Using Analytics and Technology Accelerators to Help First Responders

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Acknowledgement: This research effort was supported by DHS S&T First Responders' Group under contract # HSHQDC-17-C-B0023

Overview

- Some Background
- The Program
- Project Selection Methodology
- Next Steps

Background

- There is an omnipresent desire to improve First Responder capabilities whenever and where ever possible.
- The S&T First Responders' Group(FRG) leads this effort for the Federal Government
- Continually emerging IoT information technologies were identified by the FRG as having high potential to contribute to First Responder Safety
- IoT technologies a rapidly growing set of technologies and multi-billion dollar market
- The IoT marketplace is different from the traditional sources of improvement to first responder safety. E.g.:
  - Insurance Industry
  - Building / Construction Industry

Solution: Look for Technology Innovators

The Sciti (pronounced “City”) Program

- Smart City IoT Innovation (Sciti) Program
  - Sponsored by DHS S&T- First Responders’ Group
  - Executed by the Virginia Center for Innovative Technology
  - Supported by:
    - TechNexus
    - Smart City Works
    - KaDSci, LLC

Technology Accelerators

Analytics Company

- **The goal of the program is to seek out, develop, and bring innovative IoT technologies that improve first responder capability to market.**
- By:
  - Working with First Responders
  - Aligning with larger market opportunities
  - Seeking out Innovators
  - Planting & fertilizing seeds

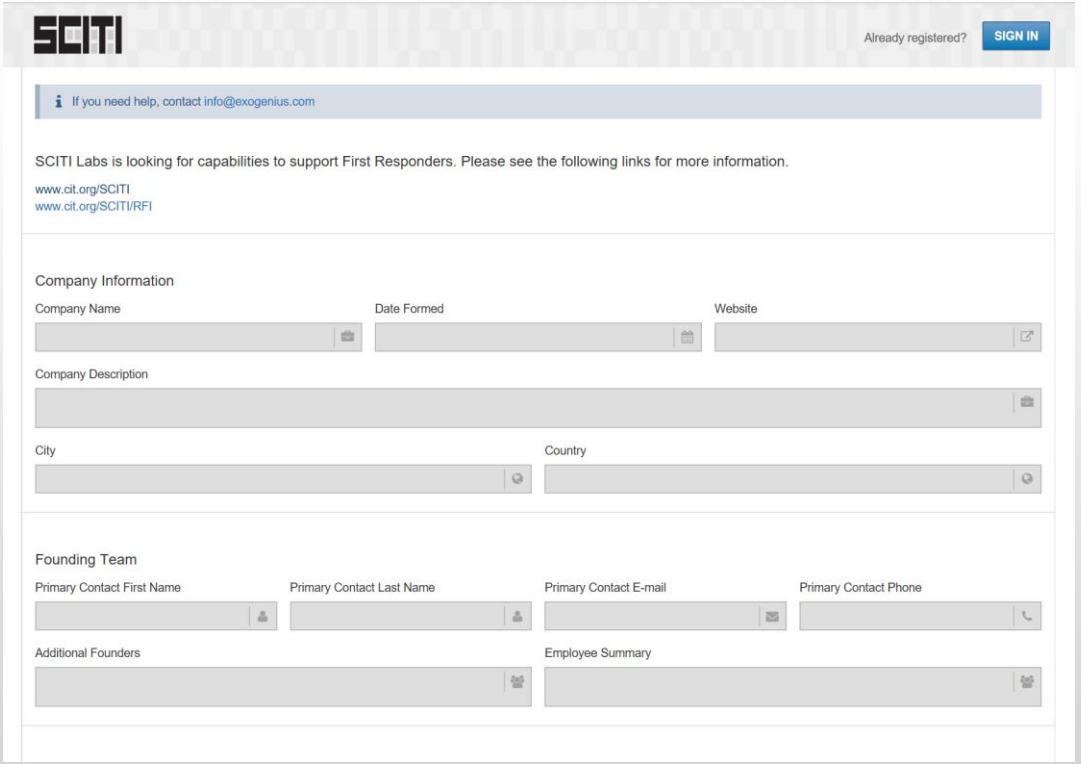
Technology innovators are usually found in small startups

Project Selection

- The challenge – How to select the winners – Knowing:
  - Most Startups fail
  - Success depends on much more than the “idea”
  - Improving First Responder Capability will require technologies to interoperate once deployed.
- The solution:
  - Cast a very broad net
  - Used a proven, disciplined selection method
  - Require interoperability from the very beginning

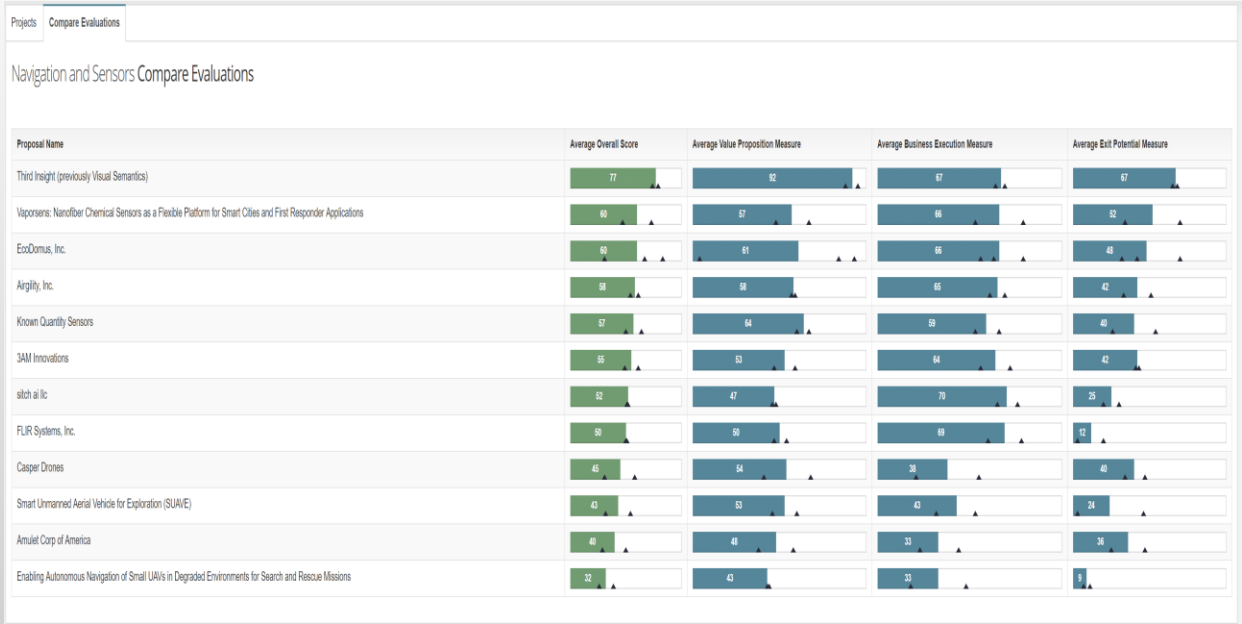
Casting a Broad Net

- Widely Publicized (https://www.cit.org/SCITI/)
  - Technology Accelerator Circles
  - Universities
  - Relevant Professional Societies
- Easy Application Process
  - One Page
  - One Phone Call Screening
- Received over 130 applications



Disciplined Process

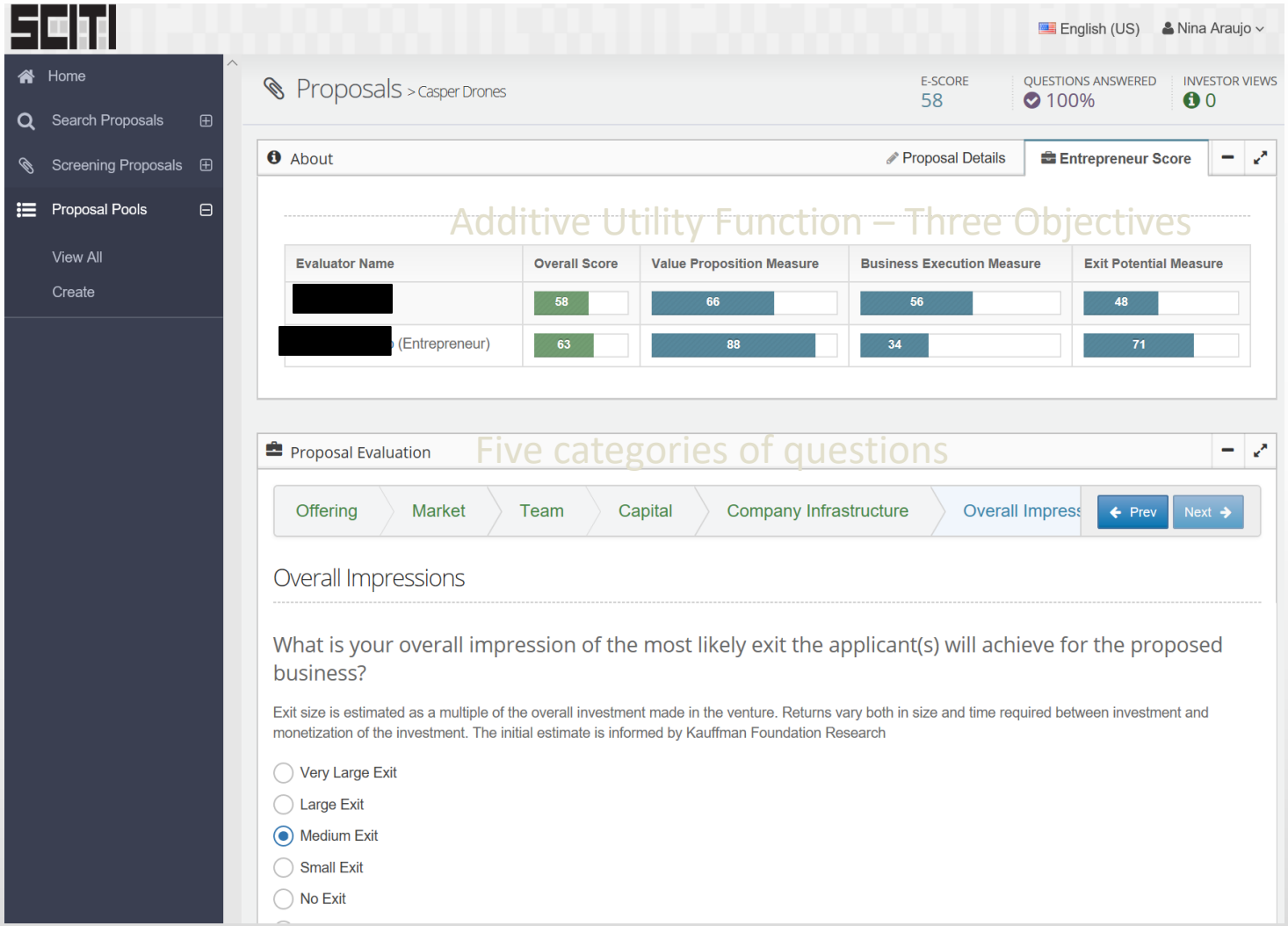
- Down selected applications to approximately 40 for detailed review (March 2018)
- Created three pools of complimentary technology types
  - Navigation and sensors (mobile – emphasizing indoor navigation)
  - Indoor sensors (static – innovative applications of emerging IoT for Smart Cities)
  - Smart Hub (Infrastructure to facilitate interoperability)
- Required a standard submission packet, tailored to technology
- Applied a decision analytic model (Influence Diagram) designed for technology startup investment analysis.
  - Looked across three dimensions (Value Proposition, Business Execution, Exit Potential)
  - Twenty self evaluation questions for proposers
  - Twenty three evaluation questions for evaluators (“investors”)
- Ranked Proposals in each Pool based on the evaluations
- Selected 13 Phase One Projects (April 2018)


Projects | Compare Evaluations

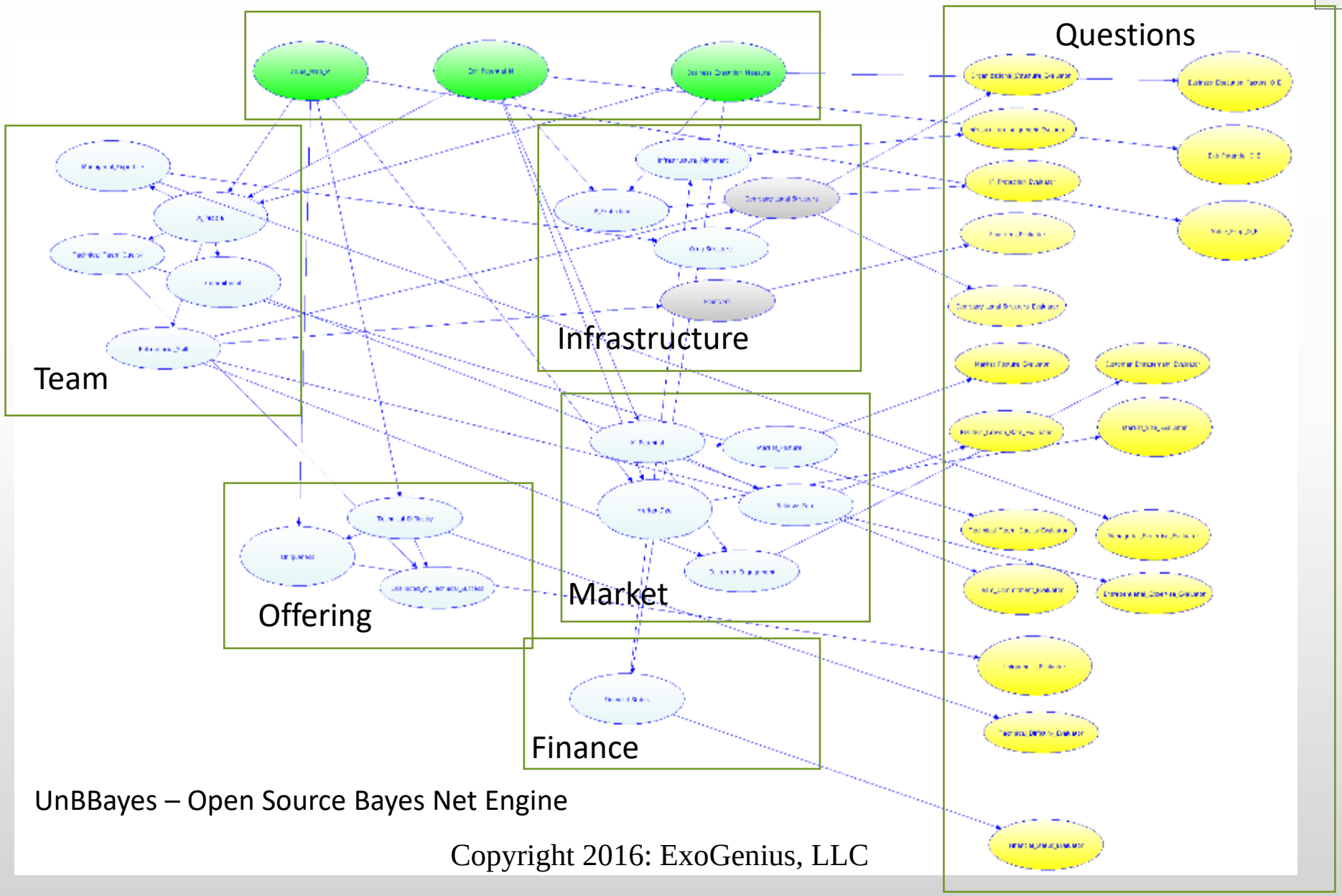
Navigation and Sensors Compare Evaluations

Proposal Name	Average Overall Score	Average Value Proposition Measure	Average Business Execution Measure	Average Exit Potential Measure
Third Insight (previously Visual Semantics)	77	92	67	67
Vaporsens: Nanofiber Chemical Sensors as a Flexible Platform for Smart Cities and First Responder Applications	60	57	66	52
EcoDomus, Inc.	60	61	66	48
Airgility, Inc.	58	58	65	42
Known Quantity Sensors	57	64	59	40
3AM Innovations	55	53	64	42
sitch ai llc	52	47	70	25
FLIR Systems, Inc.	50	50	69	12
Casper Drones	45	54	38	40
Smart Unmanned Aerial Vehicle for Exploration (SUAVE)	43	53	43	24
Amulet Corp of America	40	48	33	36
Enabling Autonomous Navigation of Small UAVs in Degraded Environments for Search and Rescue Missions	32	43	33	9

Assessment Data Collection Tool

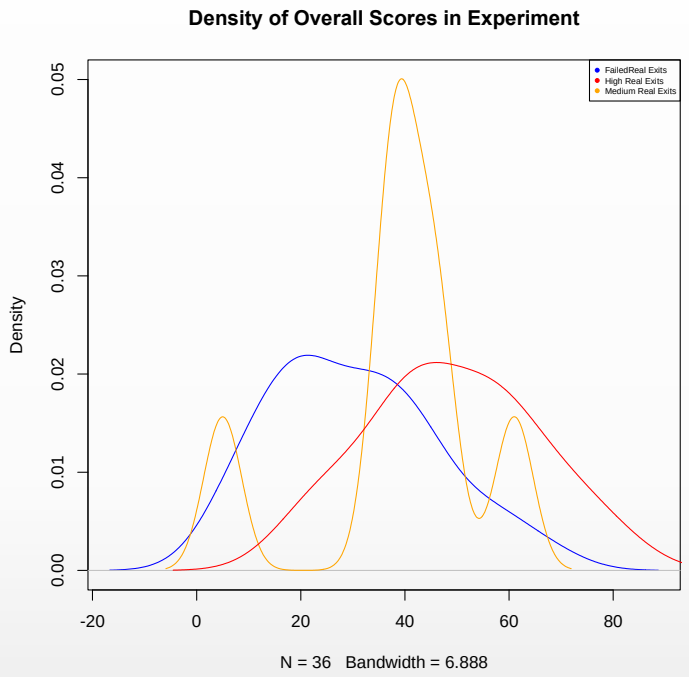


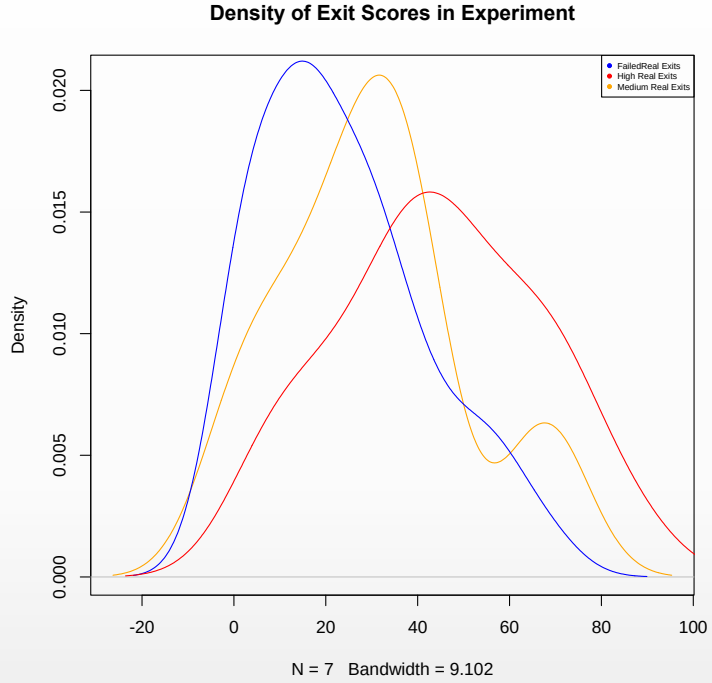
The Underlying Selection Model



UnBBayes – Open Source Bayes Net Engine

Model Effectiveness (V&V)





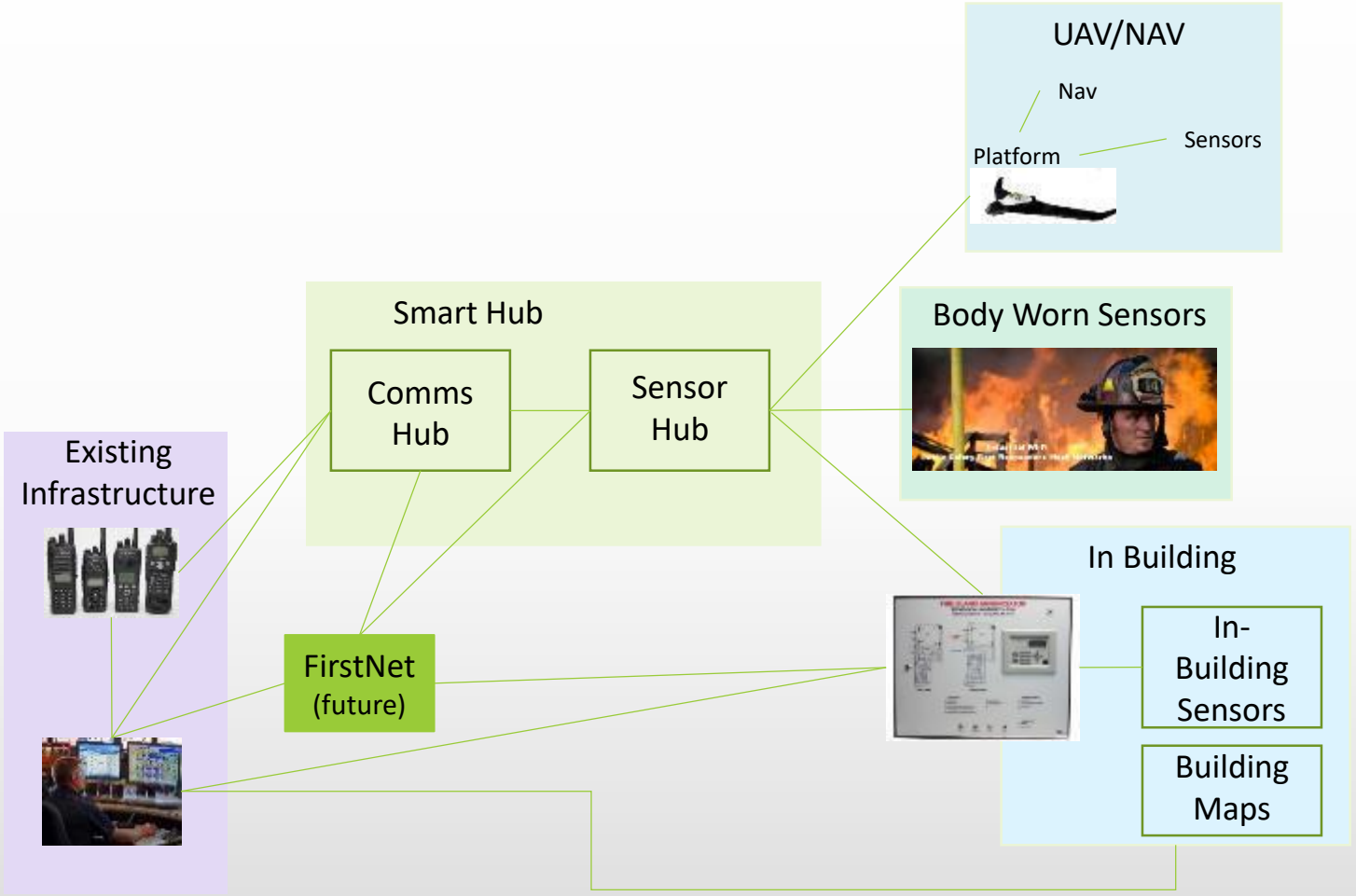
Clinical Trial Results

82%
accuracy
in identifying **failed start-ups**

77%
accuracy
in identifying a **"medium"** exit

41%
accuracy
in identifying **"large"** exits

Requiring Interoperability Throughout



Multi-Vendor Demo…. Often
Measure Results
Coordinate with Standards Organizations

Next Steps

- First Demo July 2018

KaDSci
KNOWLEDGE & DECISION SCIENCES

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CENTER FOR INNOVATIVE TECHNOLOGY

Questions?
Comments!

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