

Source: Ericsson
Title: Paging for E-UTRA
Agenda Item: 13.1.3
Document for: Discussion and Decision

1. Introduction and Discussion

Paging is used for network-initiated connection setup. An efficient paging procedure should allow the UE to sleep with no receiver processing most of the time and to briefly wake up at predefined time intervals to monitor paging information from the network.

In WCDMA, a separate paging indicator channel, monitored at predefined time instants, is used to signal the UE to receive the paging information. If the UE receives a paging indicator, it performs further processing of paging information transmitted on a separate channel. As the paging indicator is significantly shorter than the duration of the paging information, this approach minimizes the time the UE is awake.

For LTE, paging can rely on the shared control channel¹, monitored at predefined time instants (DRX cycle, configured by higher layers). This is illustrated in Figure 1. No paging indicator channel is necessary as the potential power savings are very small thanks to the short subframe duration. Instead, the shared control channel serves the purpose of a paging indicator. If the UE detects scheduling control information, through the presence of its own identity or a common paging group identity, the data part of the downlink transmission is received and further processed by higher layers. Otherwise, the UE reverts to sleeping until the next paging occasion.

Relying on the shared control channel for paging avoids having to introduce specific L1 structures. Instead, paging relies on already existing L1 structures and can be seen as scheduling implementation. The same principle can be applied to both FDD and TDD. The DRX cycle is configured by higher layers, as is the location in frequency for the shared control channel used for the paging operation.

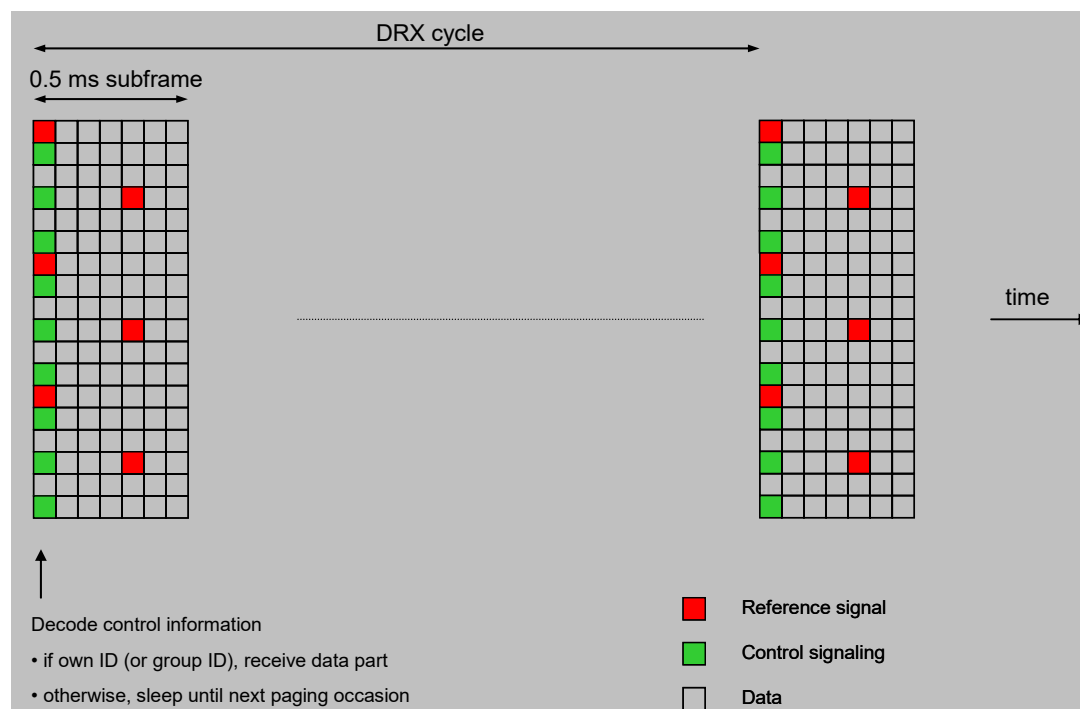


Figure 1: Schematic illustration of the paging mechanism (the amount of reference signals, location of control information, etc is not to scale).

¹ The name 'shared control channel' is used to denote the part of the subframe carrying control information for operation of downlink scheduling, similar to the HS-SCCH in HSDPA.

2. Conclusion

It is recommended to include the text proposal in [1] into TR25.814.

3. References

[1] R1-060577, “Text Proposal on E-UTRA Paging”, Ericsson