An Overview of Bluetooth and IEEE 802.15

Tom Siep
Member Group Technical Staff
Texas Instruments

siep@ti.com

Outline

- What is Bluetooth?
- Bluetooth Architecture
- IEEE 802 Architecture
- The IEEE 802.15 Project
- Timeline for 802.15

What is Bluetooth?

What is Bluetooth?

Description

- Bluetooth is an open specification for wireless communication of data and voice
- Low-cost short-range radio link
- Stationary and mobile communication
- Protected ad hoc connections

  - Codename: Bluetooth.
  - A Global Specification for Wireless Connectivity.

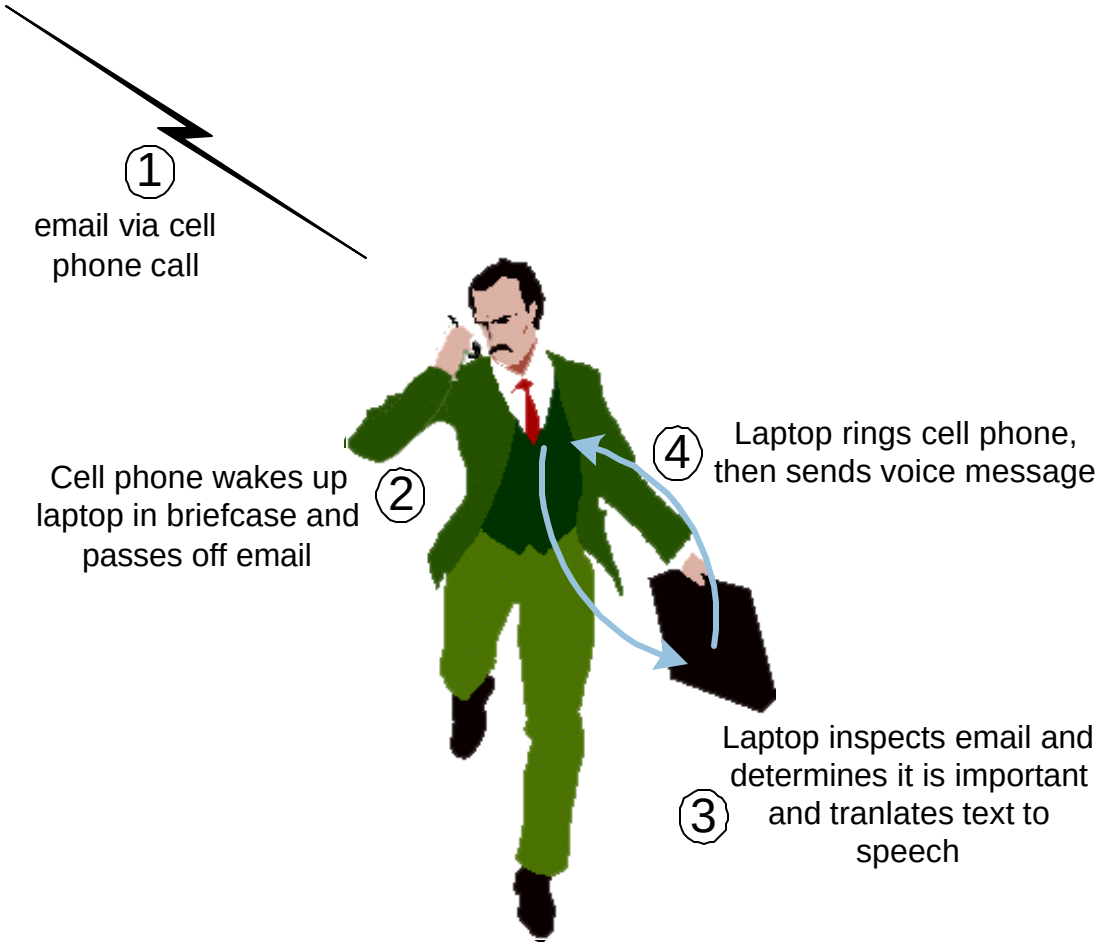
What is Bluetooth?

Technical Description

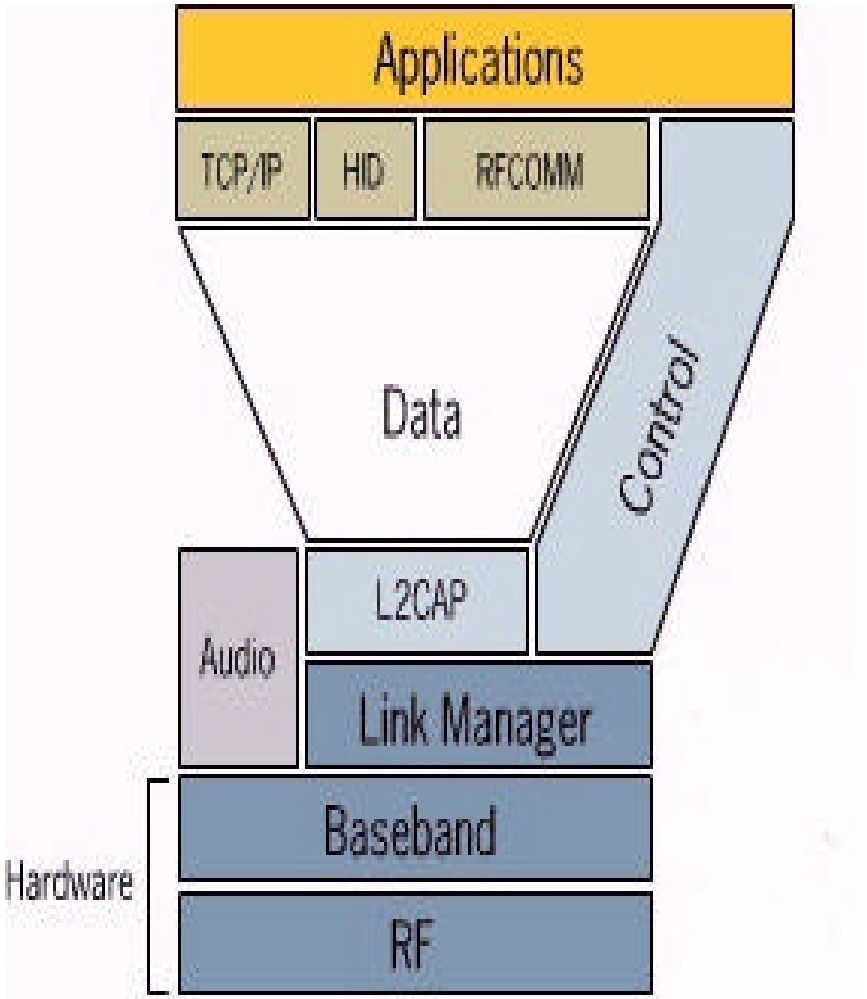
- Replacement of cables with one universal, inexpensive short-range radio link
- Operates in the unlicensed ISM band at 2.4 GHz
- Frequency hopping is used to combat interference and fading
- A shaped, binary FM modulation is applied to minimize transceiver complexity
- Gross data rate is 1Mb/s
- Time-Division Duplex scheme is used for full-duplex transmission

What is Bluetooth?

The “Briefcase Trick”

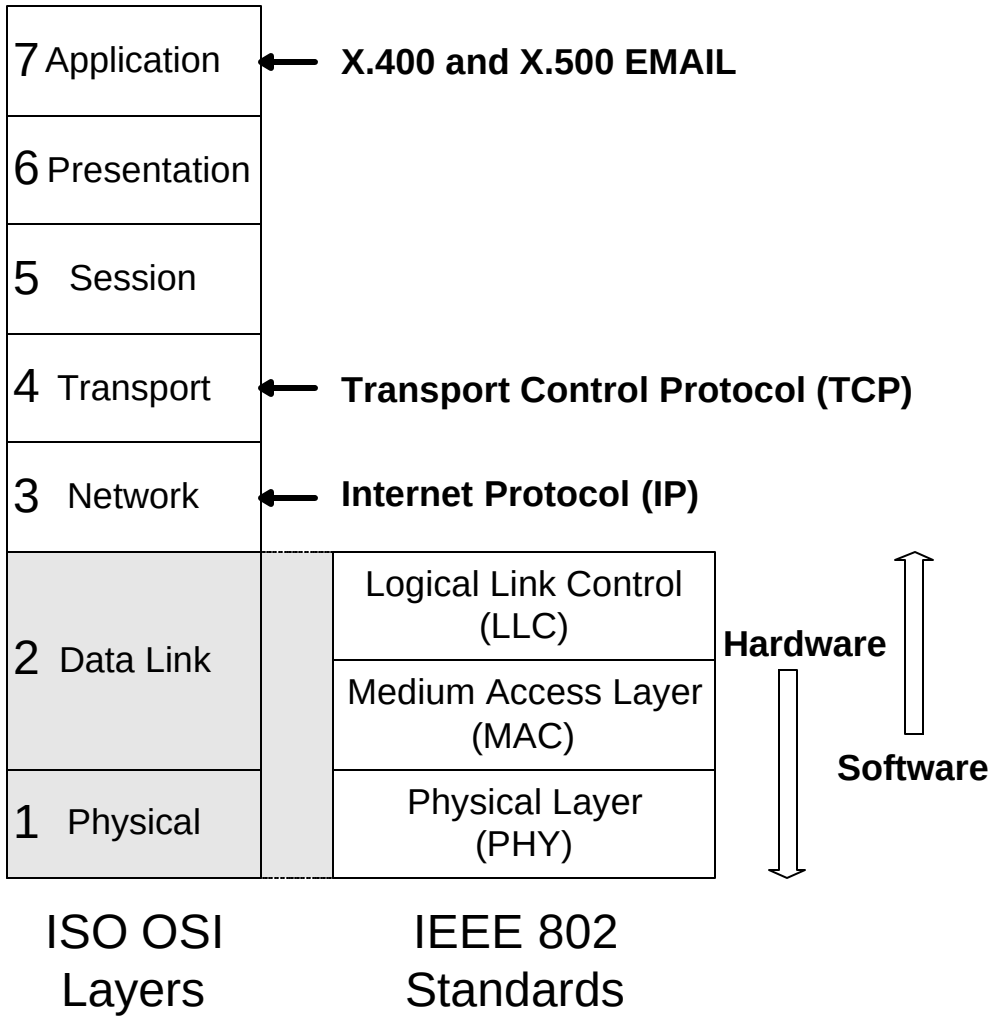


Bluetooth Architecture



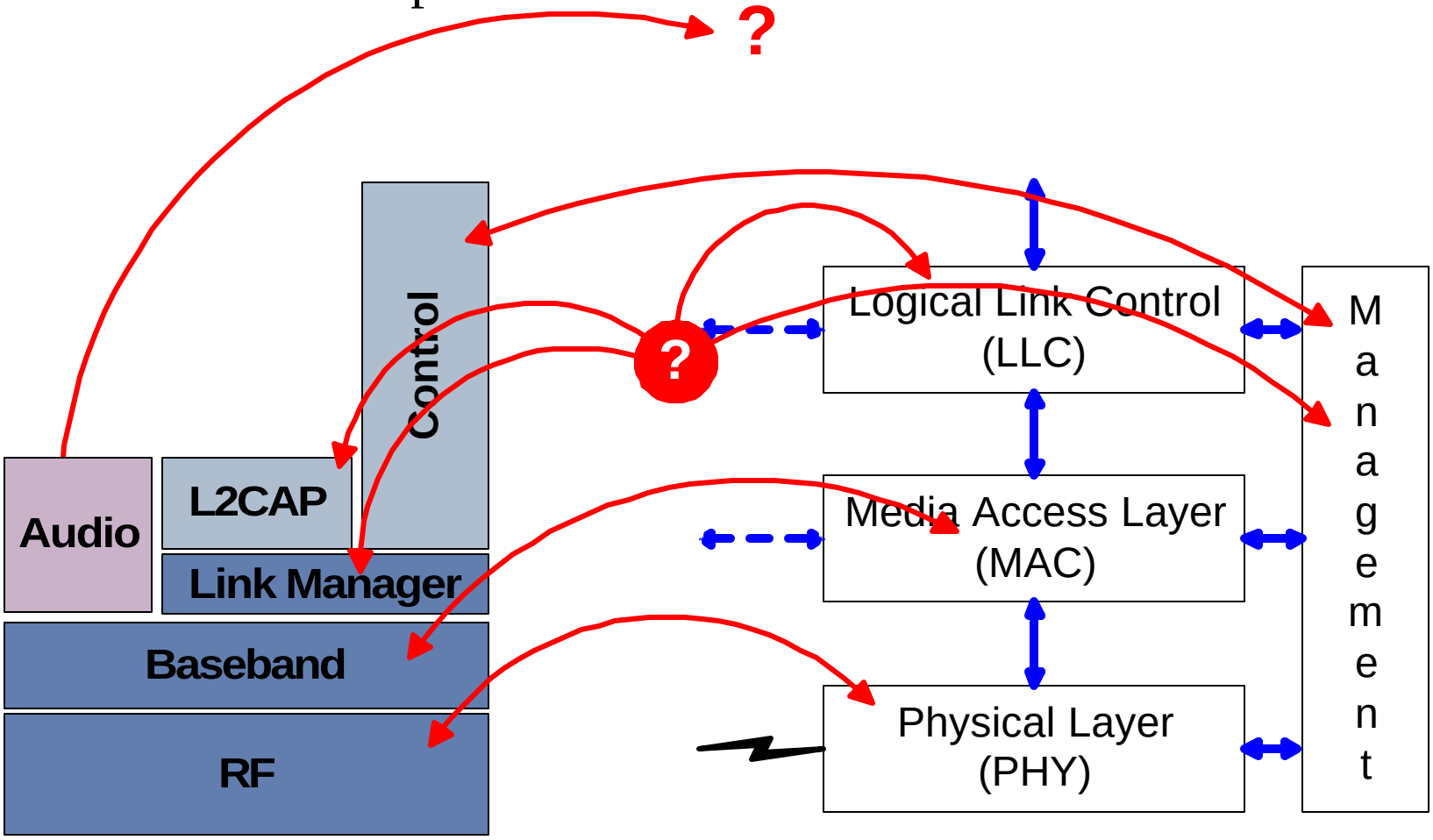
IEEE 802 Architecture

ISO OSI and IEEE 802



The IEEE 802.15 Project

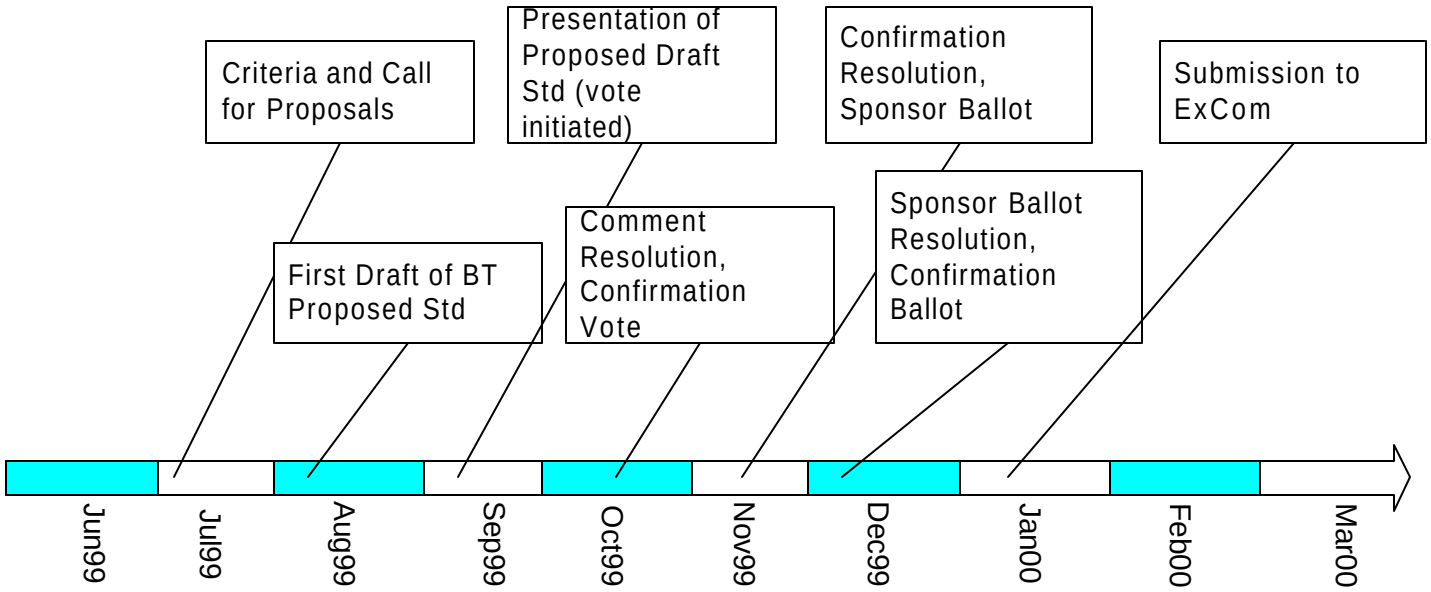
Task Group 1: Make an 802/Bluetooth Standard



Bluetooth

IEEE 802

Timeline for 802.15



Questions?

Tom Siep
Member Group Technical Staff
Texas Instruments

siep@ti.com