MAMS Project

Medical Astronaut Monitoring System

- What is the MAMS Application?
- Bluetooth Specifics
- Software Development
- Bluetooth and the MAMS Application
- Future of Bluetooth

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What is the MAMS Application?

- Data Link to Communicate Vital Signs and Equipment Status
- Full Duplex Voice Communication
- Simulates the Collection of Data and Voice

Bluetooth Specifics

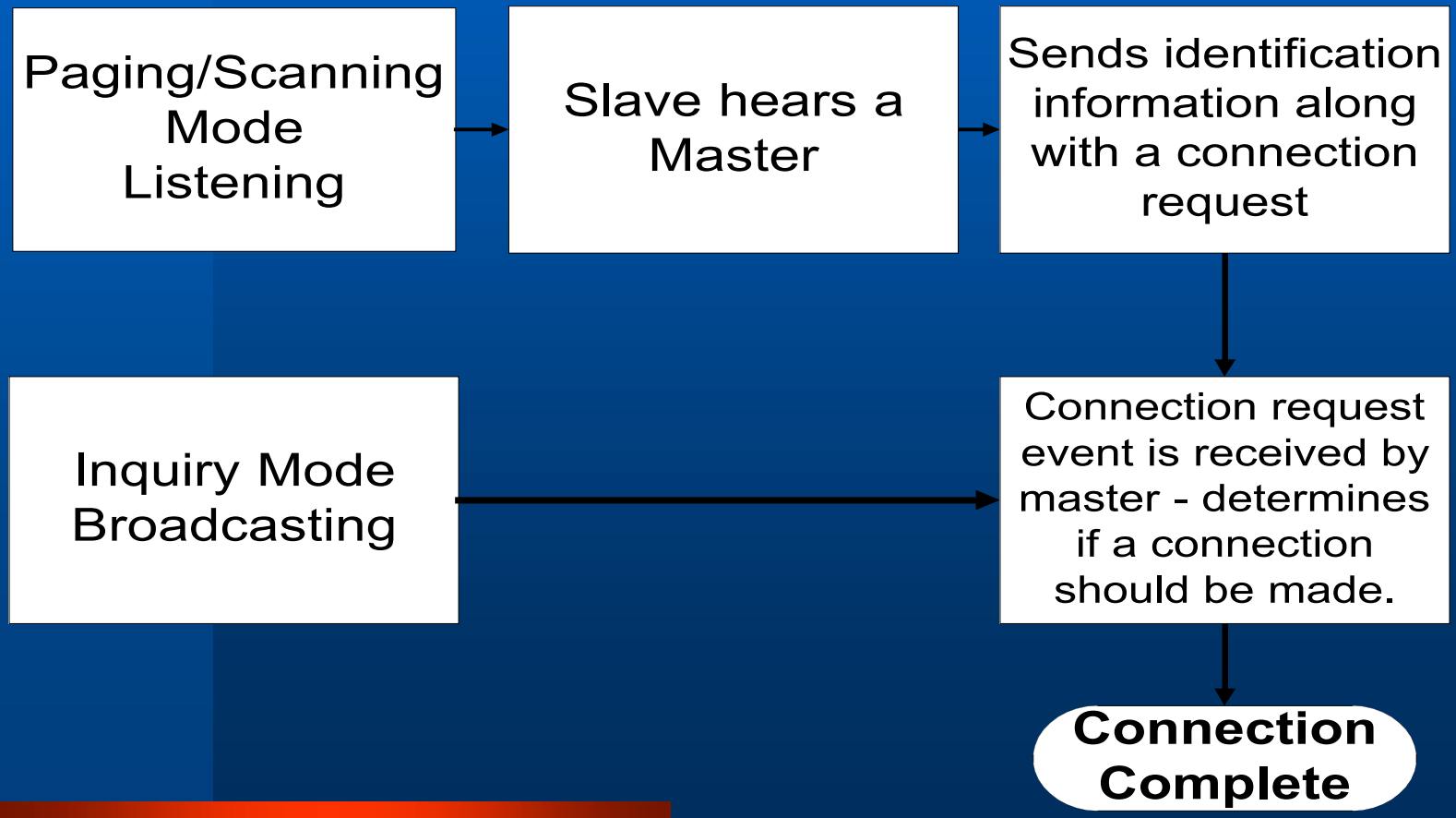
- How did Bluetooth come about?
  - Need for Low Power/ Low Cost Wireless Solution
- What Advantages Does Bluetooth Provide?
  - Expansion of the PAN
  - Benefits Over IEEE 802.11

Bluetooth Specifics…

- Hardware Capabilities
  - **Range is from 10m – 100m**
  - **On board error correction**
  - **Frequency band between 2.4 – 2.48GHz**
  - **Frequency Hopping Spread Spectrum**

More on Bluetooth Specifics

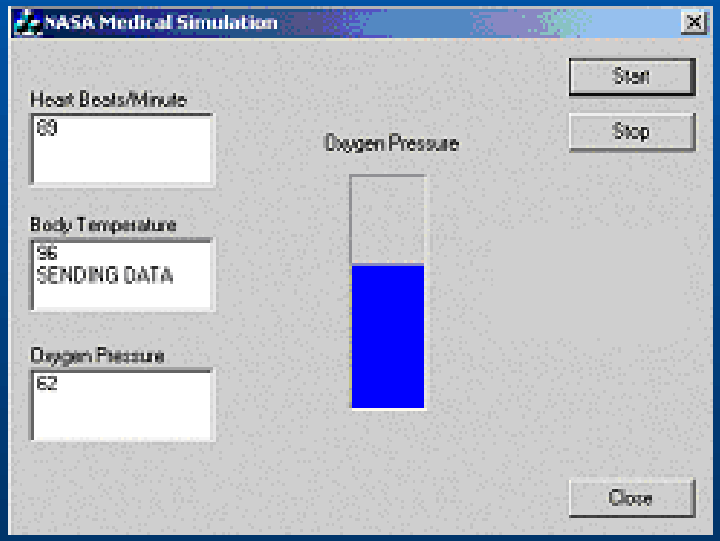
The Master/Slave Concept – How do the Boards Connect?



Software Development

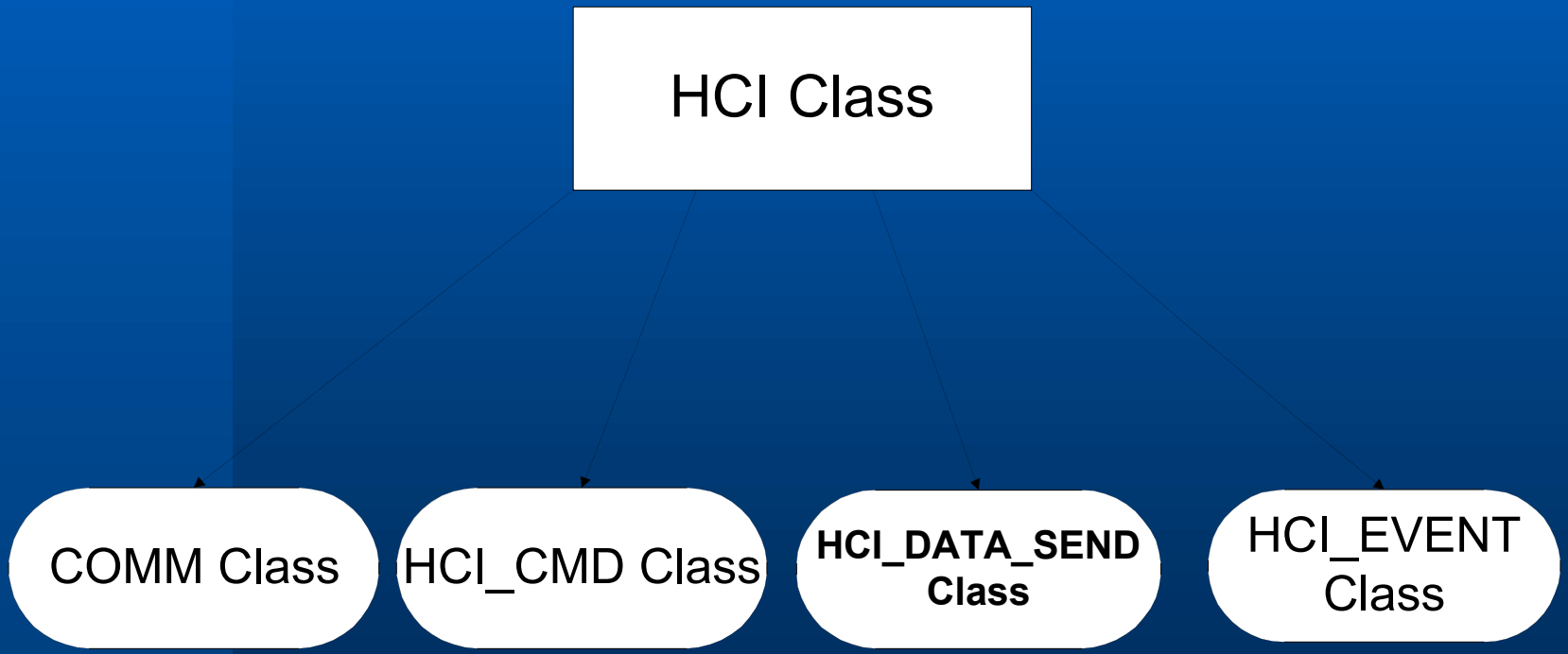
- **Bluetooth Communication Software**

- **GUI Software**



Bluetooth Communication Software

- **Class Design**



GUI Software

- MFC Design
- Master Application (MAMS)
  - Single thread that polls and blocks for data
- Slave Application (NASA Simulation)
  - Three threads, reading data generated by a file to simulate the vital signs

Bluetooth and the MAMS Application

- **NASA Simulators represent the vast PAN that Bluetooth technology will support**
- **MAMS Application will be used to monitor astronauts while in space**

Future of Bluetooth

- Space Applications
- Target Price for a Bluetooth Chip ~ $1.50
  - Embedded Application (Networking)
  - Handheld Solutions
  - Endless Possibilities

QUESTIONS?