



# Overview Justifications

- ❑ The IoT market is very diverse. There are IoT applications that connect rarely (compared to smartphones) but when connected use medium/high bandwidth, e.g. on demand surveillance, and such devices may be battery powered if battery life can be sufficient. NR also provides some unique possibilities, e.g. a choice between connection by licensed or unlicensed spectrum, which can be attractive for e.g. home equipment e.g. use licensed spectrum if there is no local gateway / access point.
  - NR is suitable as a medium/high end IoT technology.
  - NR is suitable as a home IoT technology.
- ❑ NR evolution could with limited effort contain UE relaying options for coverage, e.g. Sidelink UE relay.
  - Coverage is a main requirement for IoT, and UE based relay is a good solution direction where IoT operators can extend coverage without requiring coverage extension by the telco operator.
  - This strengthens NR suitability as a general IoT technology.
- ❑ Another gap / low hanging fruit for NR w.r.t. IoT is to take further steps in the power and overhead efficiency of stand-by mode and low rate background traffic mode.
- ❑ Focus could be FR1

# Coverage and Deployment

- ❑ IoT communication provisioning is most often a b2b case for which coverage is very important.
  - IoT cases can benefit by methods of coverage extension that that can be employed without the need for a spectrum owning operator to do hand-on work.
- ❑ Suggested objectives:
  - UE relay by NR sidelink for general coverage extension, building on v2x unicast work.
  - End device Power efficiency enhancement for UE side-link relay.
- ❑ Motivation: Coverage extension for IoT devices.

# Idle/Inactive Mode Power Consumption

## □ Suggested Objectives

- NR support for eDRX for RRC\_Inactive and RRC\_Idle
- NR support for Wake-up signal for paging

## □ Motivation: Stand-by power consumption

# Background Traffic, Signaling Enhancements etc.

## □ Suggested Objective

- Support for Early Data Transmission with normal RACH and with 2-step RACH.

## □ Motivation: Low overhead low power consumption Control plane for small transmissions, e.g. IoT devices, background traffic etc.



*everyday genius*