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RAN Multihoming and Load-Balancing for IoT using LISP

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Redundancy and throughput are main conditions for IoT involving Critical Communications and multimedia streaming (“Internet of Multimedia Things”). One particularity of 5G networks will be the proliferation of different/heterogeneous radio networks (femtocells and offloading capabilities, new energy efficient radios, virtualized RAN) and the possibility for IoT objects to connect with dual or multiple radio access networks. Smart IoT multihoming, and multiple-RAN connectivity management, including automatic air interface selection, optimal weighted load-balancing between interfaces, are challenges for the reliability of future networks.

This paper focuses on the possibility of using LISP (Locator Identifier Separation Protocol) for multihoming and load-balancing purposes and presents an illustrative scenario including the case of mobile IoTs (e.g. – “things” part of vehicular or public transportation systems) that are also intensive bandwidth consumers, like the case of connected multimedia “things”. Furthermore an innovative method for LISP addressing based on location, using GNSS/GPS coordinates instead of IP addressed, is presented.

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