

# “Nana” Technology: Using 2 Way GPS To Track Individuals With Alzheimer’s And Related Dementia

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# "Nana" Technology<sup>©</sup>:

*"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: Jb'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  
Update Auto  
Replay InfoBox

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

Pushpin Legend:  
Moving  
Stopped

Show Location Details

The desktop interface displays a map of the Denver area with a red line representing the tracked path and green pushpins indicating location events. The path starts near Arvada and moves south through Denver towards Englewood. The map includes labels for major roads like I-76, I-270, and I-70, and landmarks like the Rocky Mountain Arsenal and Buckley Air National Guard Base.



# 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.

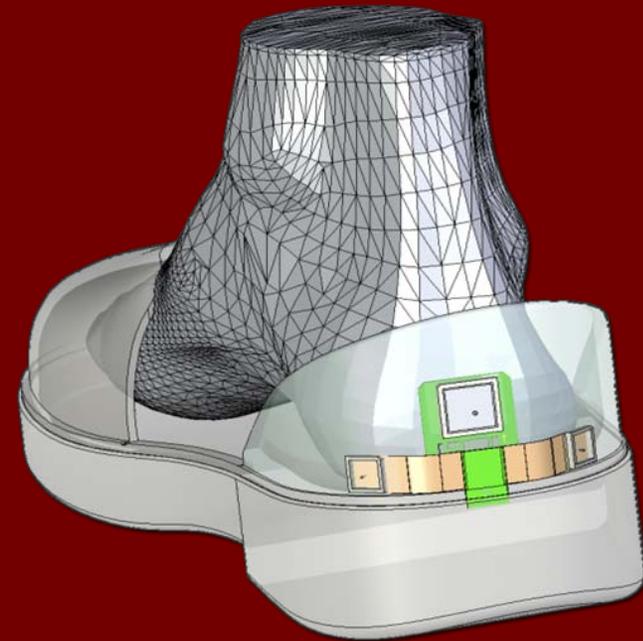
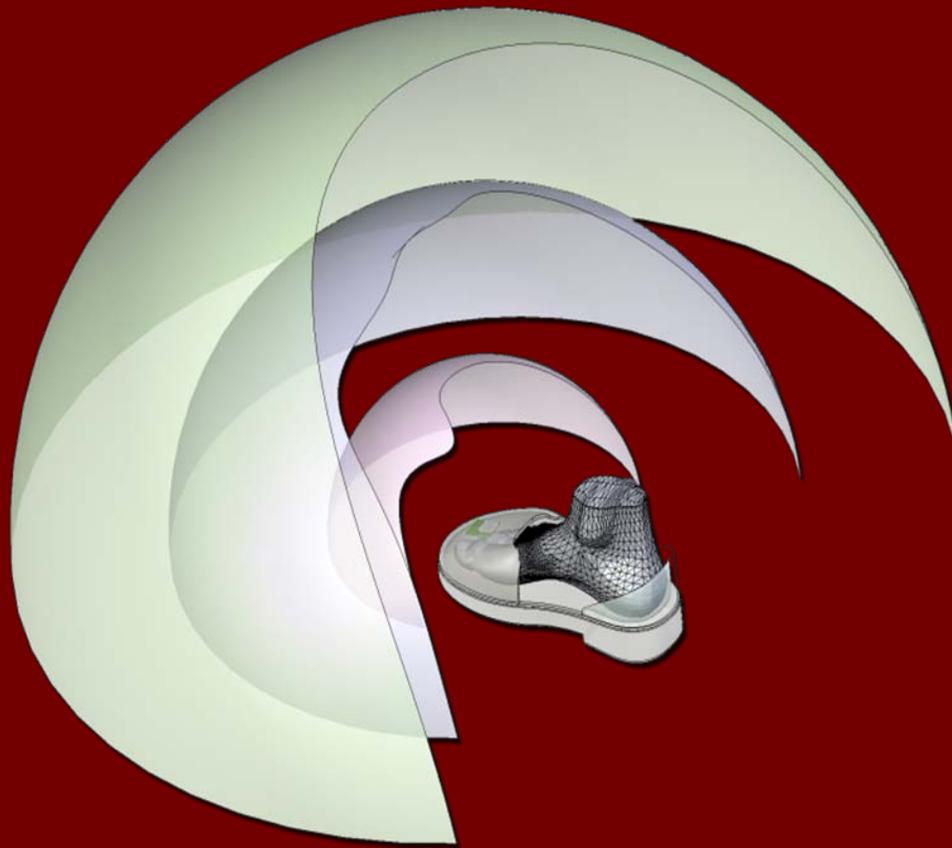


# Paired Modules:

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



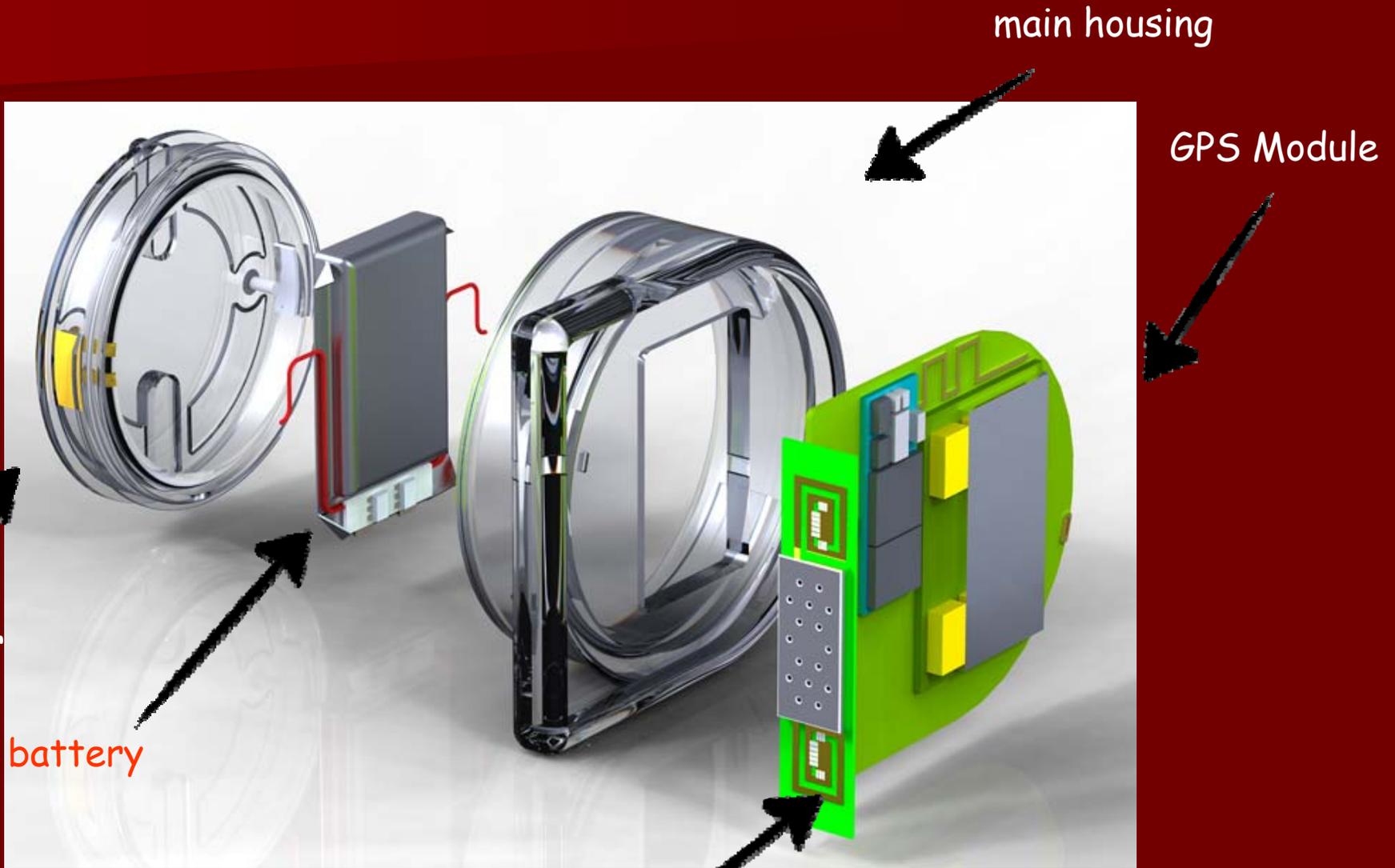
# The GPS Shoe of the Future:



Powered By  GTX  
CORP



# Components Exploded View:

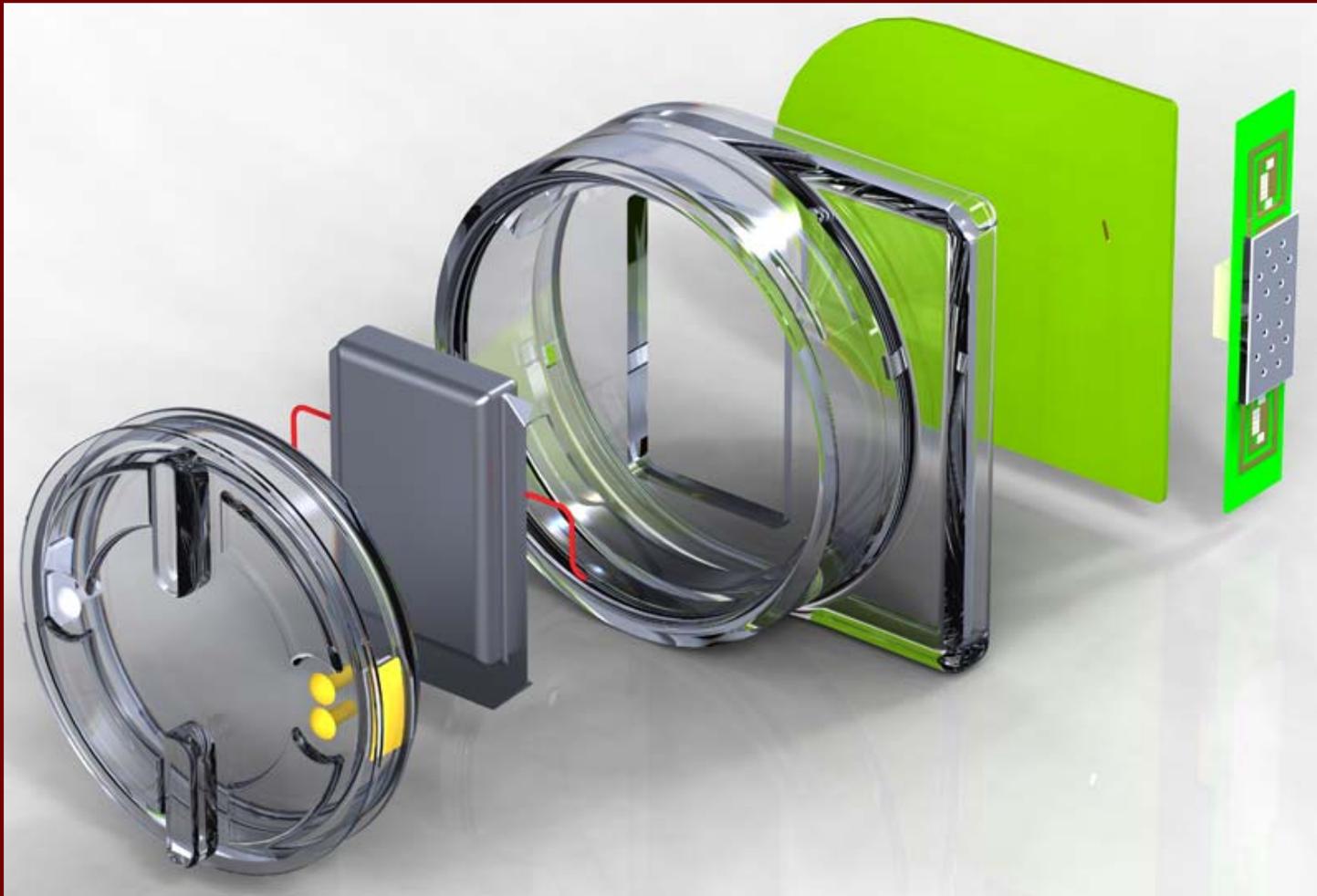


GPS antenna

Powered By 



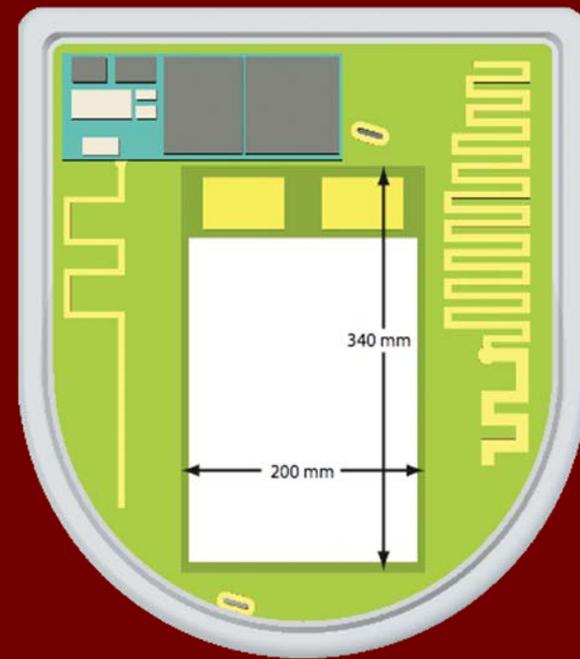
# Components Exploded View 2:





# 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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