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Title: Channel models for deployment of UTRA
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1. Background

As one part of the specifications of requirements for UTRA, TSG RAN WG4 performs link level simulations that are needed for conformance testing. This is performed in an ad hoc group (AH01) which is shared with RAN WG1, as was decided at TSG RAN #3. When developing and selecting the channel models used in these simulations, there was a vigorous debate about the purpose of the link level simulations and what channel models to select for that purpose.

Several operators saw the need for performance evaluation of UTRA in terms of capacity and link budgets and therefore wanted the models selected to represent “real life” conditions. This would enable performance evaluation of a UTRA deployment using the performance numbers from simulations with channel models.

On the other hand there was a need expressed to minimise the amount of simulations and the number of conformance test cases defined. For this reason, a limited set of models was proposed that would test the receiver performance in a way that the most important properties (number of receiver taps, dynamics of channel, etc.) were spanned in a satisfactory way.

Since the scope of WG4 includes writing conformance test specifications, but not making performance evaluations, the models selected were mainly of the second kind described above, aimed at testing receiver properties. The purpose of the conformance testing should not be deployment evaluation. It was also noted that models should not deviate too much from “real life”, since equipment then may be designed to pass the tests rather than perform well in “real life

The need by operators and others to have reference models for performance evaluation still remains. Planning, deployment evaluations and tests are being performed already today and this activity will increase until (and beyond) the first commercial UTRA deployment. It is important that equipment manufacturers, operators and test equipment manufacturers in this process can “talk the same language” in terms of performance. We therefore propose that common channel models are developed within TSG RAN.

2. Proposal

A set of common reference channel models is documented in the RAN specifications. The information should be informative and put in a technical Report or an Annex.

- The purpose of the models is to have a common reference for deployment evaluation in different deployment environments (rural, urban, etc.).
- There will be no performance numbers (link level or system) documented in TSG RAN.
- The models should preferably be based on generally accepted models, such as ITU, ETSI, etc. If possible, one or more of the conformance testing models selected by RAN WG4 could be included.
- The work is performed by WG4, where similar work has already been completed.
- The work can start now and be completed by RAN#7.