

Agenda Item : **AH24 : High Speed Downlink Packet Data Access**
Source : **Nortel Networks**
Title : **Stand-alone DSCH, proposed text for inclusion in TR 25.848 v 0.4.0**
Document for : **Discussion and approval**

In the following some text related to a based stand-alone DSCH is proposed for inclusion in TR 25.848. The structure of the TR is reproduced here in order to provide a clear as to where the text should fit. New text of modification is marked with revision marks.

5. Overview of Technologies considered to support UTRA High Speed Downlink Packet Access

5.1 Adaptive Modulation and Coding (AMC)

5.2 Hybrid ARQ (H-ARQ)

5.3 Fast Cell Selection (FCS)

5.4 Multiple Input Multiple Output Antenna Processing

5.5 Stand-Alone DSCH

A stand-alone DSCH is defined as a DSCH or a HS-DSCH mapped on a downlink carrier that is different from the carrier that supports its associated DCH/DPCH as documented in 25.950, the RAN 2 TR on HSDPA[x].

3-The stand-alone DSCH may be seen as a specific case of mapping of the transport channels set up on the downlink to a UE in a multi-carrier cell. The multi-carrier cell concept may correspond to several cases: cells with a possibly asymmetrical number of carriers up and downlink and cells with carriers which are part of different bands, these two cases being possibly combined.

The introduction of the Stand-alone DSCH would lead to some modifications of the physical layer structure as far as physical channel characteristics are concerned. Impact is mostly on the UE, as a double receiver would be needed due to the simultaneous reception on two carriers. Note that, if the UE would include such a second receiver, it could also be used for IF measurements, thus reducing the need for Compressed Mode depending on the band used.

The signalling for stand-alone DSCH will be carried on the carrier that supports its associated DCH/DPCH. Due to strict asymmetric nature of the stand-alone DSCH, the signalling impact on the carrier that carries the companion DCH will also be asymmetric that can lead to limitations in resource allocation to symmetric services.

The introduction of independence between the frequency carrier supporting the DCH and the carrier supporting the stand-alone DSCH corresponds to an added flexibility with respect to R99 DSCH and HS-DSCH for which the DCH and DSCH/HS-DSCH are mapped onto the same carrier. It allows to segregate transport channels for the same UE with different QoS requirements onto different carriers. By assigning up to whole carrier for the HS-DSCH, the maximum power and code space available for HS-DSCH transmission would be increased as no resource has to be set aside for DCH or common channels. This would in turn allow for HS-DSCH transmission with higher peak rates.

9 Conclusions and recommendations

- 6 RAN 1 identified that the stand-alone DSCH was a specific case of mapping of transport channels for a UE in a multi-carrier cell. If a work item on multi-carrier cells was to be considered at RAN, RAN 1 recommends that a study item parallel to HSDPA is introduced to study the benefits of stand-alone DSCH for HSDPA as part of the UTRAN evolution.