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Report on

SEMI-PERSISTENT RRC PROTOCOL FOR MACHINE TYPE COMMUNICATION

A report submitted for the partial fulfillment of the requirements for Mini Project of

BACHELOR OF TECHNOLOGY

IN

ELECTRONICS AND COMMUNICATION ENGINEERING

Submitted by

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

MINI PROJECT

(SEMI-PERSISTENT RRC PROTOCOL FOR MACHINE TYPE COMMUNICATION)

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SEMI-PERSISTENT RRC PROTOCOL FOR MACHINE TYPE COMMUNICATION

ABSTRACT

In this project, we investigate the design of a radio resource control (RRC) protocol in the framework of Long Term Evolution (LTE) for that our generation of projects regarding provision enabling technology for the emerging paradigm of the Internet of Things. Due to the nature and envisaged battery-operated long-life operation of MTC devices without human intervention, energy efficiency becomes extremely important. This paper elaborates the state-of-the-art approaches toward addressing the challenge in relation to low energy consumption operation of MTC devices. And proposes a novel RRC protocol design, namely semi-persistent RRC State transition (SPRST), where the RRC State transition is no longer triggered by incoming traffic but depends on pre-determined parameters based on traffic patterns obtained by exploiting network memory. The proposed RRC protocol can easily co-exist with the RRC protocol in LTE. The design criterion of SPRST is device and the signaling procedure is investigated accordingly. Based upon the simulation results, it is shown that the SPRST significantly reduces both the energy consumption and signaling overhead while at the same time guarantees the quality of service requirements.