodulation or cross-modulation between the signaling subcarrier and the signals from the transmitter . This test will need to be performed at the system port closest to the antenna. In the event that there is a TMA or TMB, then the measurement would be made at the antenna port of that device. If there is no amplifier, but only a Layer-1 Convertor (ie an subcarrier signaling modem) then the measurement would be made at the port of that device which is usually connected to the antenna. (or at the port of a connected TMA which is connected to the antenna). This measurement will be made

looking into the 'end' port on the system, whether we are testing a transmitter or a receiver (something not provided for on the present port definitions).

1.2 In the case of a receiver, there will also be a necessary test at Port B, looking towards the antenna to verify that any spurious signals generated within the system and any intermodulation or cross-modulation between the signaling subcarrier and the received signals are not at levels which reduce system performance. This is a system performance parameter and not a regulatory matter.

## 2. Test ports and specifications

Given the situation described, it is necessary to establish adequate specifications for the parameters referred to above. The qualitative descriptions above set out the parameters to be measured, but the necessary limits need to be quantified.

## 3. Spectrum mask

Several AISG members have already recognised that the specification mask for the in-band signaling is currently not adequate, and we will have an agenda item for the next meeting to review it. It is clearly necessary that the antenna subsystem meets the mandatory system specification for spurious emissions and AISG will attend to this matter.

## 4. Interoperability issues

AISG will review the specifications that relate to power supply requirements to see how they can be further defined, especially in relation to inrush current. The suggestion for a specification for RF attenuation is interesting and AISG will discuss this possibility at its next meeting.