

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

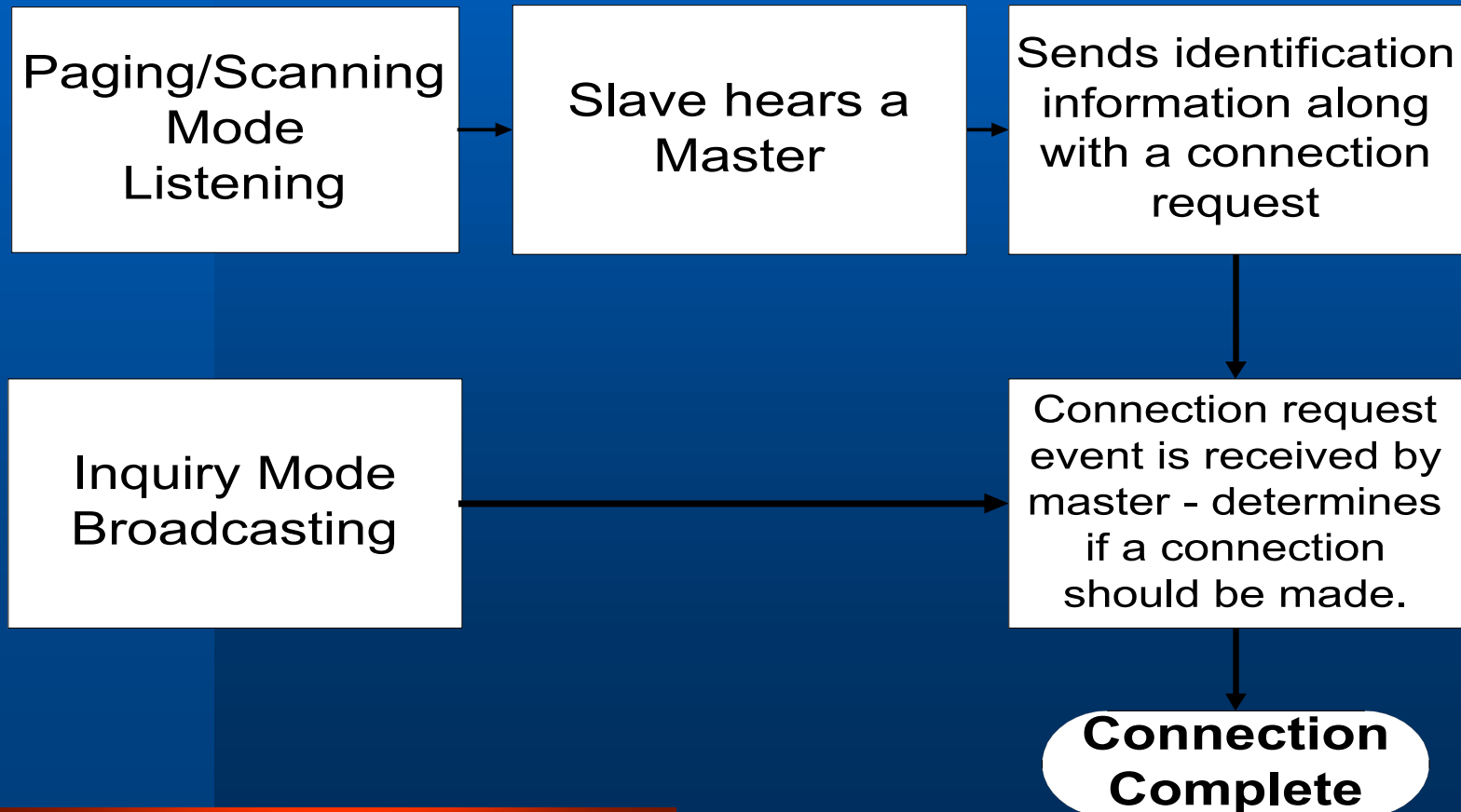
- **How did Bluetooth come about?**
 - **Need for Low Power/ Low Cost Wireless Solution**
- **What Advantages Does Bluetooth Provide?**
 - **Expansion of the PAN**
 - **Benefits Over IEEE 802.11**

Bluetooth Specifics...

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

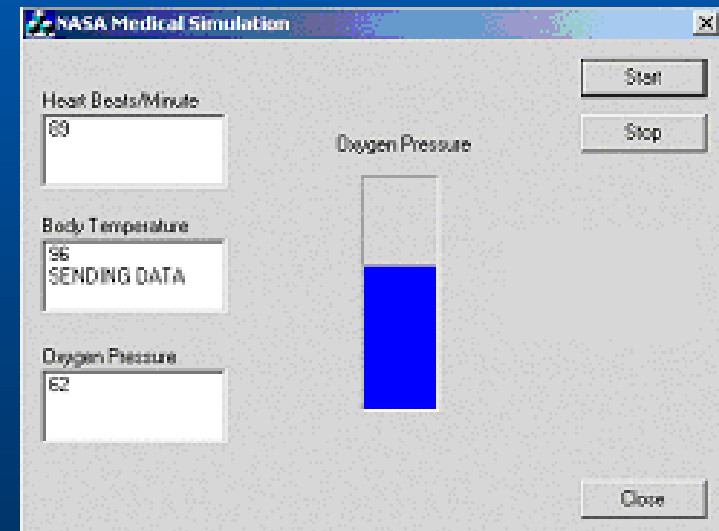
More on Bluetooth Specifics

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



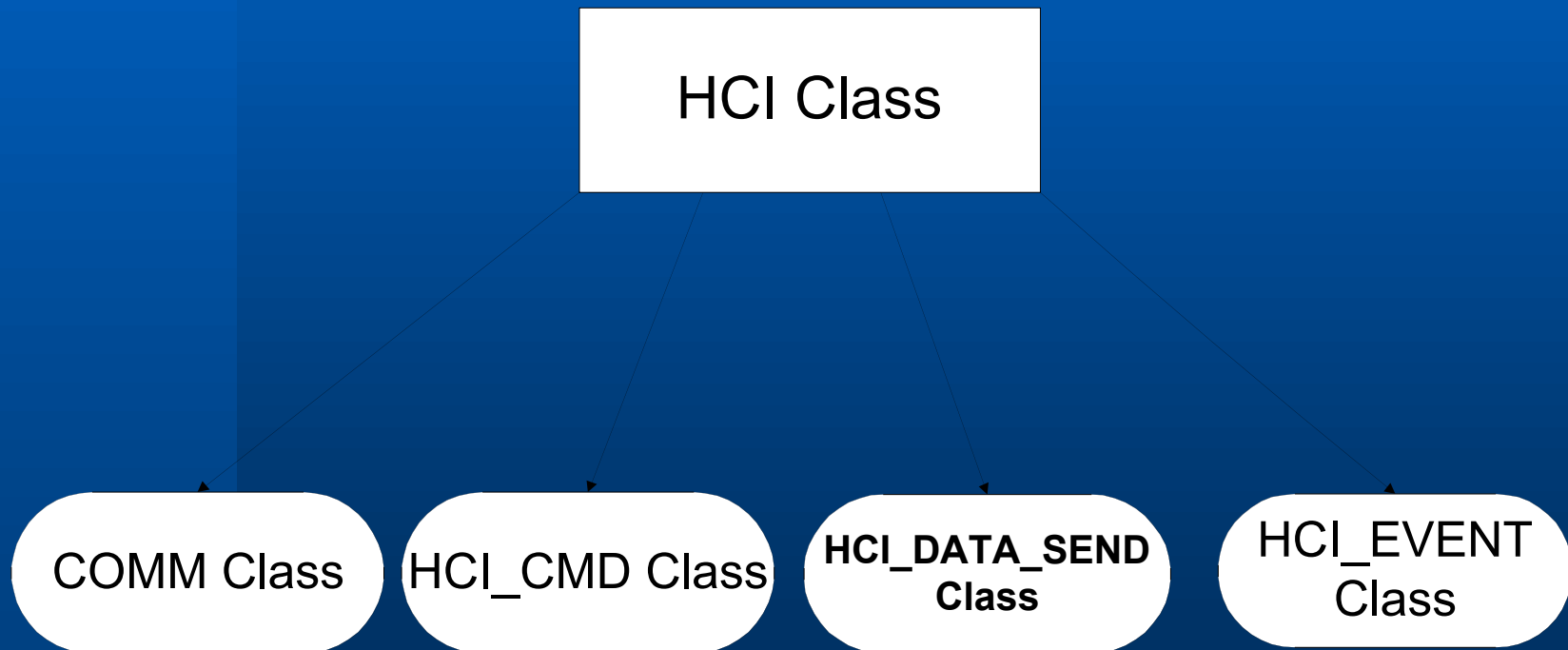
Software Development

- 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?