NewBalance Technologies

Equilibra
Sensory Balance Assistance Device

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Outline

- Our Team
- Equilibra
  - The Need/Problem
  - Our solution
  - Marketing Justification
  - System Overview
  - Operation
  - Challenges
  - Future Development
- Questions
- Demo

NewBalance's Team

- Atefeh Palizban, CEO
- Siavosh Jalili, VP Business Planning
- Sakshi Nagalia, CFO
- Jerry Yu, VP Technical

Background

- Balance Disorder: difficulty maintaining balance
- Involuntary inclinations can result in the fall and possible fracture of bones
- Caused by illnesses such as Menier's disease, Parkinson and aging

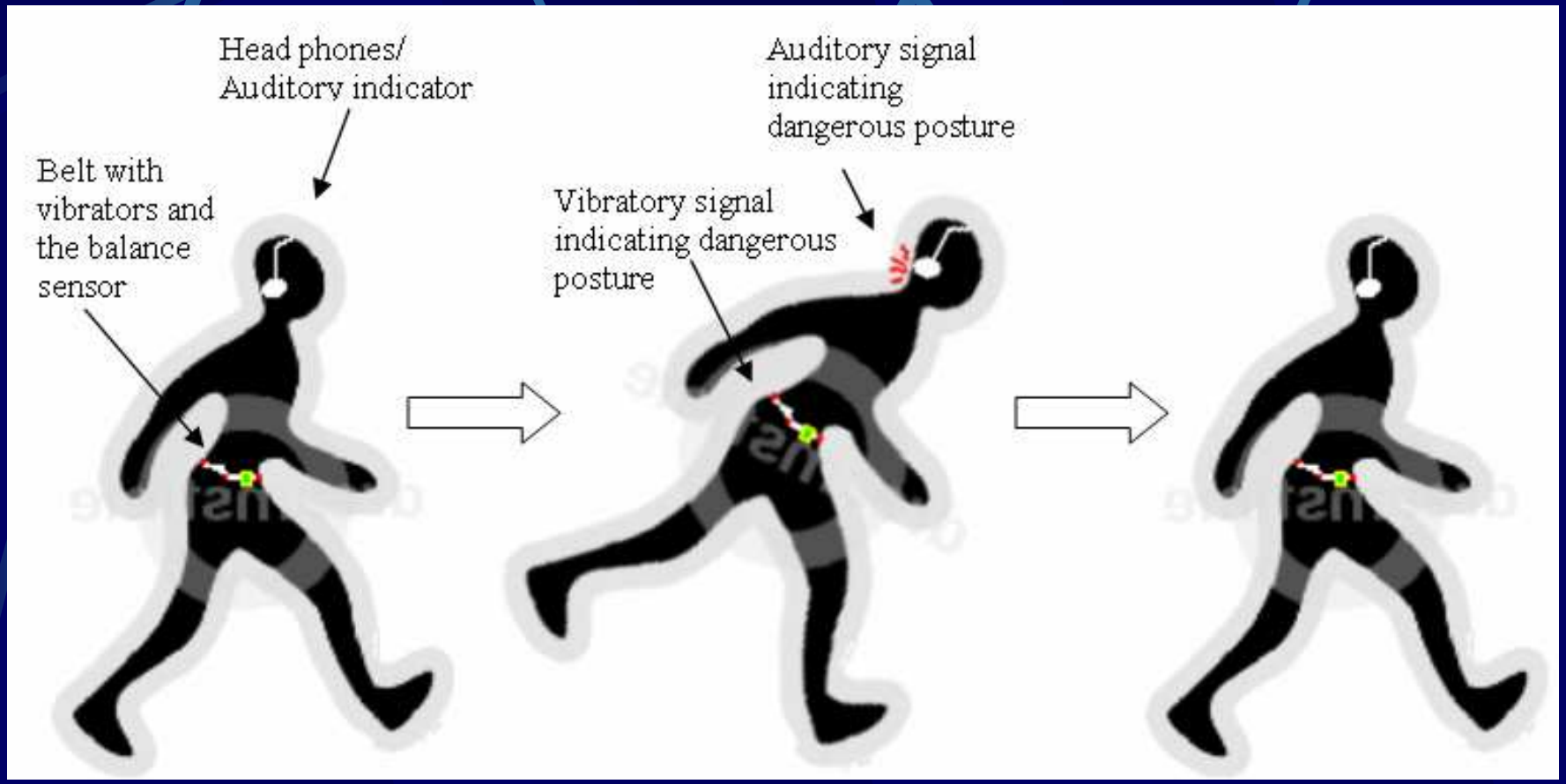
Potential Market

- People with Balance Disorder: 2 million Americans and 50,000 Canadians
- Elderly: Medical studies show that a 50-year-old woman has a similar lifetime risk of dying from a hip fracture as from breast cancer.

Existing Solutions

- Walker
  - Inconvenient
- Vestibular Exercises
  - Limited impact
- Several R&D projects
  - No existing commercial product

Application Example of Equilibra



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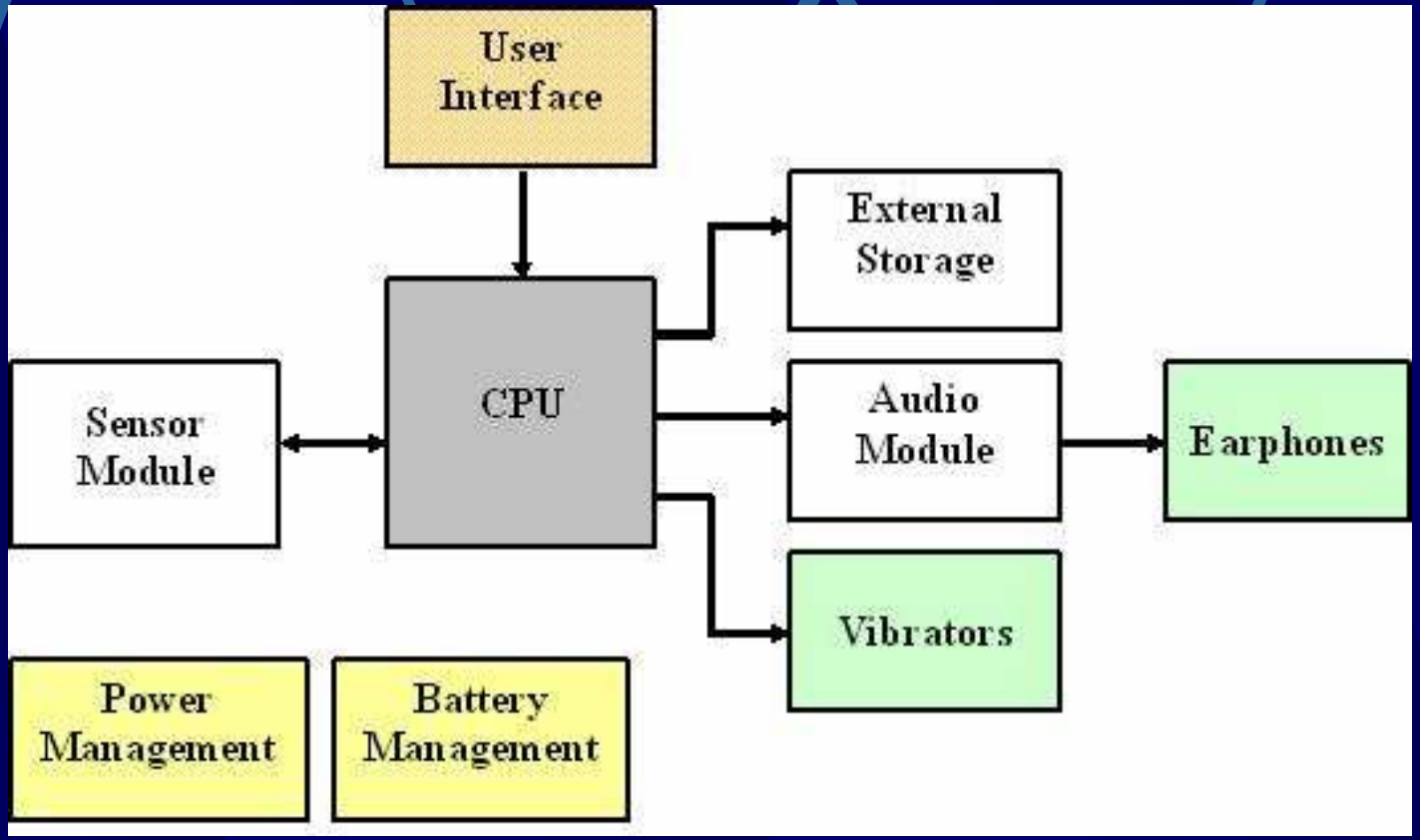
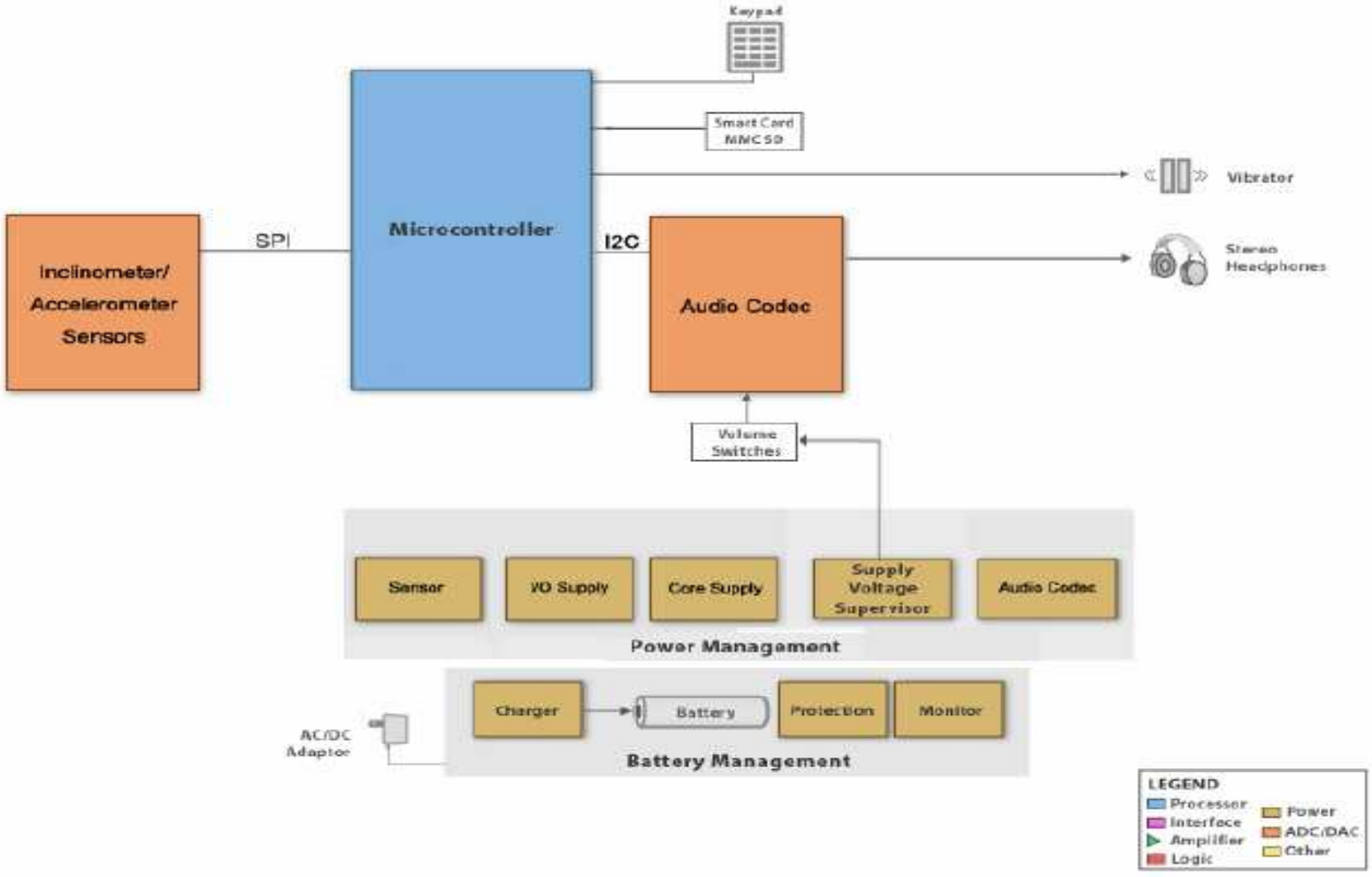
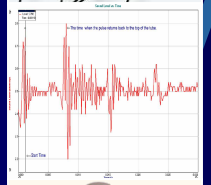
System Overview

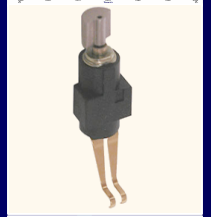


System Overview



Features





- Headphone enables the patient to hear auditory signals generated by the device.
- Auditory signals are generated in left and right earphone based on the direction of tilt.
- Four vibrators are placed around waist and will vibrate when the user leans in one of the four directions.
- Compact Flash card works as external memory unit for recording the historical data of the patient for diagnoses.
- Rechargeable battery enables user to charge the device using a AC adaptor or car charger.

Operation

- The mono-tone audio signal will be indicative of the direction of inclination to the right or left.
- Inclination to the front or back will generate different pitch tones.
- the loudness of the audio signal will vary with level of inclination.

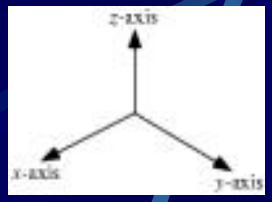
Challenges

- Time/Resources Constraints
- Sensor
  - Currently: Dual-Axis Inclinometer
  - Problems
    - Accuracy/Volatility
    - Limitations
  - Better Solution

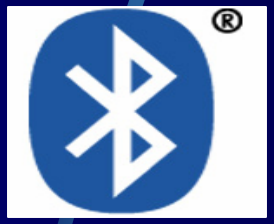
Challenges

- Transactions
  - Development System
    - Delay
    - Microcontroller
  - Accelerometer
  - Audio Codec

Future Development



- 3-Axis Accelerometer or Gyrsocope will replace the current sensor

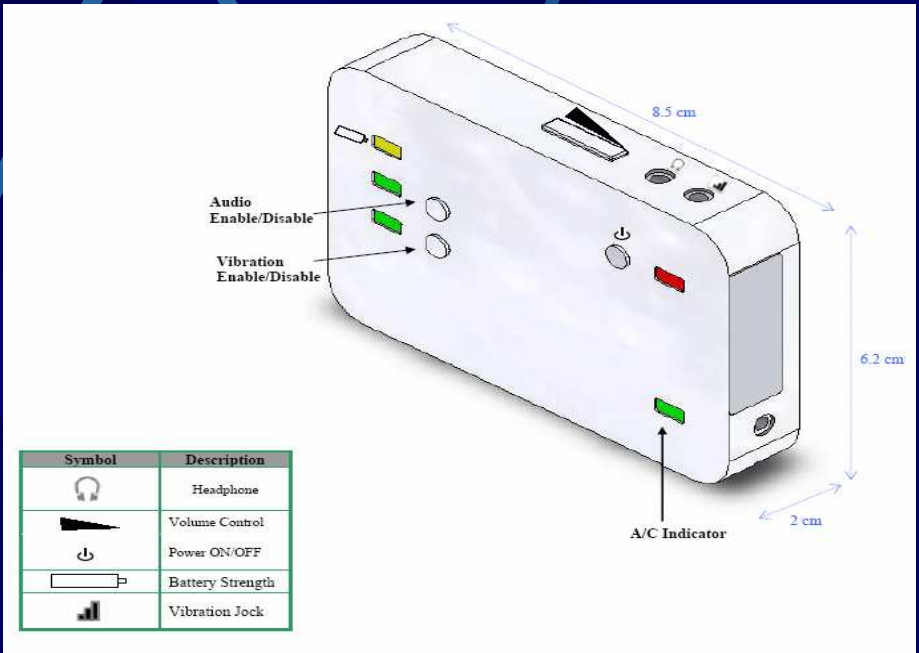


- Bluetooth technology will enable user to hear the auditory signals using wireless technology

- 3-Dimensional audio system will make the task of detection of the inclination direction easier

Equilibra: Marketable Product

- Extensive testing
- Completion of R&D phase (July 2006)
- Final Device ready for production (Jan 2007)
  - PCB design
  - Power management
  - Packaging



Symbol	Description
	Headphone
	Volume Control
	Power ON/OFF
	Battery Strength
	Vibration Jock

Financial Outlook

- Cost
  - Prototype Development : $350
  - Final Prototype: $200
  - Estimated retail price: $90
  - Estimated retail price with Blue Tooth Technology: $130

Acknowledgment

- BC Balance and Dizziness Disorder (BADD)
  - Carol Bullen
- Analog Device
  - ***Mark Looney***
  - Bob Schannel

Summery

- Problem
- Our solution
- Challenges
- Market analysis
- Cost
- Future developments

Questions?

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