

# "Nana" Technology: Using 2 Way GPS To Track Individuals With Alzheimer's And Related Dementia

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# "Nana" Technology©:

*"Microchip based technology designed, intended, or that can otherwise be used to improve quality of life for older adults."*

- A. Carle

## Eight Categories:

1. Health
2. **Safety**
3. Cognition
4. Communication
5. Mobility
6. Lifestyle
7. Whole Home/Integrated Systems

[http://en.wikipedia.org/wiki/Nana\\_technology](http://en.wikipedia.org/wiki/Nana_technology)

# Alzheimer's, Related Dementia, and Mild Cognitive Impairment (MCI):

- Alzheimer's: 5 million Americans today.
  - 20 million by 2050 (short of a cure).
  - 106 Million Worldwide by 2050.
- Represents 70% of all dementia's (age 70+).
  - Vascular Dementia #2 cause (17%).
- MCI: affects 20% of ALL individuals age 70+.
  - May or may not turn into Alzheimer's, but does affect cognitive skills.
  - 78 Million Baby Boomers begin turning 65 in 18 months (2011).

# Wandering:

- High percent of individuals with cognitive deficits may wander/become lost.
- Up to 60% of individuals with Alzheimer's may become "lost" at least once.
  - 70% of those will become lost more than once.

# Cost to Society:

## ■ **LIVES:**

- Nearly half of wanderers (46%) may DIE if not found within 24 hours.

## ■ Caregivers:

- Currently 9.9 million for those with Alzheimer's.
  - 87% family members
- Between 20-40% provide 40+ hrs/week of care (full time).

## ■ Healthcare System:

- Medical expenses for those hospitalized, injured.

## ■ Resources:


- Pressure on local/state/federal Police, Fire, and Search & Rescue Teams.
  - Estimated 1,000 "lost" seniors per day in U.S. by 2030.

# Solution: The GPS Shoe

First Prototype



# Monitor from the Internet or your Phone (using "Bread Crumbs" and "Geo-Fencing")



**GTX Corp Tracking** with you

Account: Alpha2 user: admin [Main Menu](#) [Logout](#)

Mapping Reports Preferences

Device Map: Jo's iPhone (Last GPS event: 2009/01/27 15:17:54 GMT)

Select Date Range:

From: 2009/01/27 00:00  
To: 2009/01/27 23:59

TimeZone: GMT

Replay ☐ InfoBox ☐

Cursor Location:  
39.6004 / -104.7766  
Distance (ctrl-drag):  
0.00 Km

Pushpin Legend:  
Moving  
Stopped

[Show Location Details](#)



# Why A "Shoe"?

- "Paranoia" is common manifestation of Alzheimer's/dementia.
  - Afflicted will attempt to remove articles with which they are not familiar.
- "Procedural Memory" is typically the last type of memory retained in individuals with Alzheimer's.
  - Why they will get/stay dressed, even while not recognizing their own family.

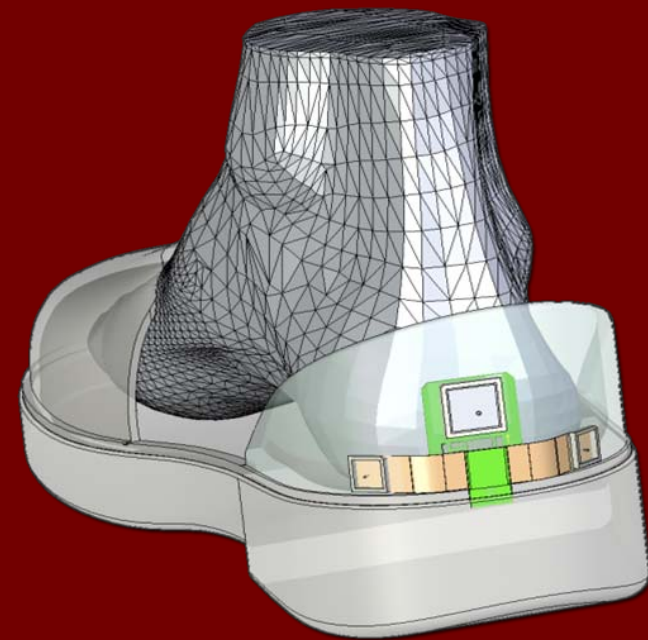
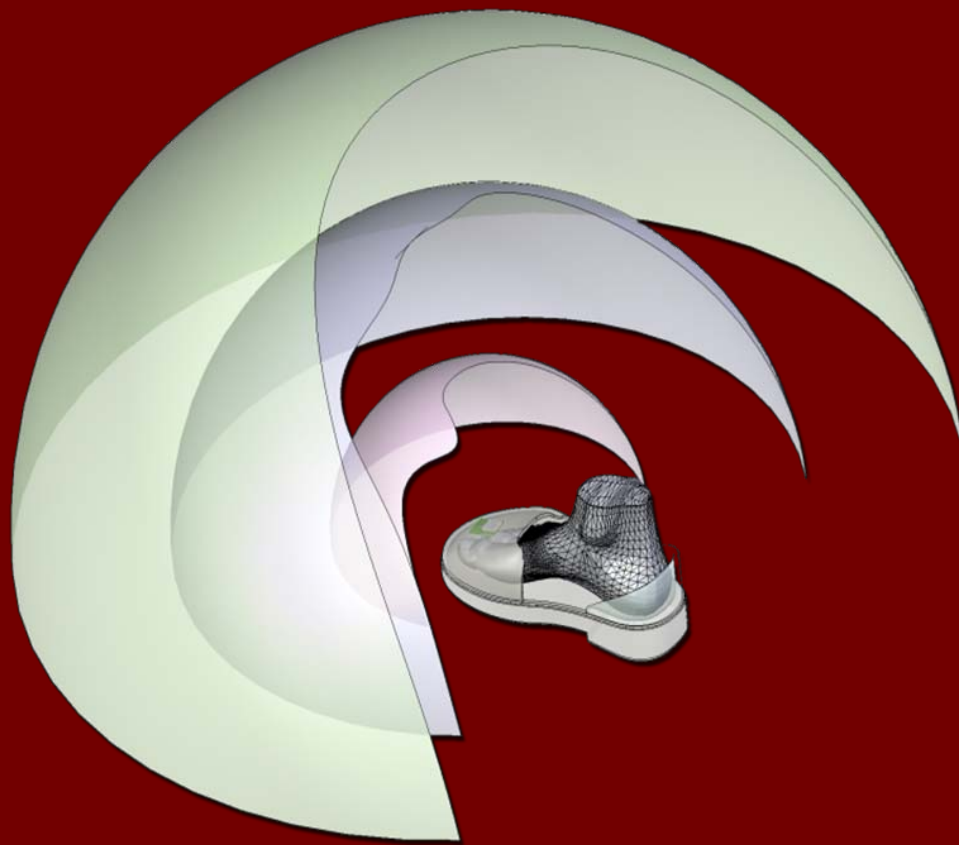


# Paired Modules:

- Two Paired Modules
  - One Shoe GPS (location)
  - One Shoe Cell (transmit)
  - Wireless communication between modules
- Balanced Weight

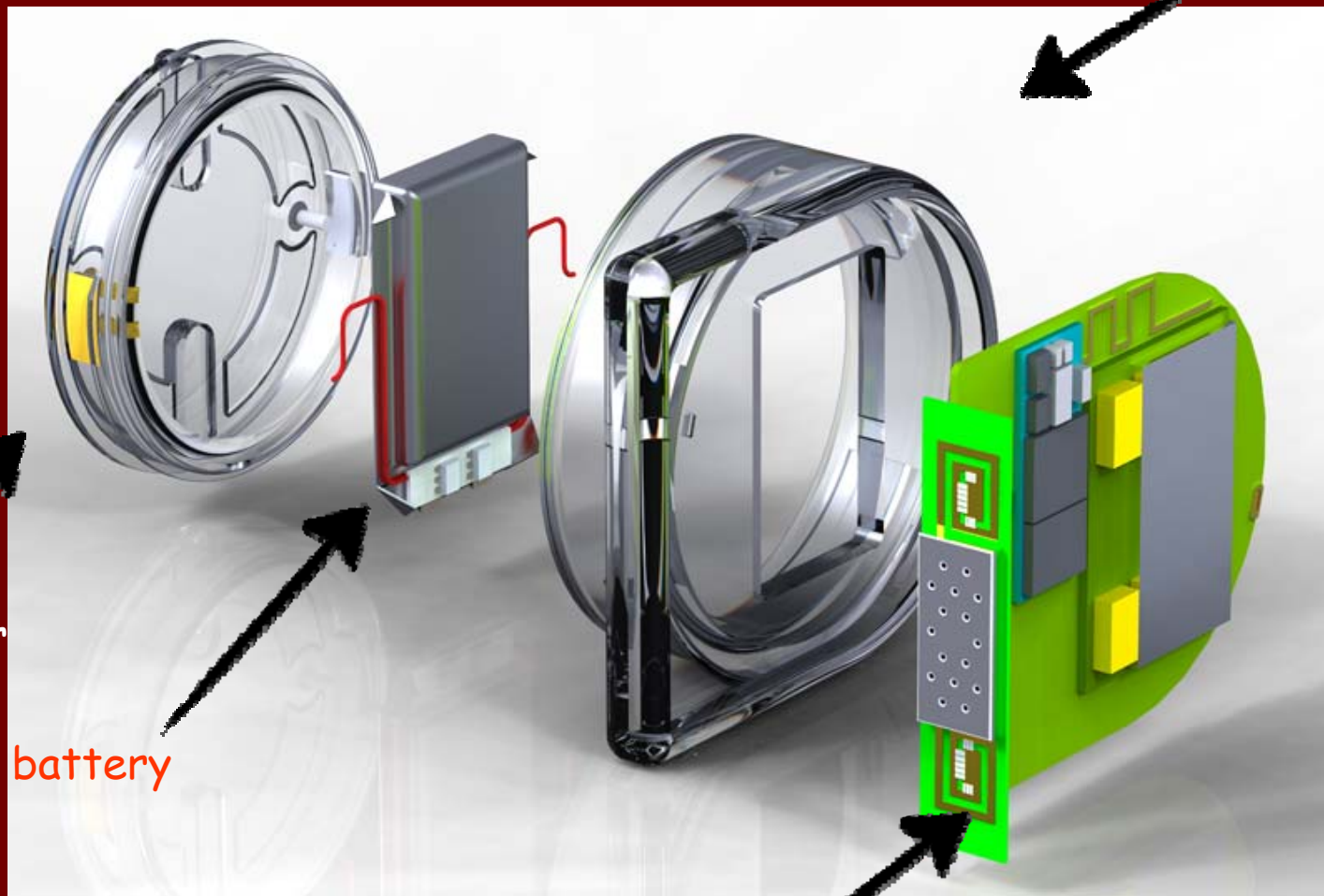


# The GPS Shoe of the Future:





# Components Exploded View:



main housing

GPS Module

access cover

battery

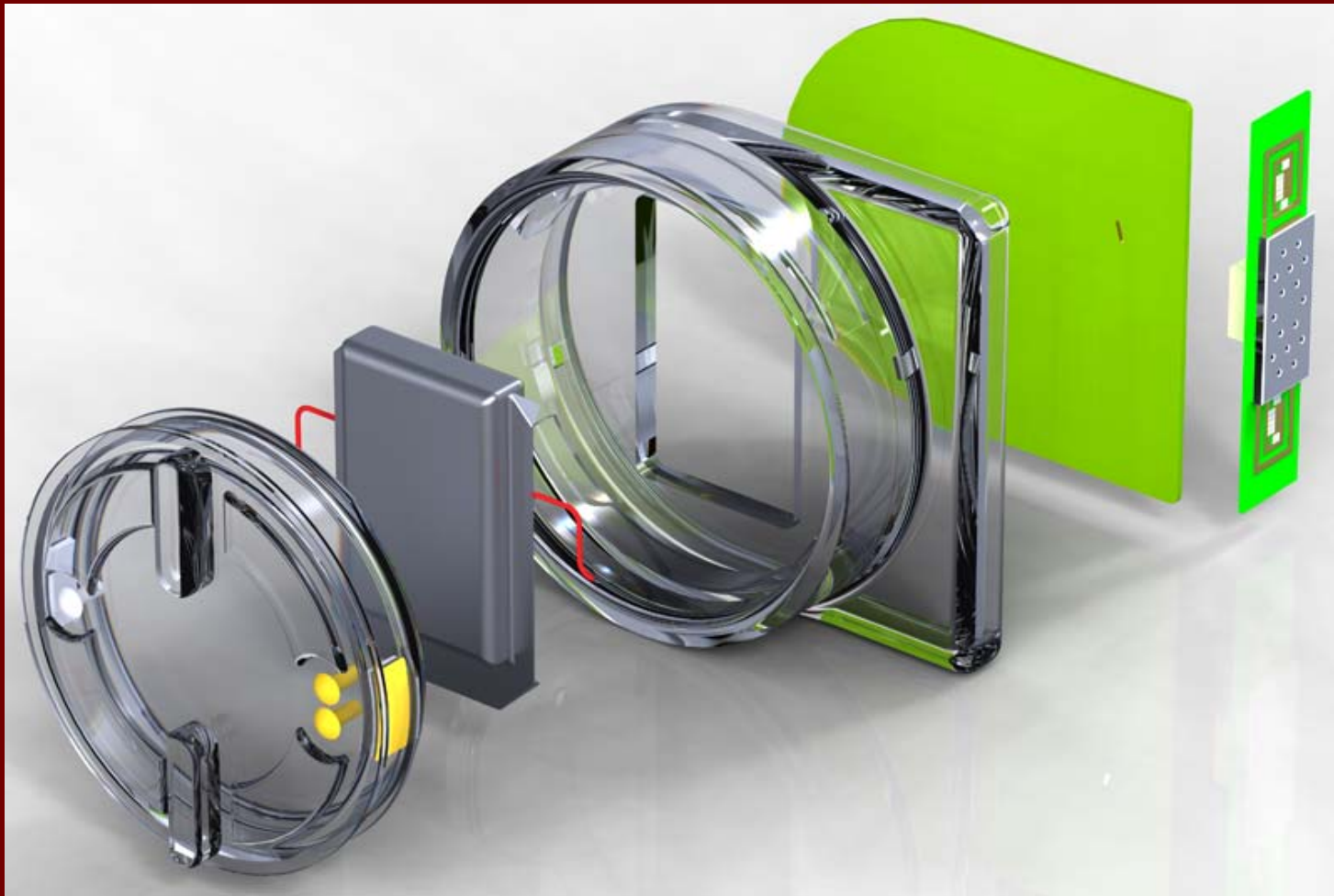
GPS antenna

Powered By





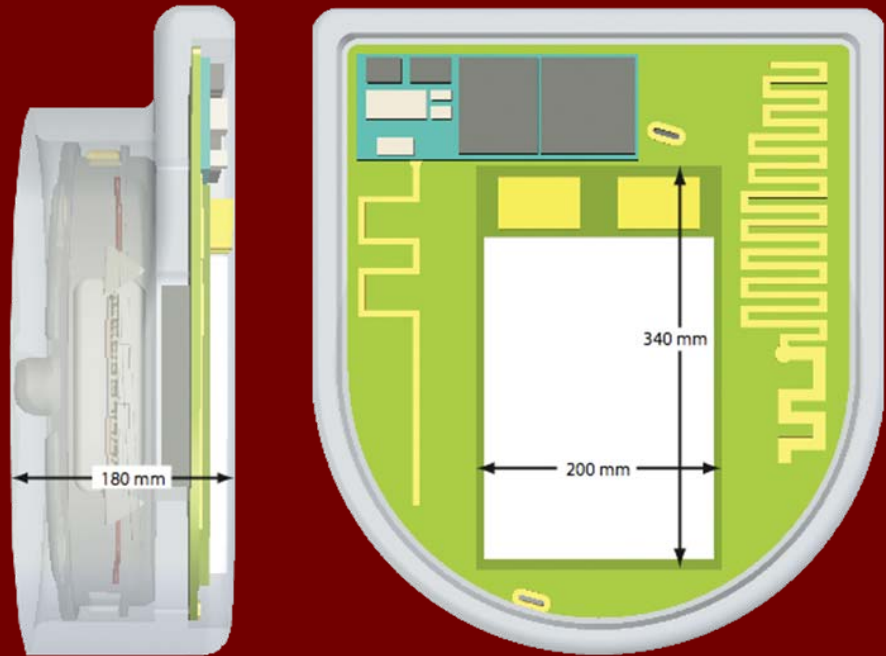
# Components Exploded View 2:





# Approximate Module Size:

- External dimensions can be tailored to meet application



# IP Protection:

- Growing Intellectual Property Portfolio.
- 18 Patents and Patents Pending.
- 5 Registered Trade Marks.
- 7 Years Of R&D and Proprietary knowledge.

# Aetrex Worldwide – “Ambulator”: and GTX Corp Technology



Women's



Men's

[www.aetrex.net](http://www.aetrex.net)



# Questions?

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