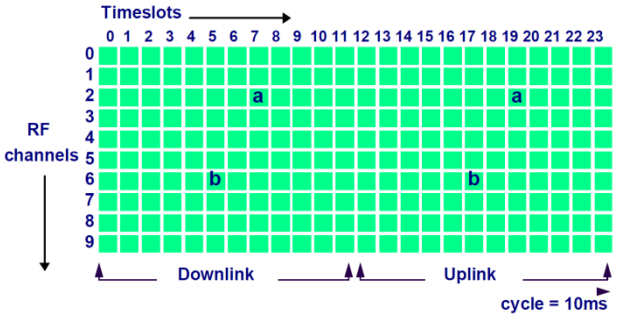
DECT ULE INTRODUCTION

- DECT is a digital wireless technology developed and standardized by ETSI and it is part of the IMT2000 family.
- DECT technology has been a continously evolved through more than 20 years with improvement of the core technology within HD voice and internet
- The latest addition – DECT Ultra Low Energy – is a low power communication technology, which can cooperate and co-exists with legacy DECT equipment
- Leveraging on DECT's strong points:
  - Long range, interference free, low cost silicon, interoperability
- ... DECT ULE brings multi-year battery life time to applications

ULE TECHNOLOGY OVERVIEW

- **PHY**: TDMA/FDMA/TDD, 24 timeslots, 10(5) RF carriers, GMSK modulation , 1.152Mbps, 1.724MHz bandwidth, 250mW TX power, reserved/unlicensed frequency band 1880-1900MHz (US: 1920-1930MHz), multi-cell, star topology, range 75-300meters, antenna diversity
- **MAC**: Dynamic channel selection, interference avoidance, payload size: 80 or 40bytes, reliable packet delivery, circuit and packet mode, exponential back-off, various sleep modes (locked/un-locked), paging/broadcast



ULE TECHNOLOGY OVERVIEW

- **DLC**: sequencing, segmentation, SDU size 500bytes (or larger), single packet SDU = 32bytes, per packet encryption and authentication by use of CCM (AES-128)
- **NWK**: pairing/registration, peer authentication including identity check, addressing supports up to 4096 nodes per FP, multi-cell roaming, service negotiation and configuration
- **APP**: The standard supports multiple application protocols. ULE Alliance is defining HAN-FUN, RTX has drafted 6LoWPAN (IPv6)
- Support for variety of applications
  - Sensors with different range of reporting interval
  - Actuators
- Power consumption: down to 3-4uA

DECT ULTRA LOW ENERGY

ADVANTAGES

- OPEN STANDARDISED TECHNOLOGY
  - DECT is specificed by ETSI EN-300 175 1-5
  - Multiple chipset vendors
  - WW Licensed frequencies available free from royalties

- EASY INSTALLATION
  - Easy setup and pairing
  - Maturity using DECT - established as technology by ETSI in 1993
  - House coverage and high capacity (>500) on a single Home Gateway
  - Interference free – ”Listen before talking”

- COST-EFFECTIVE
  - DECT already present in Millions of standard Home Gateways
  - Over 300 million DECT chips sold every year
  - Interoperability secured by certification program