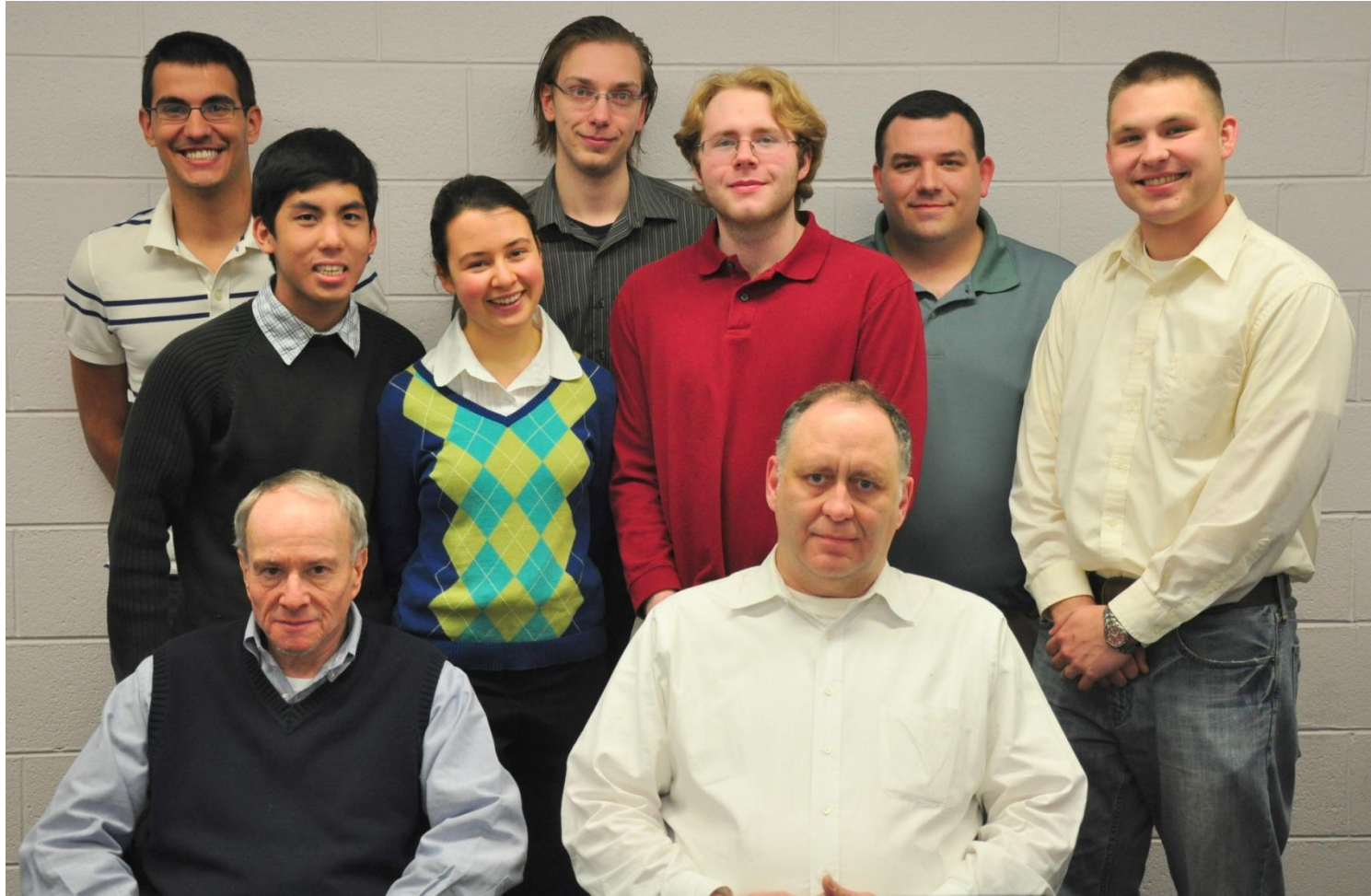


Enhanced Vision Systems

**IPRO-355**

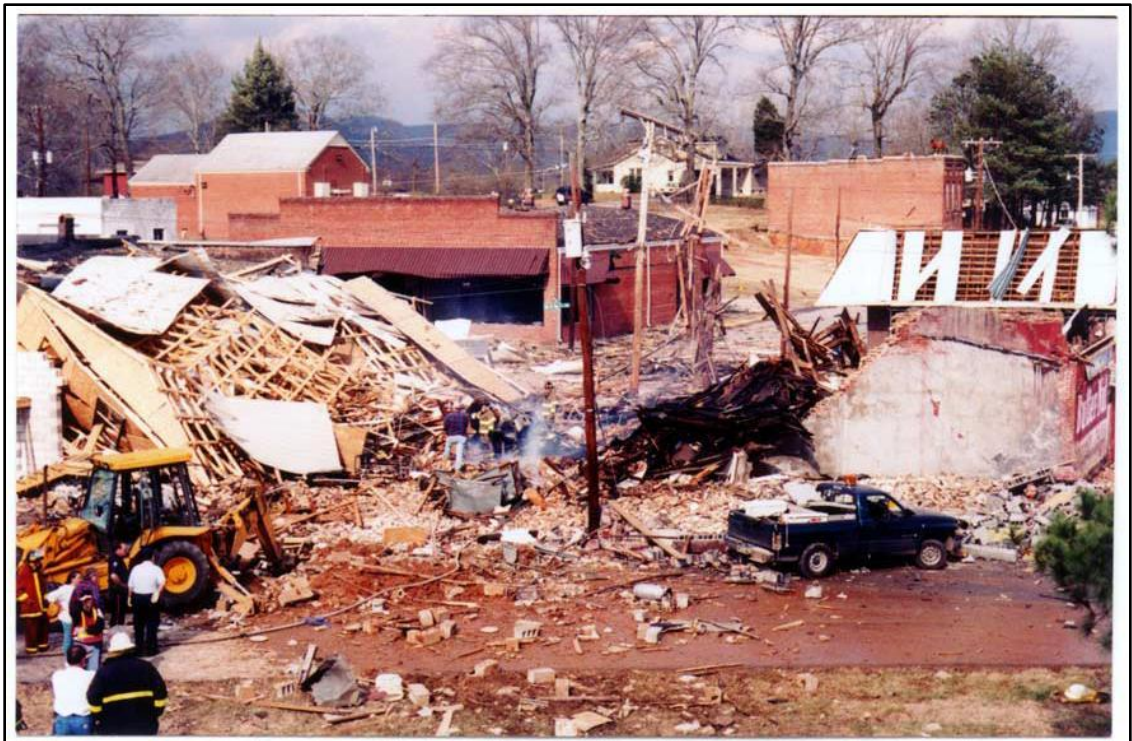
*Seeing a safer tomorrow, today*

# Spring 2009



# Problem

- Mismarked / Unmarked Utility Lines
- Accidents lead to Loss of:
  - Lives
  - Time
  - Money

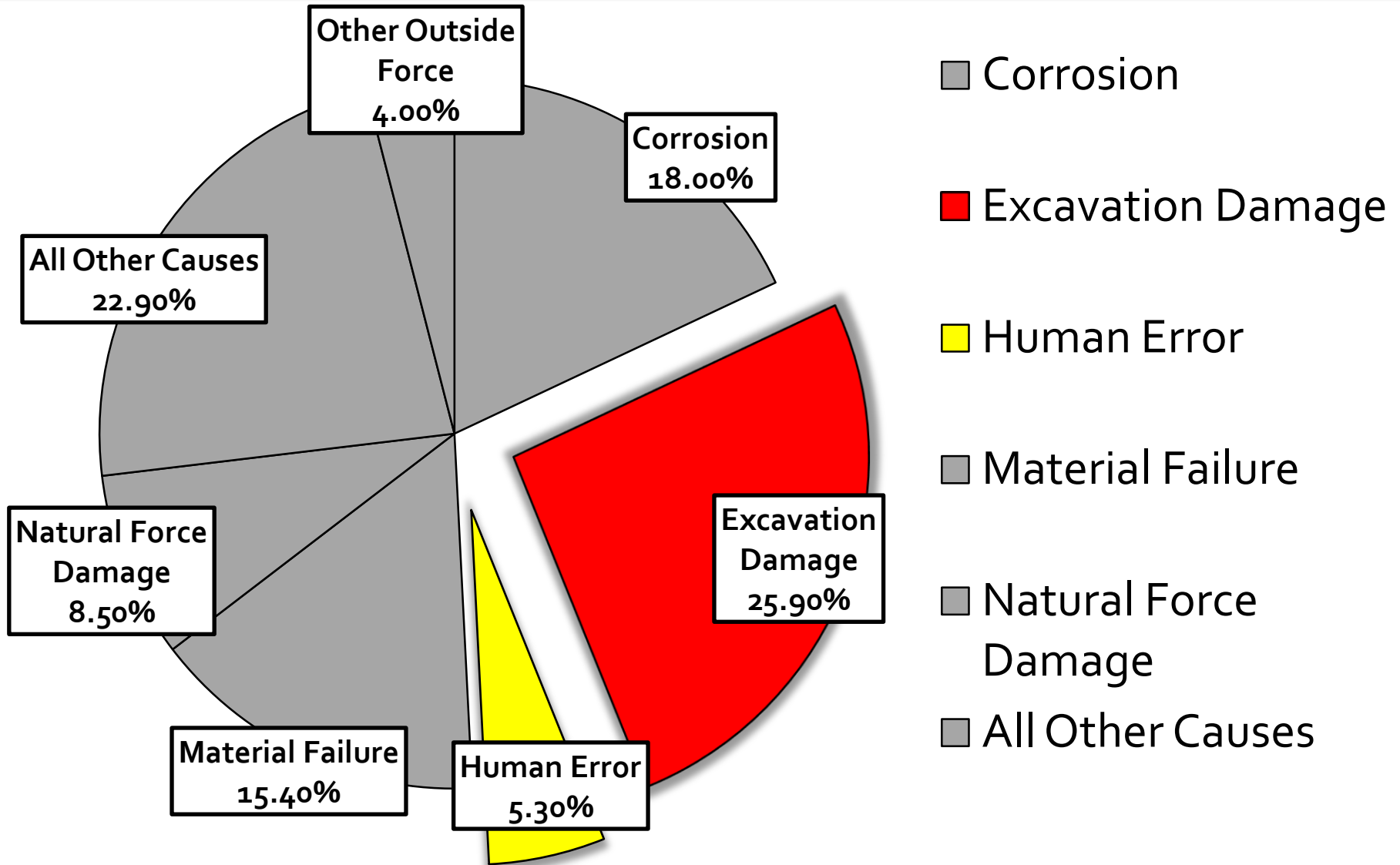




# 1988 – 2008

- Average: 288 Significant Incidents / yr
  - 21 Lives Lost / yr
  - 87 Serious Injuries / yr
  - \$ 170M in Property Damages / yr

# Pipeline Accident Types



# Solution

- A software product
  - Graphical Map
    - Location of buried utilities
    - Relative position of equipment
- Used by
  - Construction Equipment Operators
  - Utility marking services



# Sponsorship Sub-Team

Sub-Team Leader: Bogdan Bistriceanu

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# Sponsorship Goals

- Develop a comprehensive list of contacts
- Contact sponsors, propose our product
- Achieve a corporate sponsorship or collaboration

# Obstacles

- Current state of the economy
- Companies not willing to offer sponsorship
- Lots of no's and maybes

# Successes

- Obtained an opportunity to present to NAVTEQ
- Developed a brief presentation outlining our project
- Presented, and ultimately developed a collaborative relationship with NAVTEQ

# NAVTEQ + EVS

- Accepted opportunity
- Refine our product
- Faster market penetration

# Business Sub-Team

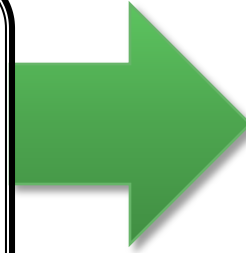
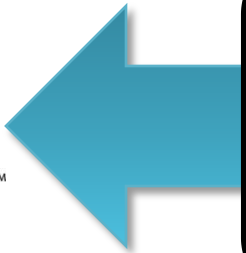
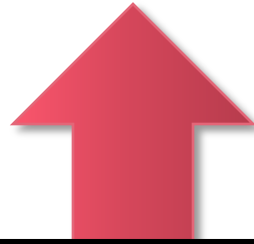
Sub-Team Leader: Julia Rybakova

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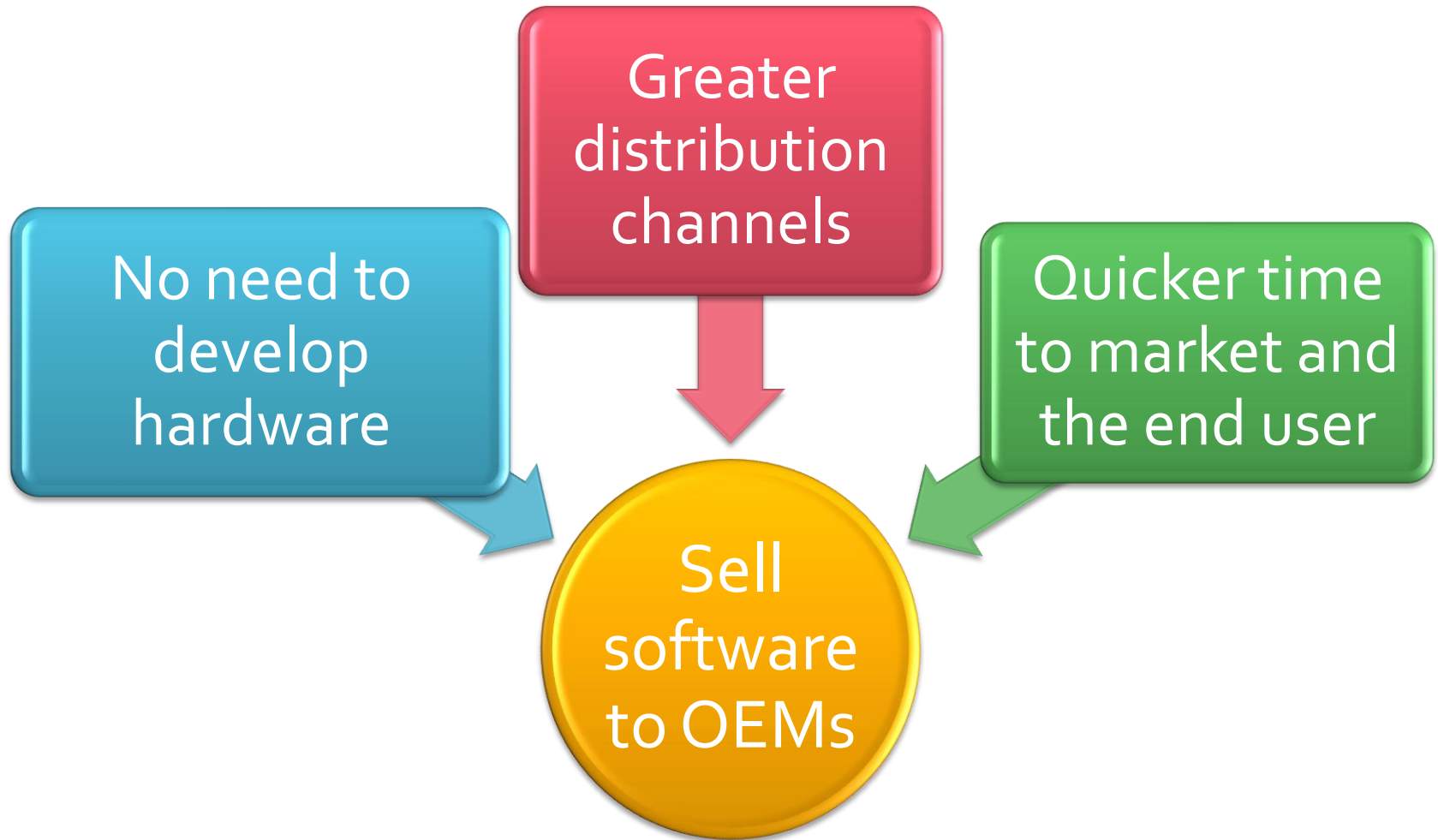
# Target Market: OEMs

- Original Equipment Manufacturers (OEMs)
  - Distributors of graphical GPS systems
  - Sell to construction industry
  - Includes Trimble and Garmin

# Distribution



# Why OEMs?





# EVS Benefits to an OEM

- More robust product
- Larger customer base
- Increased sales
- Uses existing hardware
- Competitive advantage

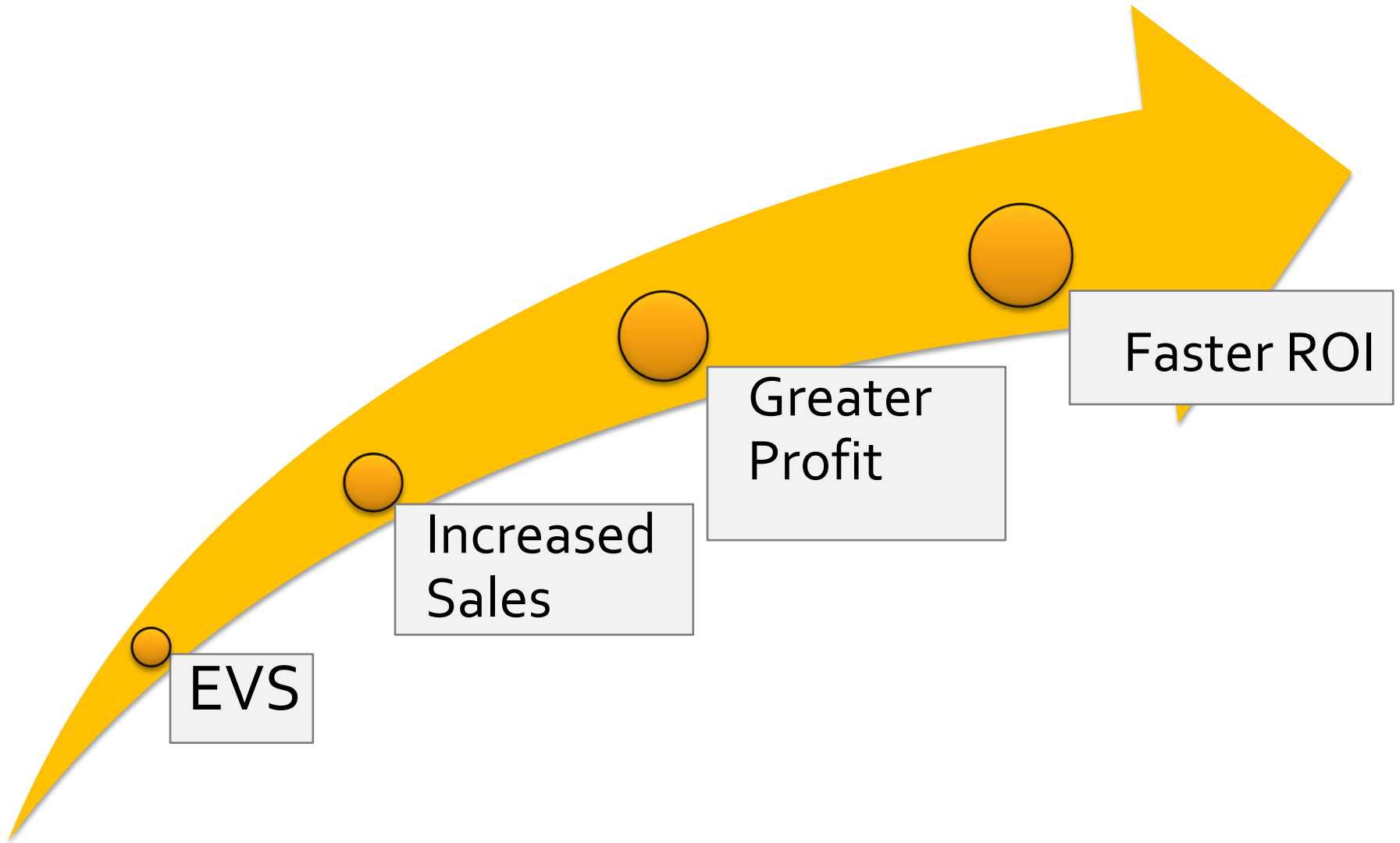


Greater  
Profit

# Opportunity

- The current economic stimulus package contains targeted efforts in: modernizing roads, bridges, transit and waterways
  - \$30 billion for highway construction
  - \$31 billion to modernize federal and other public infrastructure
  - \$10 billion for transit and rail to reduce traffic congestion and gas consumption.

# Value Proposition

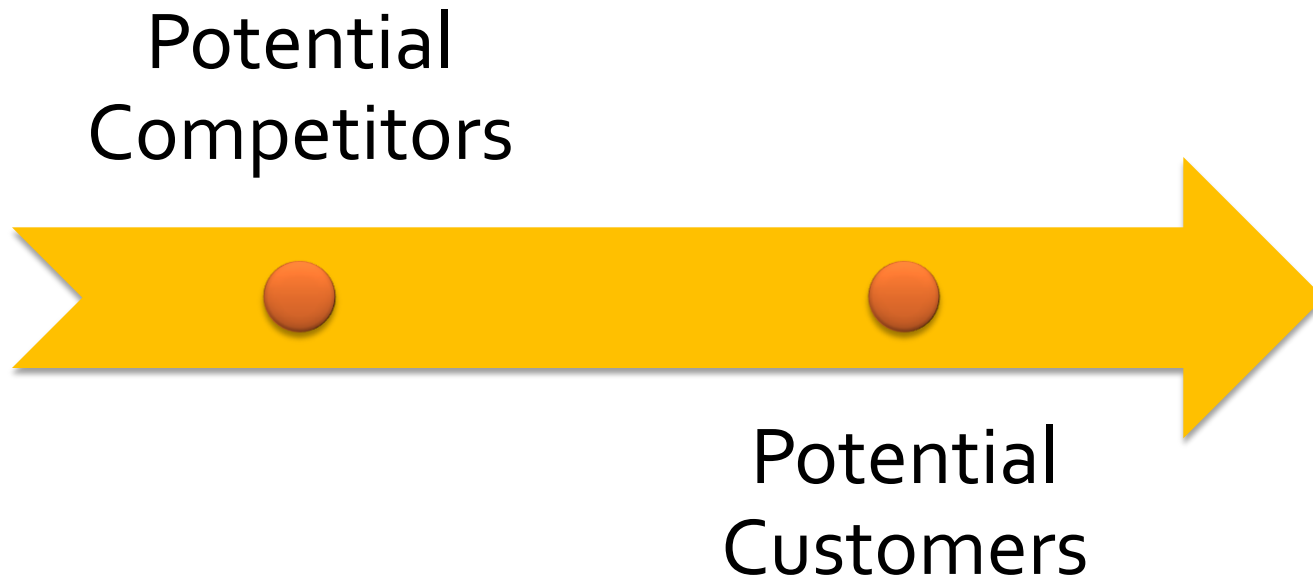


# Potential Competitors

- Guardian Prostar, Trimble – US based hardware and software provider for GIS (geographical information system) solutions
- Leica Geosystems – #1 European provider of integrated hardware software GIS solutions

# Competitors to Customers

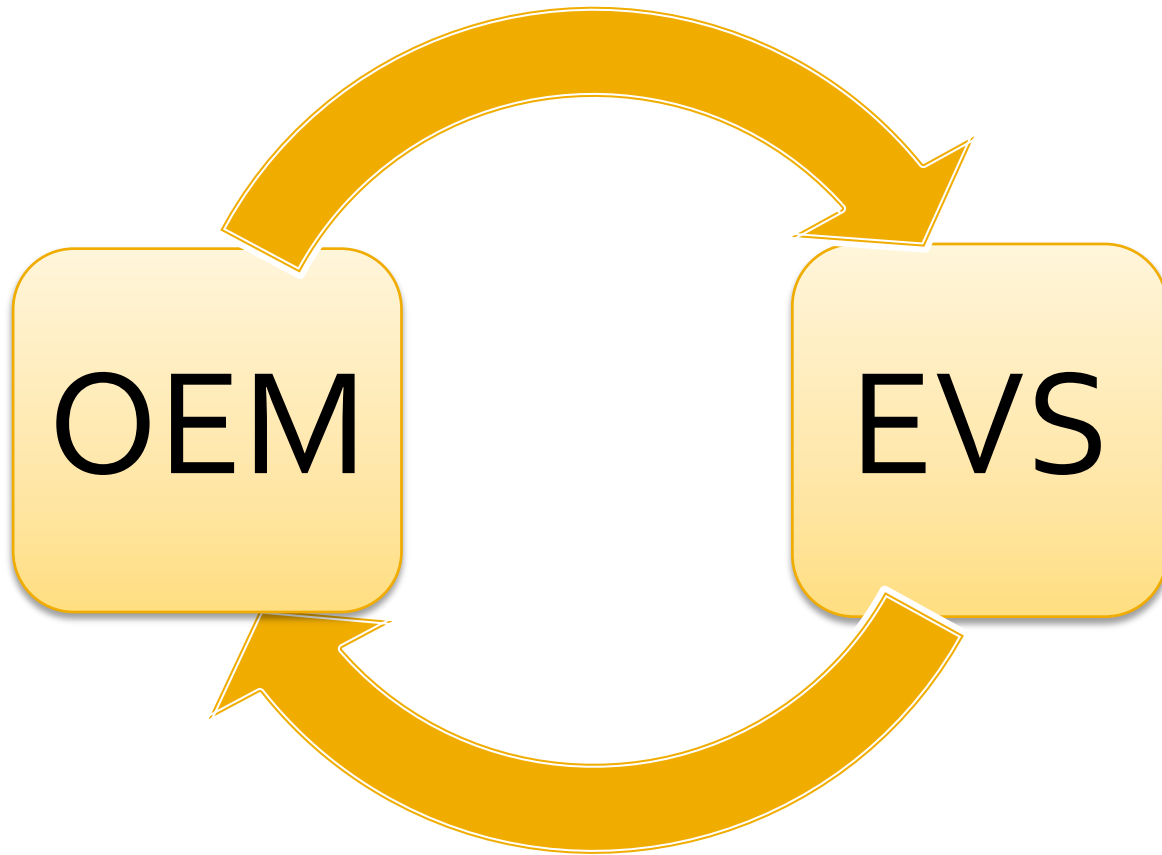
- Original Equipment Manufacturers
  - Hardware
  - Software



# Typical Transaction

- Receive Call from/Send Call to OEM
- Send Marketing personnel/materials to OEM
- OEM accepts meeting
- Negotiation takes place
- Licensing Agreement is Reached
- Product delivered
- OEM pays per license sold on a quarterly basis

# Risks

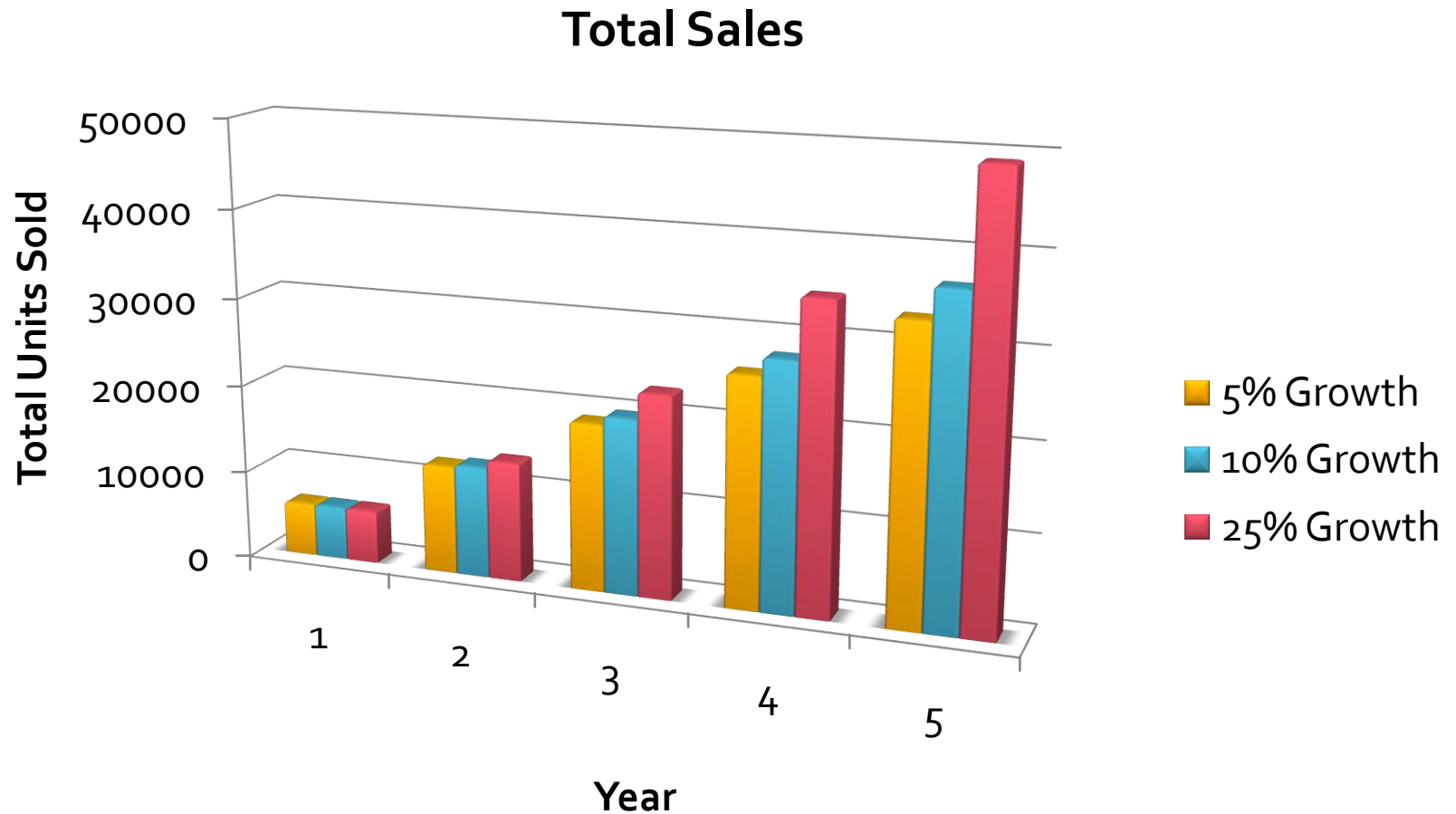


# Negotiation Points

- Software
- Support
- Installation
- Advertising
- Volume Price Discount
- Copyright Infringement
- Insurance



# Sales Forecast



# Income

- Year One
  - Revenue < Expenses, Net Income =  $\$(67,000)$
- Year Two
  - Revenue < Expenses, Net Income =  $\$(6,000)$
- Year Three
  - Revenue > Expenses, Net Income =  $\$54,000$

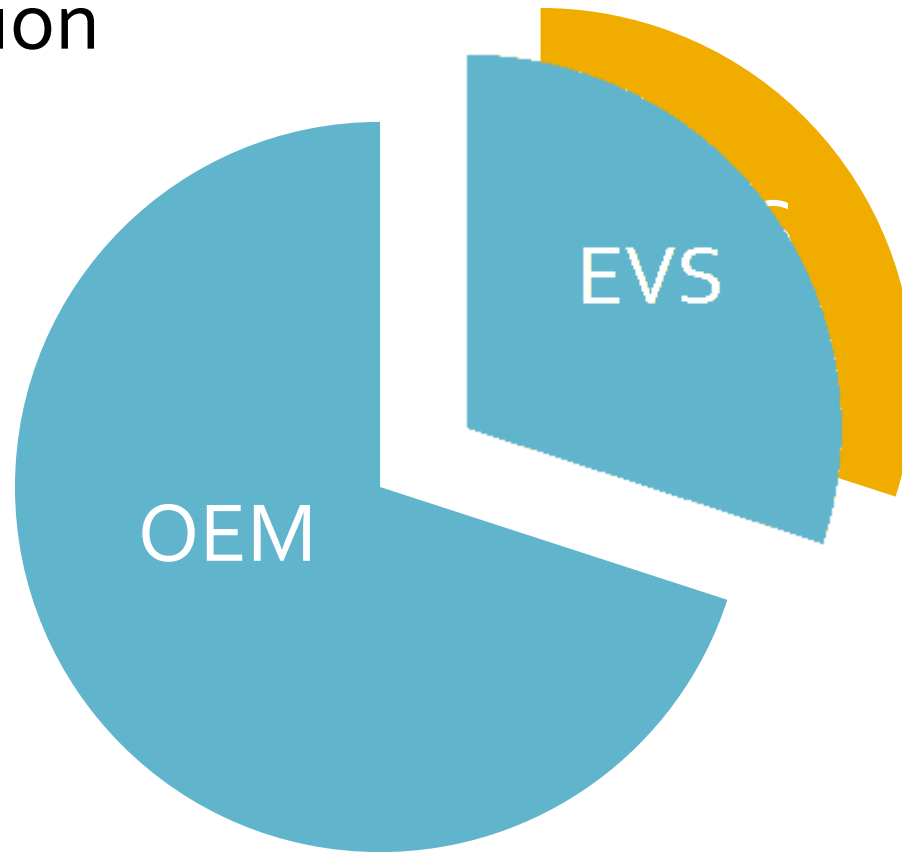
# 5 Year Cash Flows

<b>Year</b>	<b>Revenue</b>	<b>Expenses</b>	<b>Profit</b>	<b>Running Profit</b>
<b>1</b>	<b>\$2,094</b>	<b>\$(2,162)</b>	<b>\$(68)</b>	<b>\$(68)</b>
<b>2</b>	<b>\$2,199</b>	<b>\$(2,204)</b>	<b>\$(6)</b>	<b>\$(73)</b>
<b>3</b>	<b>\$2,309</b>	<b>\$(2,255)</b>	<b>\$54</b>	<b>\$(19)</b>
<b>4</b>	<b>\$2,424</b>	<b>\$(2,307)</b>	<b>\$117</b>	<b>\$97</b>
<b>5</b>	<b>\$2,545</b>	<b>\$(2,363)</b>	<b>\$183</b>	<b>\$280</b>

*All numbers are in thousands of dollars*

# Exit Strategy

Acquisition



# Acquisition Benefits

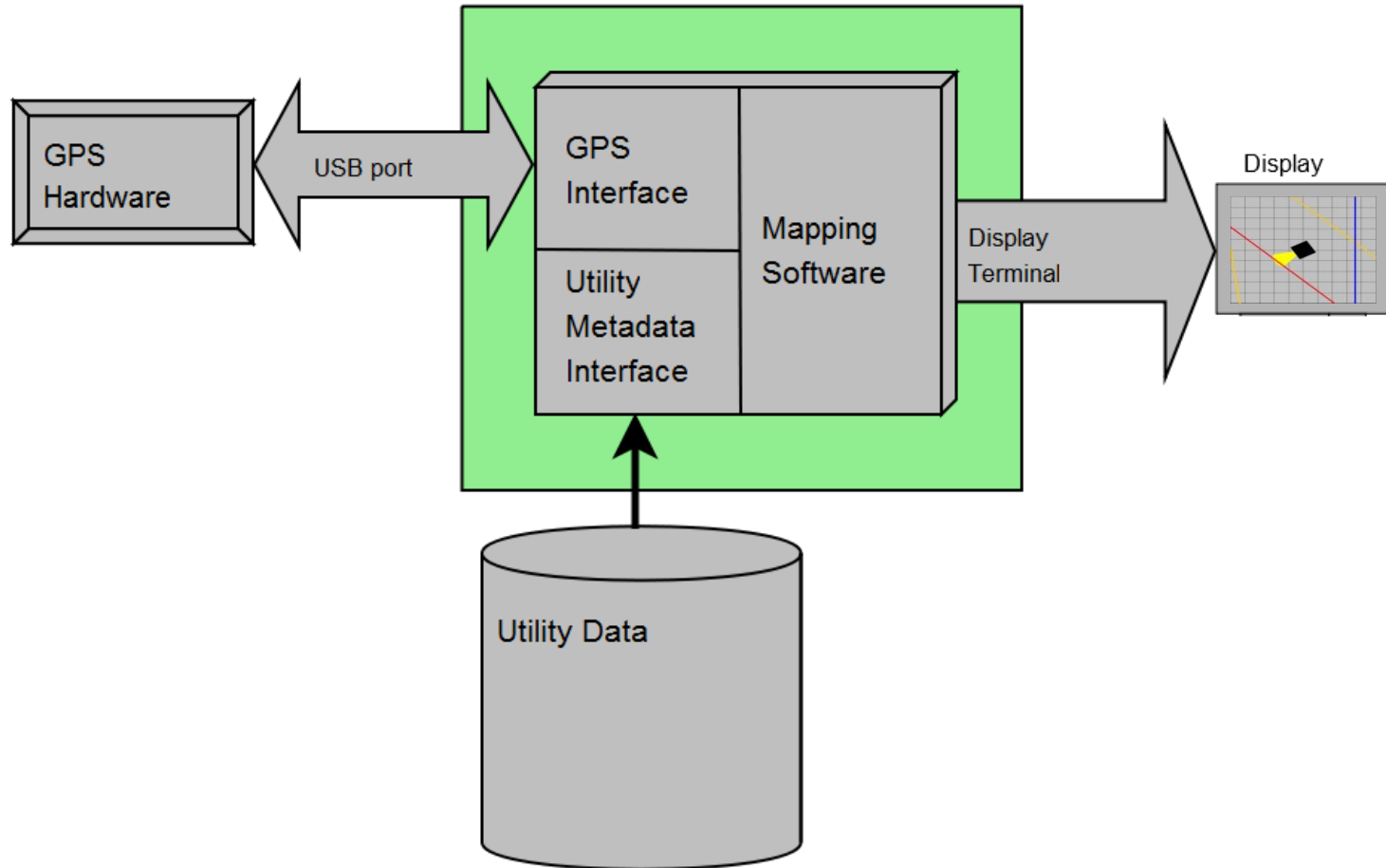
- Benefits to us
  - No worrying about logistics
  - Better focus on customer
  - More capital available for investment
- Benefits to OEM
  - More control over product
  - Can license EVS to others
  - Faster distribution to end user

# Technology Sub-Team

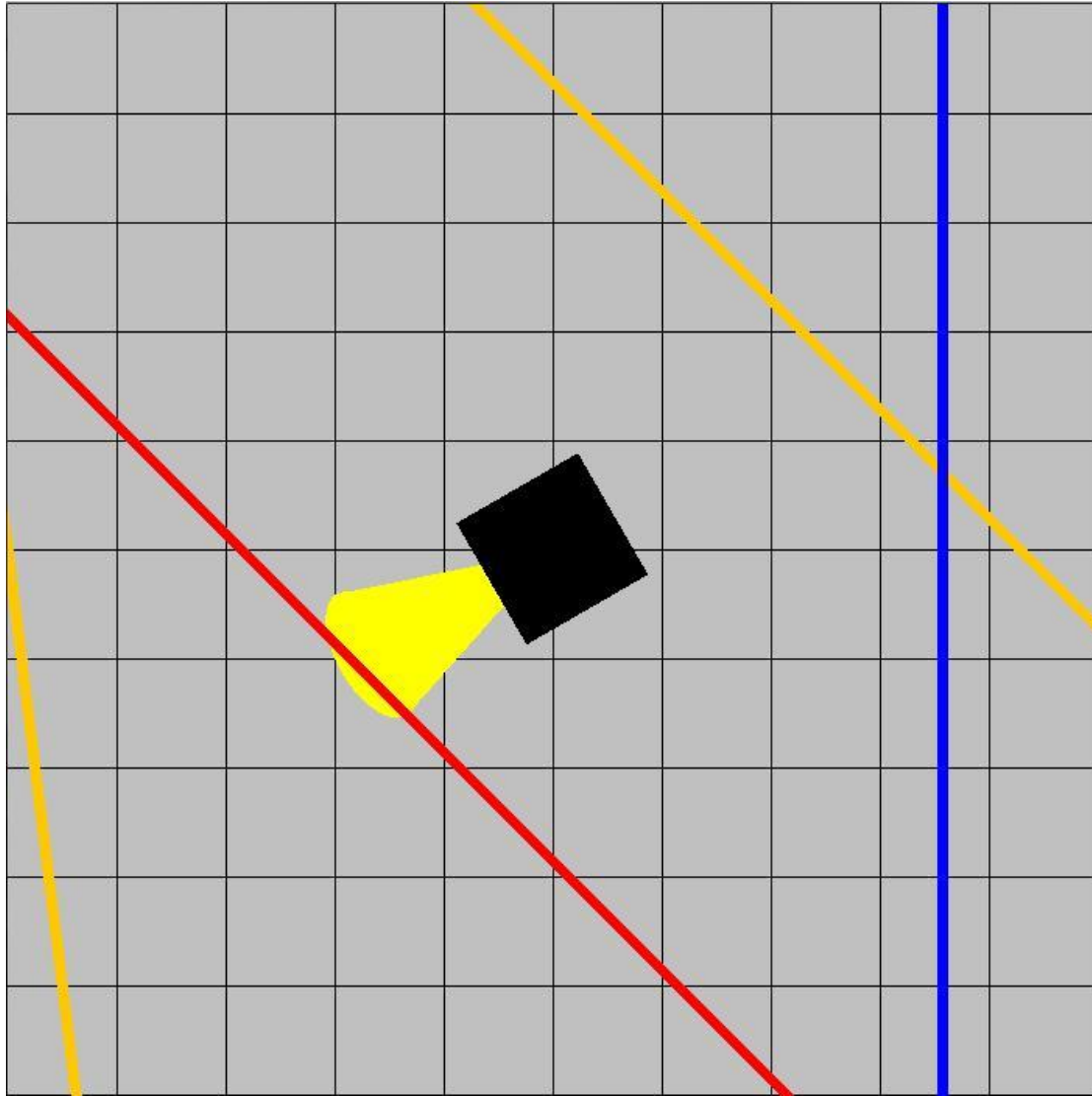
Sub-Team Leader: Richard Hanley

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# EVS

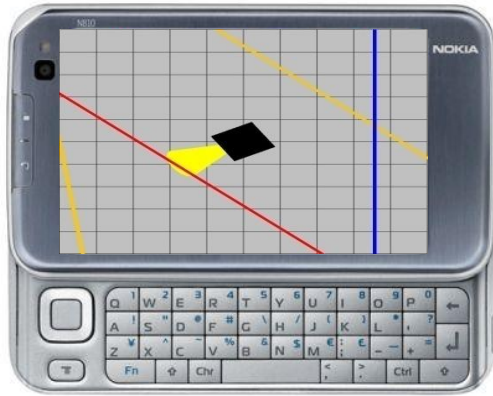


# Graphical Map



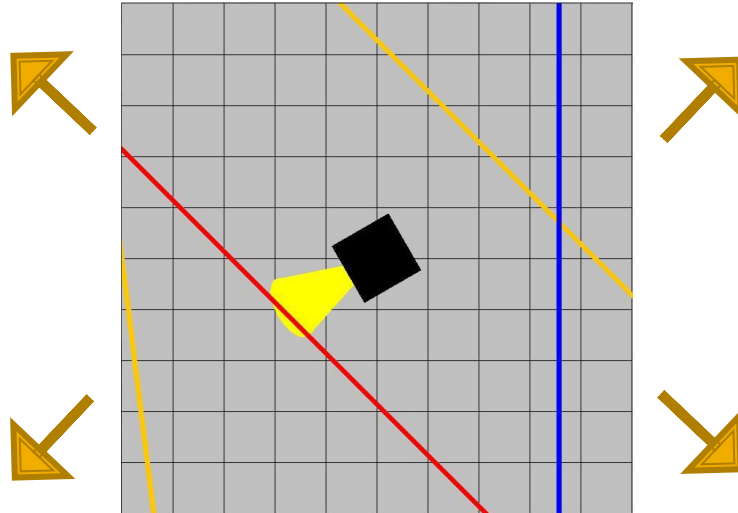


# End User Device

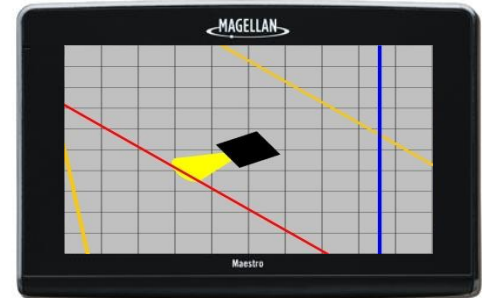


**NOKIA**  
Connecting People

 **Trimble.**



**GARMIN.**



**MAGELLAN**

# Alabama Revisited



# Conclusion

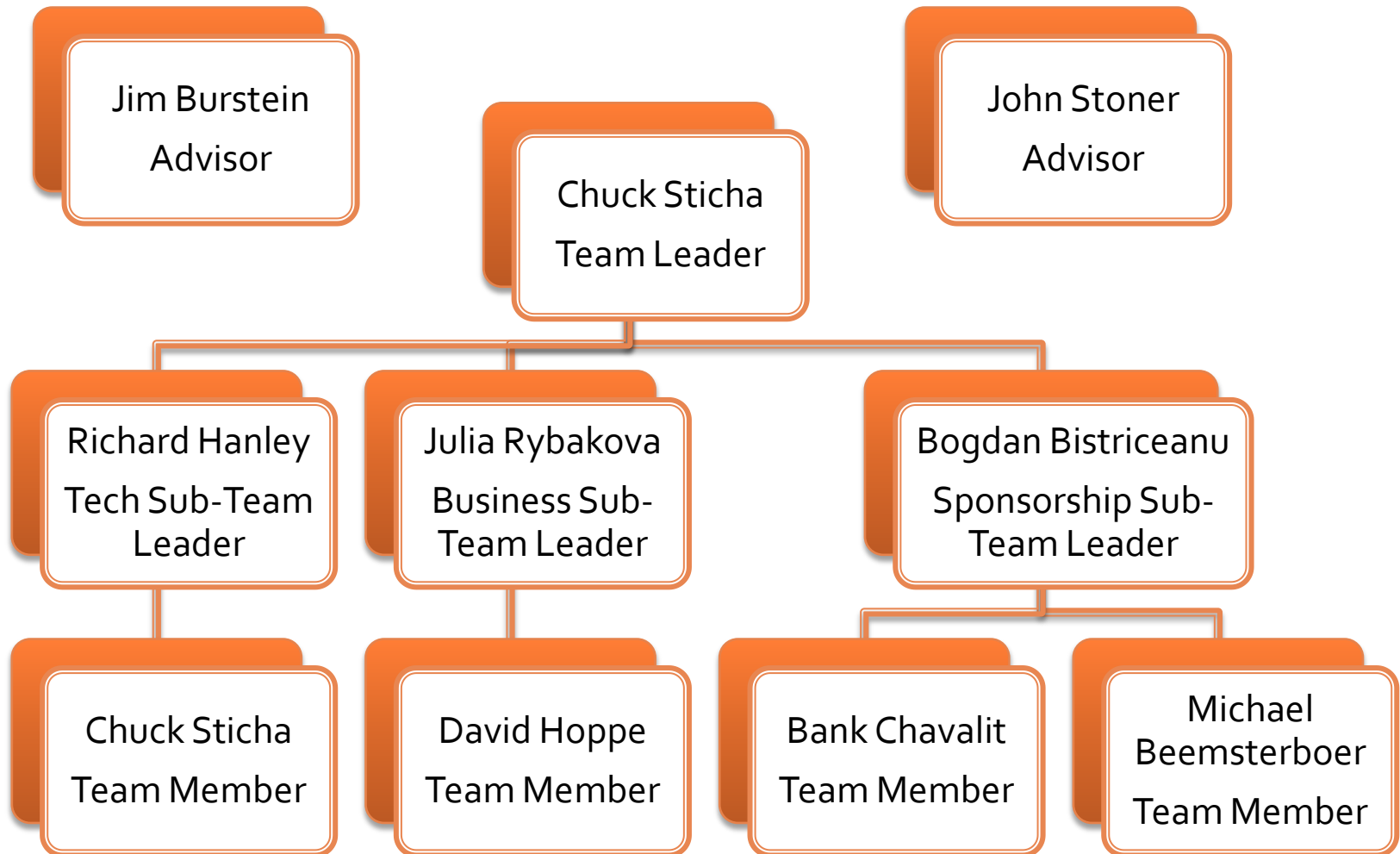
Project Team Leader: Chuck Sticha

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# Previous Work

- Fall 2007 – Augmented Reality
  - Informational commercial virtual reality device
- Spring 2008 – Augmented Reality
  - 3-D hardware & software
- Fall 2008 – Enhanced Vision Systems
  - 2-D top down view; hardware & software

# Team Structure



# Goals

- Prototype
- Business Model
- Sponsor or Collaborator
- Win

# Strategy

- Effective Management
- Sub-Team Accountability
- Goal Oriented

# Ethical Issues

- Equitable distribution of work
- Quality vs. Limited Time
- Feature inclusion and exclusion



# Next Steps

- Develop collaboration into sponsorship
- Refine prototype
- Utility data acquisition
- Software Licensing
- Device specific testing

# Achievements

- Prototype
- Preliminary Business Model
- Collaboration with NAVTEQ

# Thank You!

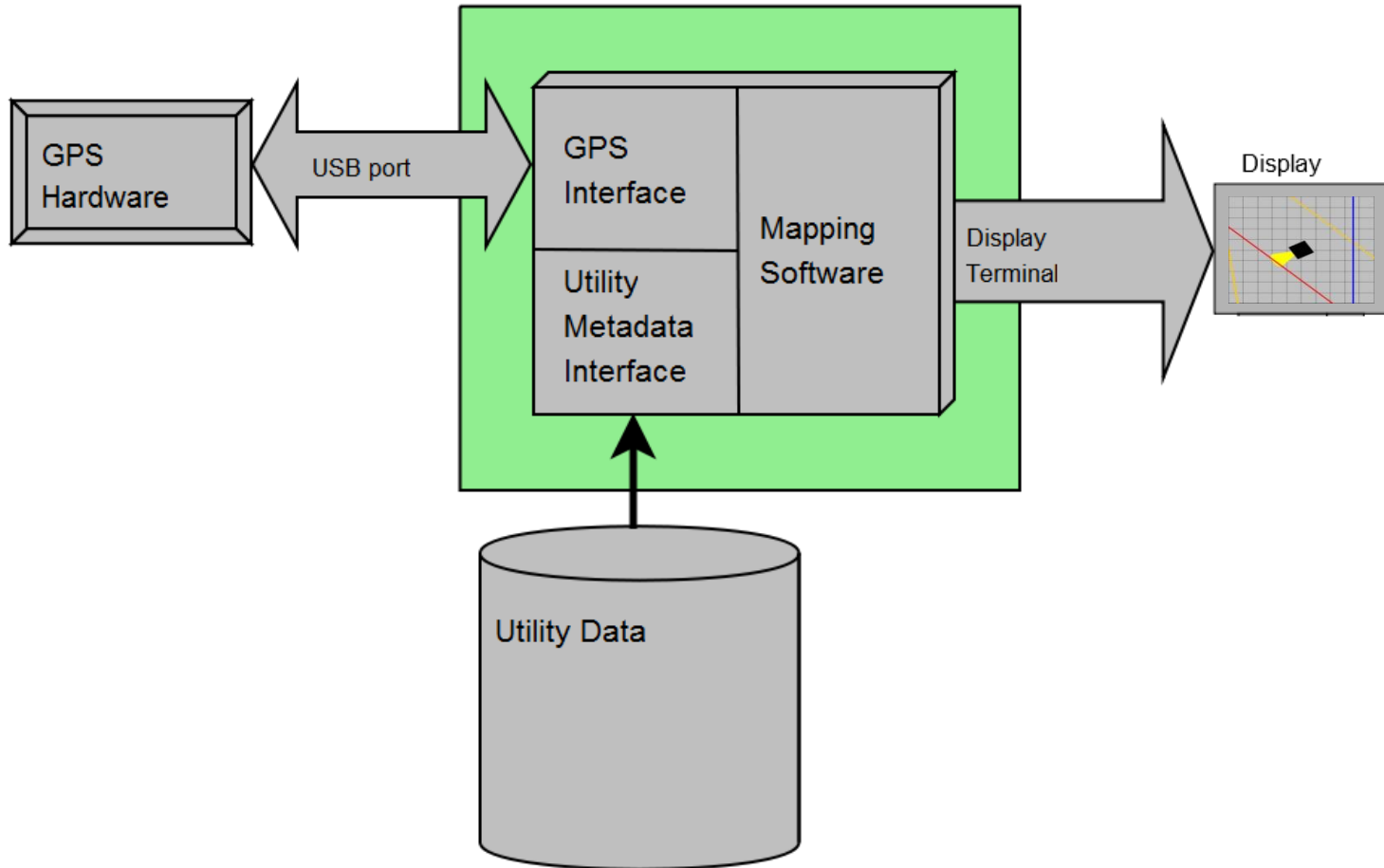
Together, we can start  
seeing a safer tomorrow,  
**TODAY!!!**



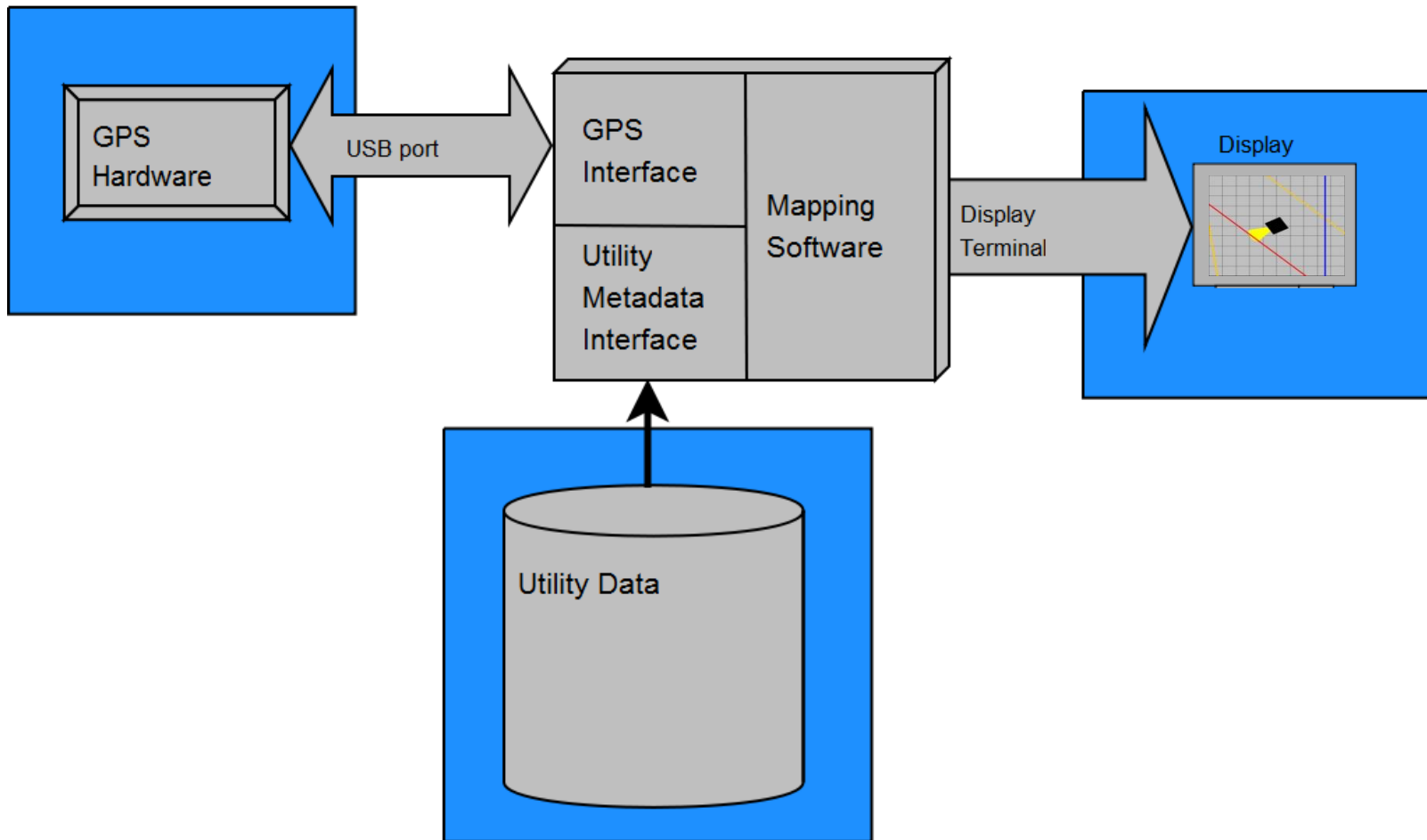
# Questions



# EVS



# Beyond Scope



# Test Environment

