

Graphical User Interface

for a Multi-node Wireless Intercom System

Magali Figueroa

University of California, Santa Cruz
Computer Engineering

Faculty Mentor: Jan Rabaey

Grad Mentor: Fred Burghardt

Berkeley Wireless Research Center

Summer Undergraduate Program in Engineering Research at U.C. Berkeley

Project Goals - At a Glance

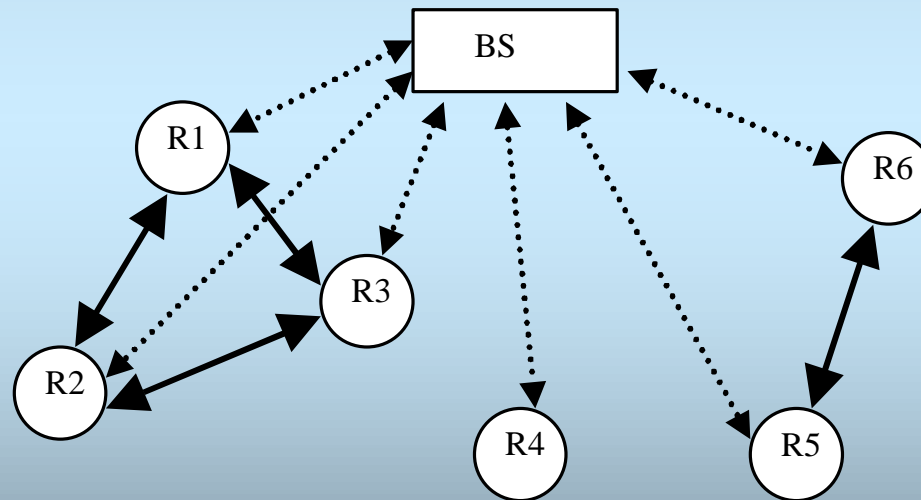
- **• Create a graphical user interface for a hand-held wireless voice intercom unit.**
 - Build a set of simple graphical primitives that represent buttons and lamps.
 - Create a control panel for initiating and terminating connections with two other intercom units in a limited prototype system.
- **• GLIB documentation**
- **• Lab test procedures**

Task Outline

- Understand the basics of the Intercom system.
- Understand an existing graphics library in detail.
- Write the application code to create buttons and lamps and to interact with other parts of the system.
- Test the code on the bench using the Intercom test board.

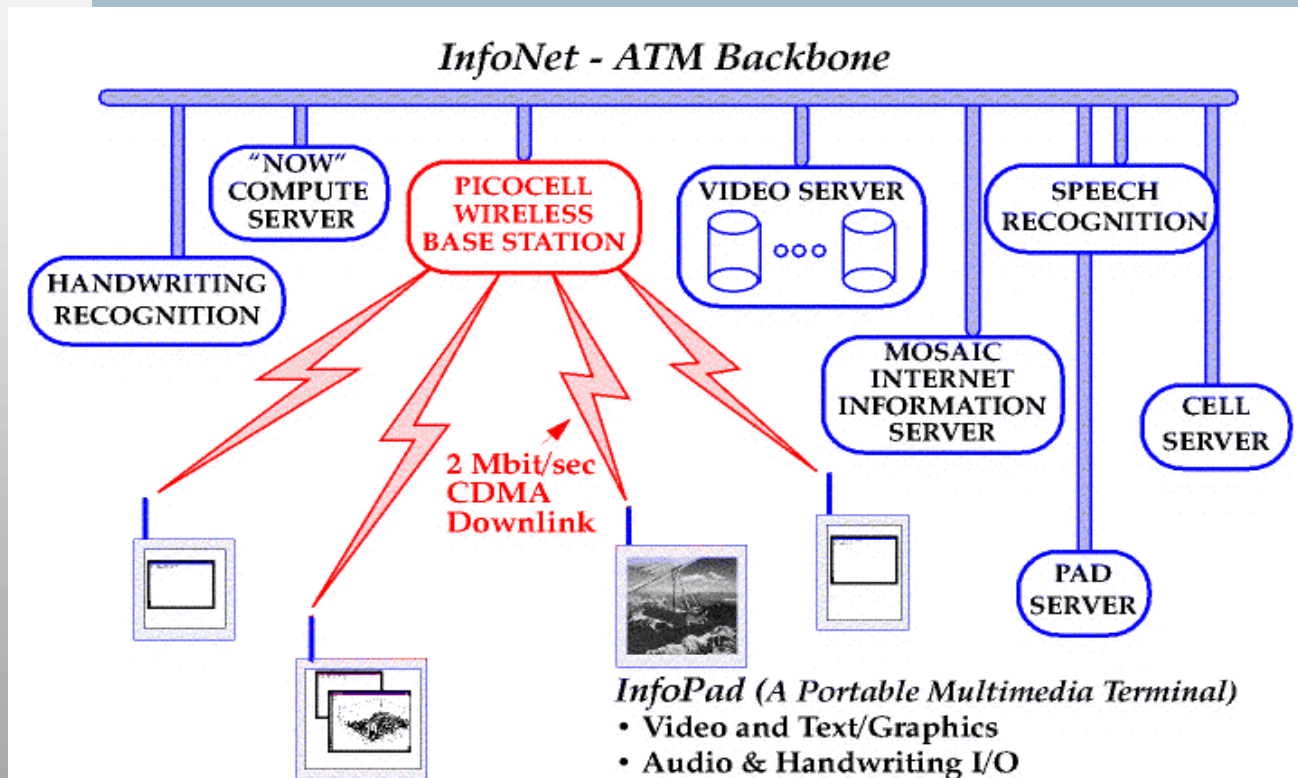
How the Intercom system works

The basic system is composed of a single base station and two or more remote nodes.



- ◄ ► Connection of nodes to the base station
- ↔ Example conversation from node to node

Intercom Derived From InfoPad



- Processor hardware architecture
- Display capabilities
- Physical enclosure case

- LCD screen
- touch-screen

Effective use of the graphics library

⊙ ANSI 'C'

⊙ Useful operations to draw images

- lines, arcs, text, color options, and styling features

⊙ Documentation as a Learning Tool

- analysis
- text editor
- bench testing

Interface Design

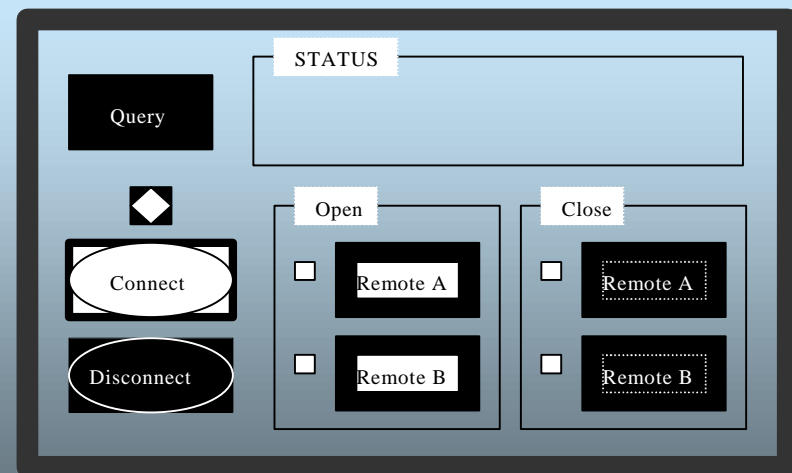
⊗ Coordination of events

- Connect to the base station for the local unit
- Disconnect the local unit from the base station
- Open a full-duplex voice channel to a remote unit
- Close the voice channel to a remote unit
- Send a query request to the base station

⊗ Features

- buttons create an action
- lamps indicate a response to an action

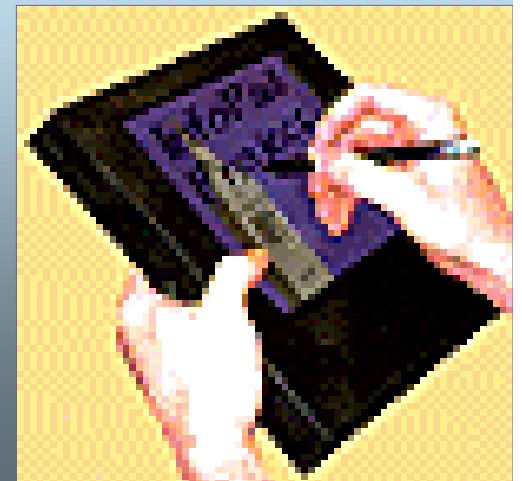
⊗ Capabilities and limitations of the hardware and software



Interaction Mechanisms

☉ Implement ANSI 'C' code to access the control panel to initiate and terminate connections.

- Touch-screen interface
- Communication to the base station
- Visual communication with the user



Bench testing

• Intercom testing board

- ARM microprocessor
- LCD screen

- Learning method
- Testing application code
- Development of graphical user interface

• PROCEDURES

- Turn on power
- Angel runs on ARM
- Start ADW
- Load Application
- Execute Application

Conclusions

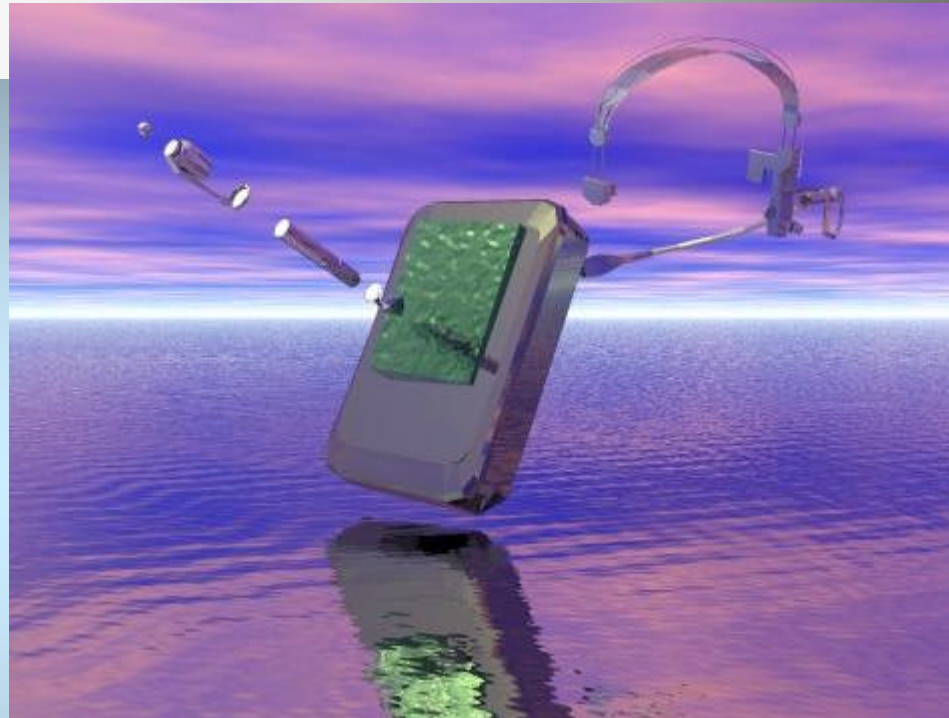
• Design and implementation of graphical user interface

- Intercom system
- graphics library
- application code
- bench testing



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