TSG-RAN meeting # 14 **RP-010843**
Kyoto, Japan. December 11-14, 2001

Status Report for WI to TSG

Work Item Name: "High Speed Downlink Packet Access (HSDPA): Physical Layer Aspects"

SOURCE: Amitava Ghosh **TSG:** RAN **WG:1**

E-mail address rapporteur: qa0047@motorola.com

Ref. to WI sheet: 44: High Speed Downlink Packet Access (HSDPA) – *Physical layer aspects*

Progress Report since the last TSG for WG1:

Two meetings, a three day AdHoc meeting in Sophia Antipolis, partly in a joint session with RAN WG2 and the RAN WG1#23 in Jeju, Korea, focussed primarily on HSDPA. The following have been agreed:

- Many details of the physical layer aspects of the HARQ functionality have been agreed
  - HS-DSCH transmission for FDD and TDD uses channelization codes at a fixed spreading factor SF=16
  - Length of HS-DSCH is 2 ms and is a static parameter for FDD. 1.28 Mcps TDD uses a fixed 5 ms while TTI for 3.84 Mcps TDD is TBD.
  - Channel coding structure for HS-DSCH.
    - Physical layer Hybrid ARQ functionality added.
    - DTX insertion is removed.
    - Only one interleaver adapted to the HS-DSCH TTI length.
    - Two types of modulation namely QPSK and 16-QAM may be applied to HS-DSCH.
- Agreements were reached on almost all the downlink signalling parameters and uplink signalling parameters for both FDD and TDD.
- Downlink Channel Structure
  - Consists of a downlink DPCH and a number of SCCH-HSs. The number of SCCH-HSs can range from a minimum of one SCCH-HS (M=1) to a maximum of four SCCH-HSs (M=4).
  - Detailed coding structure of SCCH-HS TBD.
  - The QPSK symbol carrying the HI is punctured into the DPDCH.
  - Timing relationship for HS-DSCH related downlink signalling agreed upon.
  - TDD overall downlink signalling structure is a two step approach based on associated dedicated channels and SCCH-HSs.
- Uplink Channel Structure
  - For FDD, HS-DSCH related uplink signalling uses DPCCH-HS with SF=256 that is code multiplexed with the existing dedicated uplink physical channels.
  - For TDD, HS-DSCH related uplink signalling uses the uplink HICH. HICH is allocated implicitly with an HS-DSCH allocation.
  - Timing relationship for FDD and 3.84 Mcps TBD but for 1.28 Mcps TDD agreed upon.
- UE measurement feedback procedure agreed upon.
- Tentative UE Capability parameters agreed upon but lot of open issues remain.

List of open issues:

1. UE Capabilities
2. Coding aspects of Downlink Signalling (shared control channel)
3. Some TDD related issues
4. Details of Uplink Channel Timing
5. Naming of different channels

Estimates of the level of completion (when possible):
Overall 70% (weighted completion estimate)

WI completion date review resulting from the discussion at the working group:
Work in RAN WG1 is still targeted for completion in March 2002.

References to WG's internal documentation and/or TRs:
TS 25.308 v5.0.0 was approved in RAN#13. A CR to the specification capturing all the modifications agreed in WG1 and WG2 is presented in RP- for approval.
TR 25.848 is a WG1 internal TR capturing all agreements related to the Physical Layer Aspects.
.