Team 7

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Design Review
**Cell Phone to Landline System**

- Basic cell phone operations from landline phone
  - Send/Receive calls from landline via cell phone
  - Potential to develop additional features
- Replace or co-exist with landline system
Design Approach

• PC with Linux distribution
• Asterisk
  – Telephony engine and toolkit
  – Networks the telephone system
• Telephone Network Interface card (TNIC)
  – Interfaces landline system with computer
• Chan-Mobile
  – Asterisk channel driver
  – Uses cell phone as FXO port
  – Communicates via Bluetooth
• Text Based User Interface
  – Improve ease of use
Final Design

- openSUSE 10.3
  - Asterisk 1.6.0.7
    - Asterisk Add-ons
    - Chan-mobile
    - Asterisk GUI
  - BlueZ 4.37 Bluetooth Library
  - DAHDI & Libpri Library
  - Text Based User Interface
  - Start-up script
- ZapMicro ZMA400P11 TNIC
- USB Bluetooth Adapter
Block Diagram

CellSync System

Asterisk

Dialplan

Chan-mobile

Incoming_Cell

Outgoing_Cell

Incoming_Landline

Outgoing_Landline

Bluetooth Adapter

Cell Phone

Cell Phone Connection

Phone Connection

Landline Connection

TNIC

FXO Port

FSX Port

Home Phones

Bluetooth Connection

Idea → Design Approach → Final Design → Block Diagram → Prototype → Product → Questions
Prototype

Barebones Computer

– Goal
  • Develop prototype that closely resembles minimum operating criteria for a marketable product

– Result
  • Dell Computer
  • Stripped Unnecessary Components
  • Modified Enclosure
    – Small Form Factor
  • Reasonable Proof-of-Concept
  • Text based User Interface
  • Start-up script
Marketable Product

- **Advantages**
  - Smaller
  - Easier to use
  - Less power consumption

- **Disadvantages**
  - More expensive
  - Less flexibility in features
  - Still needs to be fully realized

- Small form factor
- Proprietary OS and software
- No I/O devices
- $150 for “From Scratch” Method
- $300 for “Modules” Method