AGENDA ITEM:		
TITLE:	**Paging and Broadcast for DS/ANSI-41 Systems**	
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DOCUMENT FOR:	Discussion	

Background:

This contribution analyses some aspects of paging and broadcast for DS/ANSI-41 and tries to identify some areas were hooks and extensions would be necessary in order to have a practical specification.

1. Scope

This contribution should be seen in the context of 3G global harmonization efforts, based on the OHG Toronto recommendation, as sanctioned by the ITU-R TG8/1 June '99 Beijing meeting and endorsed by both 3GPP and 3GPP2.

This contribution covers **harmonization aspects** for MS/UE operating **on common channels**.

Hooks/extensions are identified for the DS/ANSI-41 RRC.

2. Assumptions

This contribution is based on the latest publicly available 3GPP and 3GPP2 **approved** text at the time of the drafting, as follows:

- for 3GPP, the documents as available on the www.3gpp.org Web site and dated June 1999. Please note that the outcome of the July and August meetings was not reflected in those documents.
- for 3GPP2, the IS-2000 suite of documents plus the planned capabilities that were approved for incorporation in the cdma2000 Release A specifications.

3. Analysis

3.1 cdma2000 Channel Assignment into Soft Handoff feature

cdma2000 includes the Channel Assignment into Soft Handoff feature to reduce the probability of call failure due to failure to acquire the traffic channel after receipt of the Channel Assignment Message on the Paging Channel.

The RRC connection establishment procedure in the DS spec includes the ability to establish the dedicated channel in soft handoff.

Conclusion:
The same functionality as the cdma2000 Channel Assignment into Soft Handoff feature is already supported in the DS spec. Therefore, no hook or extension will be required.

3.2 Paging Issues

In cdma2000, the paging message is considered a CC message, while in the DS spec, the paging message is an RRC message. The cdma2000 paging message can include a service option field, which is specific to ANSI-41.

Cdma2000 and the DS spec both use IMSI addresses for paging. Cdma2000 includes support for MIN-based IMSIs and True IMSIs. Since backward-compatibility with MS/UE including only MIN-based IMSIs will not be an issue for DS/ANSI-41, it is assumed that over-the-air support for MIN-based IMSIs is not needed in DS messages. Cdma2000 and the DS spec both use TMSI addressing. The size of the TMSI address used in cdma2000 can vary from 2 to 12 octets. The size and format of the TMSI in the DS spec may be different.

By adding new IMSI and TMSI formats to the paging record in the DS spec, the DS/ANSI-41 system can include additional required cdma2000 information such as the service option. A hook may be required in the DS spec to support new formats in the paging record.

The ability of the PCH in the DS spec to support cdma2000-sized paging messages is unclear based upon the current publicly available documents. Hooks and/or extensions may be needed to support cdma2000-sized paging messages.

3.3 Broadcast SMS

Cdma2000 uses a Data Burst Message for broadcast SMS. Procedures have yet to be defined in the DS spec. It is thought that the DS procedures could be used to transport the cdma2000 Data Burst information. However, until the procedures have been defined, it cannot be determined whether a hook or extension is necessary.

3.4 Overhead Information

Currently the System Information Message in the DS spec includes both network-related information and RRC-related information. The System Information Message in the DS spec should be split according to network-related criteria and RRC-related criteria. This way it will be possible that the RRC-related information from the DS spec and the ANSI-41 network-related information be sent to a DS/ANSI-41 MS/UE without sending the GSM MAP network-related information.

On the broadcast channel it is possible for the MS/UE to receive network-related messages from ANSI-41 and RRC-related messages from the RAN. The MS/UE needs to be able to recognize and distinguish between them. Therefore, a hook is required to

provide a common message type for the overhead messages between the DS spec and cdma2000.

The ability to send ANSI-41 network related-messages on the DS broadcast channel is needed. Examples of such messages from cdma2000 are the Global Service Redirection Message, Uzer Zone ID Message, and Private Neighbor List Message. A hook and/or extension may be required to support such functionality.

It may be desirable to have a consistent way to indicate to the MS/UE if changes to the overhead messages (whether originated from the ANSI-41 network or from the RAN) have occurred. For example, the cdma2000 system uses a 6-bit configuration message sequence number in all of the overhead messages as well as in the page. It is unclear if and how the W-CDMA overhead message versions are tracked. A hook/extension may be needed for overhead information update.

4. Summary

At this time, the following have been identified as potential hooks and/or extensions for DS/ANSI-41:

- A hook may be required to support new formats in the paging record.
- Hooks and/or extensions may be required to support cdma2000-sized paging messages.
- Hooks and/or extensions may be required to support broadcast SMS.
- A hook is required to provide a common message type for the overhead messages between the DS spec and cdma2000.
- A hook and/or extension may be needed for overhead information update.