TSG-RAN Working Group 2 (Radio layer 2 and Radio layer 3) ***TSGR2#2(99) 123***
Stockholm 8th to 11th March 1999

Agenda Item: 7.?

Source: Alcatel

Title: Proposal for new sub-states in cell connected state of S2.03

Document for: Decision

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1 Introduction

In the current version of S2.03 document, several sub-states have been described for the cell connected state. This document analyses these sub-states and proposes some modifications in order to better exploit the various transport channels that have been defined.

2 Analysis of the current sub-states

The different sub-states have been illustrated in Figure 3 of S2.03 and are recalled here for completeness.

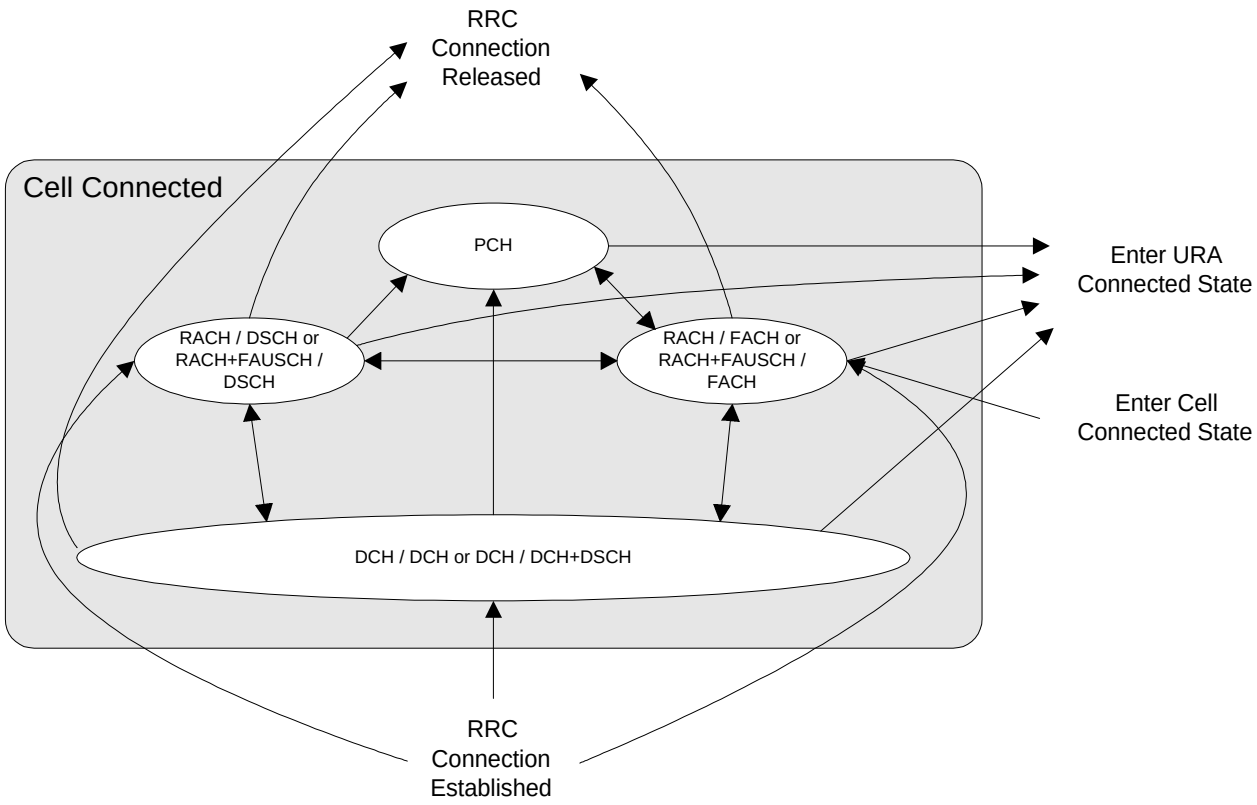

Figure 3 – Substates within Cell connected state

In the RACH/DSCH or RACH+FAUSCH/DSCH sub-state, there is no fast return channel on uplink, and fast power control can therefore not be applied on the DSCH. UE Id is probably signalled on a DSCH control channel, which has however no other role since fast power control is not needed on uplink (use of RACH). In these conditions, the only difference with respect to the RAH/FACH or

RACH+FAUSCH/FACH sub-state is the possibility to use code multiplexing on the DSCH, whereas only time multiplexing can be used on FACH. However this sub-state can not permit to fully exploit the capability of the DSCH, and may not provide a significant difference with the RACH/FACH sub-state to justify its presence. This sub-state has not been further described for the time being.

On the other hand, the only other sub-state where DSCH is used is the DCH/DCH + DSCH, i.e. in conjunction with a DCH. The case where DSCH is used in conjunction with a DSCH Control Channel has not been foreseen in S2.03.

3 Proposal

It is proposed to define a new sub-state corresponding to DCH/DSCH (+ DSCH Control Channel referred as ACCH), for which a DCH is used in uplink and the DSCH is used on downlink in conjunction with the DSCH Control Channel.

In this sub-state, fast power control may be used in both directions. The DSCH Control Channel could be extended to support the fast downlink signalling channel useful for uplink transmission control (refer to USCH concept). This sub-state could in fact be merged with the DCH/DCH or DCH/DCH+DSCH sub-state since they are very similar.

It is also proposed to remove the RACH/DSCH or RACH+FAUSCH/DSCH sub-state, which as stated above, does not represent a significant difference with the RACH/FACH sub-state.

Additional changes might need to be considered if the USCH concept is adopted by WG2.

It is then proposed to update Figure 3 of S2.03 with the following :

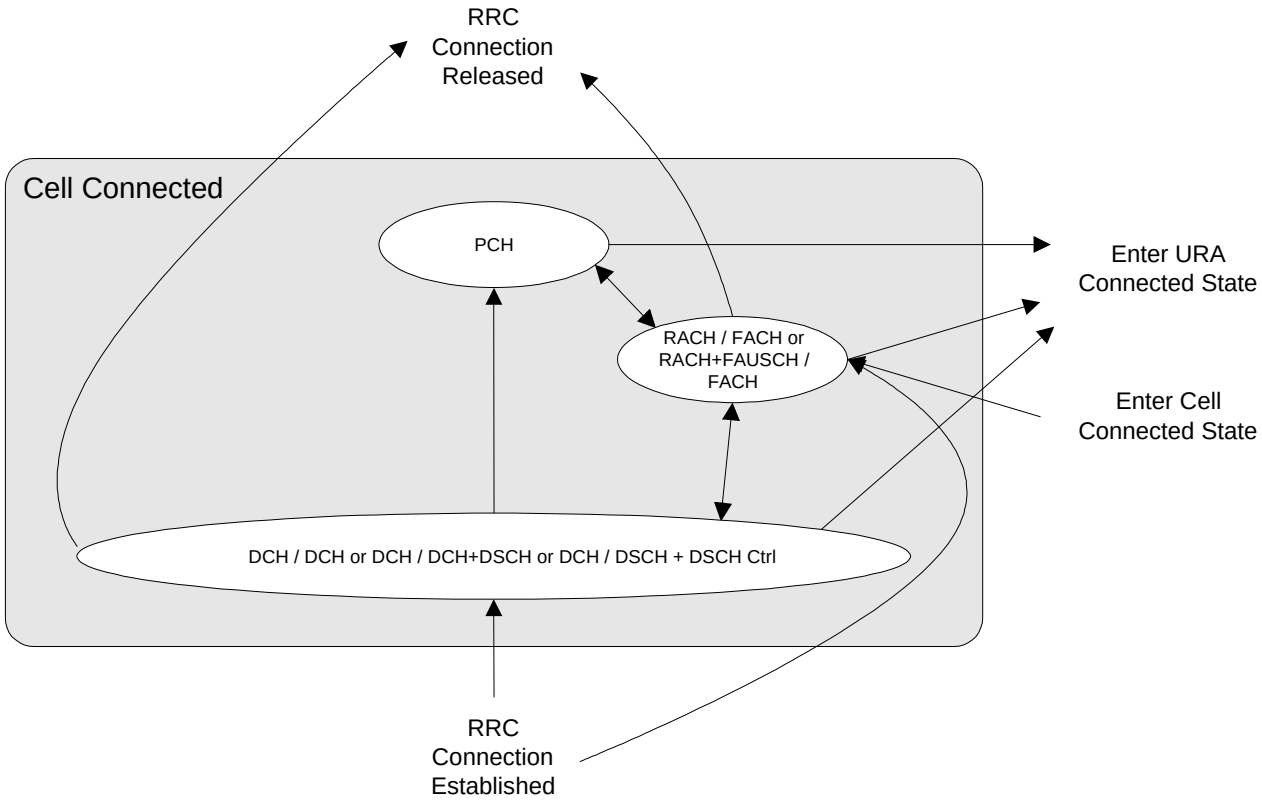

Figure 3– Substates within Cell connected state

Both proposals may be treated independently. If they are accepted, then section 7.3.1.1 should be updated according to the new possible changes, and section 7.3.1.3 should be deleted.