System support for WUS

Way forward

Related papers

5.1	S2-2002660	LS In	Action	LS from RAN WG3: Reply LS on assistance indication for WUS	RAN WG3 (R3-201397)	Rel-16	Responses drafted in S2-2002885 and S2-2002897
5.1	S2-2002885	LS OUT	Approval	[DRAFT] Reply LS on assistance indication for WUS	Qualcomm Incorporated	Rel-15	Response to S2-2002660
5.1	S2-2002897	LS OUT	Approval	[DRAFT] Reply LS on assistance indication for WUS	VODAFONE Group Plc	Rel-15	Response to S2-2002660
5.1	S2-2002881	CR	Approval	23.401 CR3582R7 (Rel-15, 'F'): System support for Wake Up Signal	Vodafone	Rel-15	Revision of (agreed, but postponed at TSG SA#87E) S2-2002552 from S2#137E. Revision also proposed in S2-2002986.
5.1	S2-2002882	CR	Approval	23.401 CR3583R2 (Rel-16, 'F'): System support for Wake Up Signal	Vodafone	Rel-16	Revision of (agreed, but postponed at TSG SA#87E) S2-2001686 from S2#137E. Revision also proposed in S2-2002987.
5.1	S2-2002883	CR	Approval	23.401 CR3600 (Rel-15, 'F'): System support for Wake Up Signal	Qualcomm Incorporated, Ericsson, ZTE	Rel-15	
5.1	S2-2002985	DISCUSSION	Agreement	Discussion on CN awareness of WUS	Huawei, HiSilicon	Rel-16	
5.1	S2-2002986	CR	Approval	23.401 CR3582R8 (Rel-15, 'F'): System support for Wake Up Signal	Huawei, HiSilicon	Rel-15	Revision of (agreed, but postponed at TSG SA#87E) S2-2002552 from S2#137E. Revision also proposed in S2-2002881.
5.1	S2-2002987	CR	Approval	23.401 CR3583R3 (Rel-16, 'F'): System support for Wake Up Signal	Huawei, HiSilicon	Rel-16	Revision of (agreed, but postponed at TSG SA#87E) S2-2001686 from S2#137E. Revision also proposed in S2-2002882.

Open issues and proposed solutions

Non-controversial aspects (common aspects in the input papers)

Issue 1: How to avoid increase of idle mode UE power consumption due to use of WUS?

- Limit use of WUS to last used cell for eNB and UE

Issue 2: How to limit of WUS by eNBs to last used cell?

- eNB determines last used cell based on Assistance Data for Recommended Cells in S1-AP Paging message

- MME populates Assistance Data for Recommended Cells in S1-AP Paging message with Information on Recommended Cells and eNBs for Paging (if provided by eNB)

Open issues and proposed solutions

Controversial aspects

Issue 3: How to ensure that Information on Recommended Cells and eNBs for Paging is provided by last used eNB?

- Proposal A (Vodafone) S2-2002881
  - MME to construct Assistance Data for Recommended Cells for WUS-capable UEs based on User Location Info IE/Information for EC received as part of last S1AP release
  - MME to include last used cell ID within the Assistance Data for Recommended Cells at least when paging WUS-capable UEs in WUS-capable eNBs
  - MME determines whether UE is WUS capable from the UE Radio Capability for Paging Information stored in the MME
  - MME determines if eNB is WUS capable based on explicit indication from eNB

- Proposal B (Huawei) S2-2002986
  - Same as 3a except
    - MME determines whether UE is WUS capable based on explicit indication from eNB in S1-AP UE CAPABILITY INFO INDICATION message.

- Proposal C (QC, Ericsson, ZTE) S2-2002883
  - Networks that intend to deploy WUS are assumed to ensure that WUS-capable eNBs provide Information on Recommended Cells and eNBs for Paging to MMEs and that MMEs reflect this information back to eNBs while paging.

Way forward

How to ensure that Information on Recommended Cells and eNBs for Paging is provided by last used eNB?

- Option 1: **Mandate** WUS-capable eNBs to provide the Recommended Cells for Paging IE to the MME when releasing the S1 connection or suspending the UE context.

- Option 2: Document an **assumption** (in a note) that networks that intend to deploy WUS are assumed to ensure that WUS-capable eNBs provide the Recommended Cells for Paging IE to the MME when releasing the S1 connection or suspending the UE context.