Sprinter Data

Team 521

FAMU-FSU
Engineering

Team Introductions

Dylan Cedeno
Project Manager
Presenter

Marc Griffiths
Design Engineer
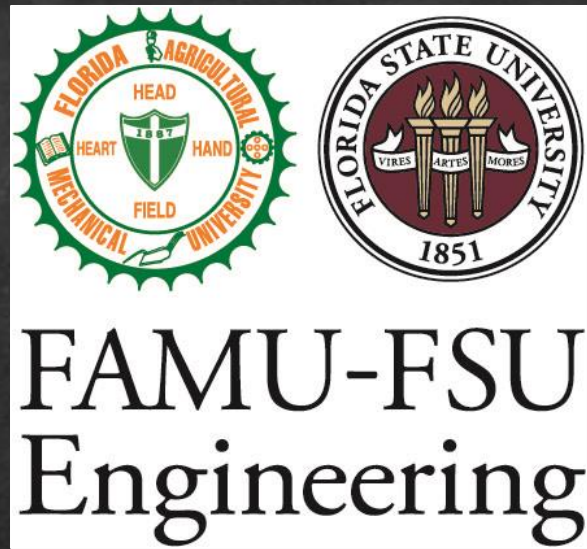Presenter

Jordan Noyes
Quality Engineer

Handy A Pierre
Research Engineer

Edwin Ulysse
Data Engineer

Sponsor and Advisor

Sponsor
FAMU-FSU College of Engineering
Academic Institution

Academic Advisor
Jonathon Clark, Ph.D.
Associate Professor

Dylan Cedeno

Summarizing DR4

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Objective

The objective of this project is to create a desirable product that will objectively measure and predict a sprinter's performance.
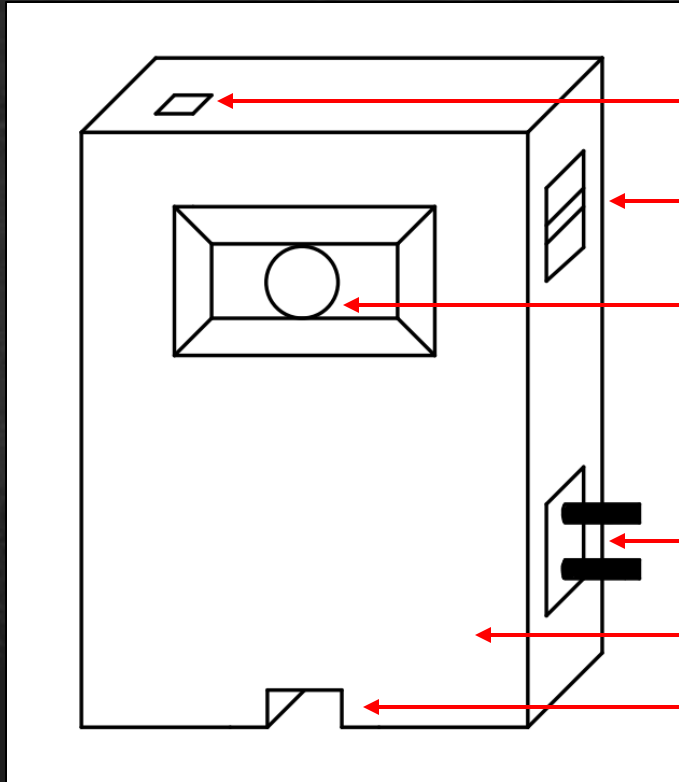
Dylan Cedeno

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Launch Monitor Pro Overview

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Base Station Details

Laptop Connection

Carrying Handle

High-Speed Camera

External Connections for Sensors

Battery Housing

Alignment Tool for Starting Line

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InNOLEvation Challenge

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The InNOLEvation Process

🏃 Applied for the competition

🏃 Competed against other entrepreneurial groups
   🏃 Business pitch
   🏃 Market research
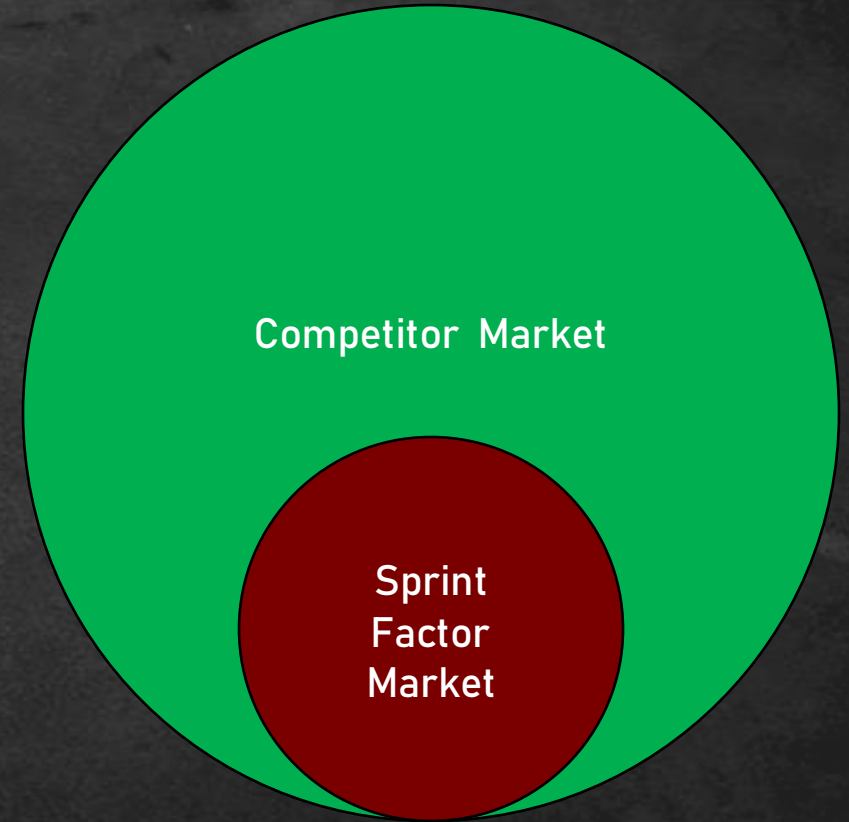🏃 Made it through the first rounds to the semi-finals

🏃 Attempted to proceed to finals

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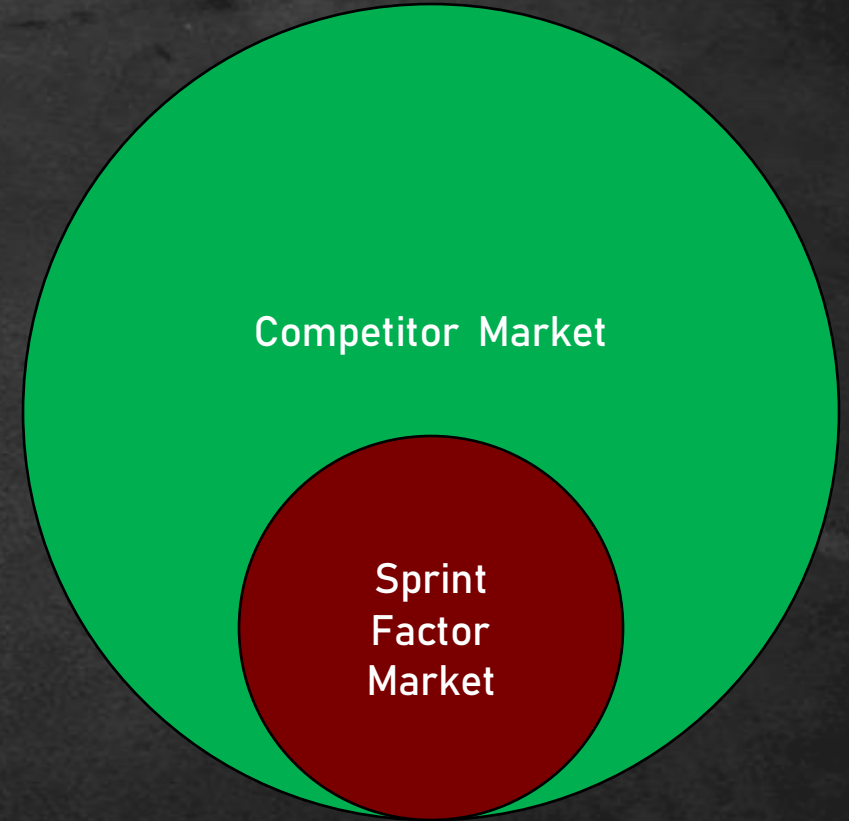Department of Mechanical Engineering and Industrial Engineering

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Why Did We Lose?

Market Size

Competitor Market

Sprint
Factor
Market

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What Did We Learn?

🏃 Need a plan to expand to larger markets

🏃 More about the business approach to design
- 🏃 Less technical explanation
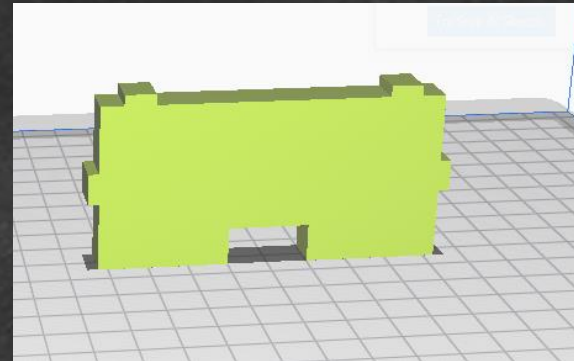- 🏃 More focus on finances

🏃 Ways to expand market research

Competitor Market
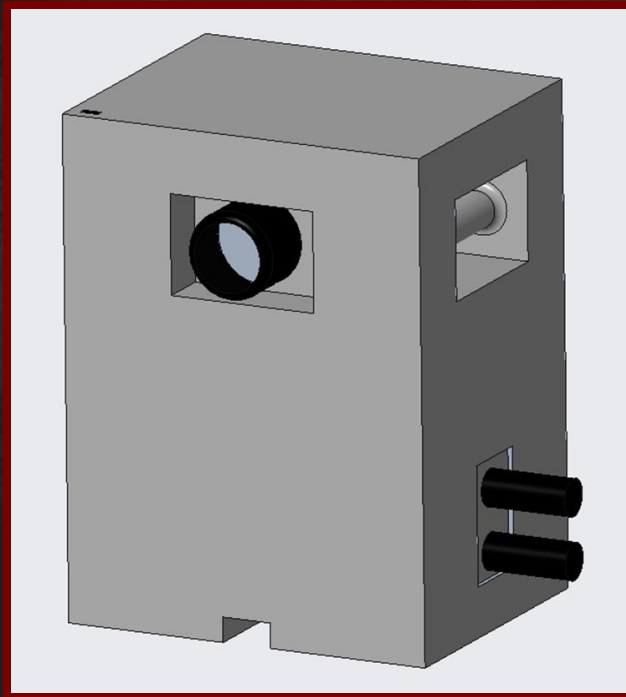
Sprint Factor Market

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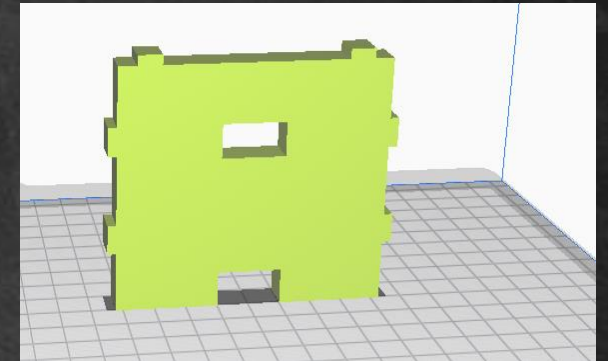FAMU-FSU Engineering

CAD Model

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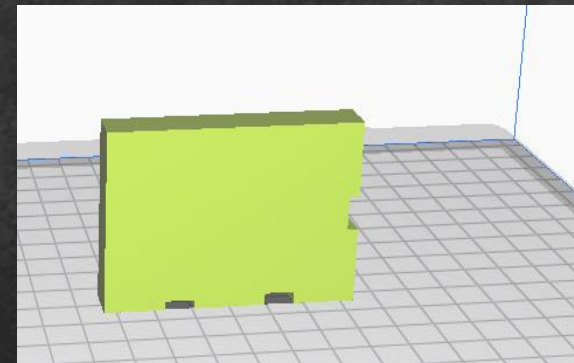# Detailed CAD Model – Modular Base Station

Top

Front

Side
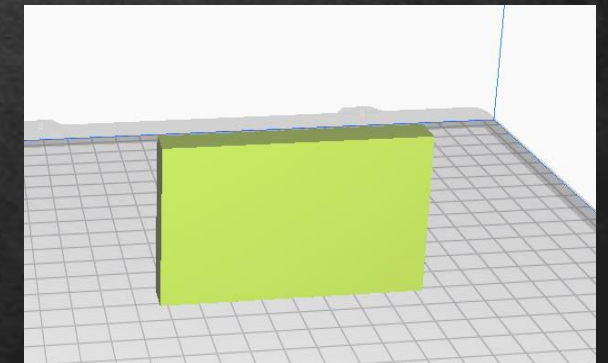
Shelf

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Purchasing Parts

Parts Purchased and Parts on Hold

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High Speed Camera

🏃 Description: MaxxMove Rize H4 4K Action Camera (Black)

🏃 Unit Price: $93.79

🏃 Quantity: 1

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Force Sensors

🏃 Description: SENSOR FORCE LOAD CELL 500LBS

🏃 Unit Price : $140.45

🏃 Quantity: 1

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Measuring Tape

- Description: 15 m Fiberglass Metric Long Tape Measure, Pumpkin
- Unit Price : $20.42
- Quantity: 1

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Housing Sensor Connectors

- Description: QWIIC CABLE – 500MM
- Unit Price : $2.19
- Quantity: 10

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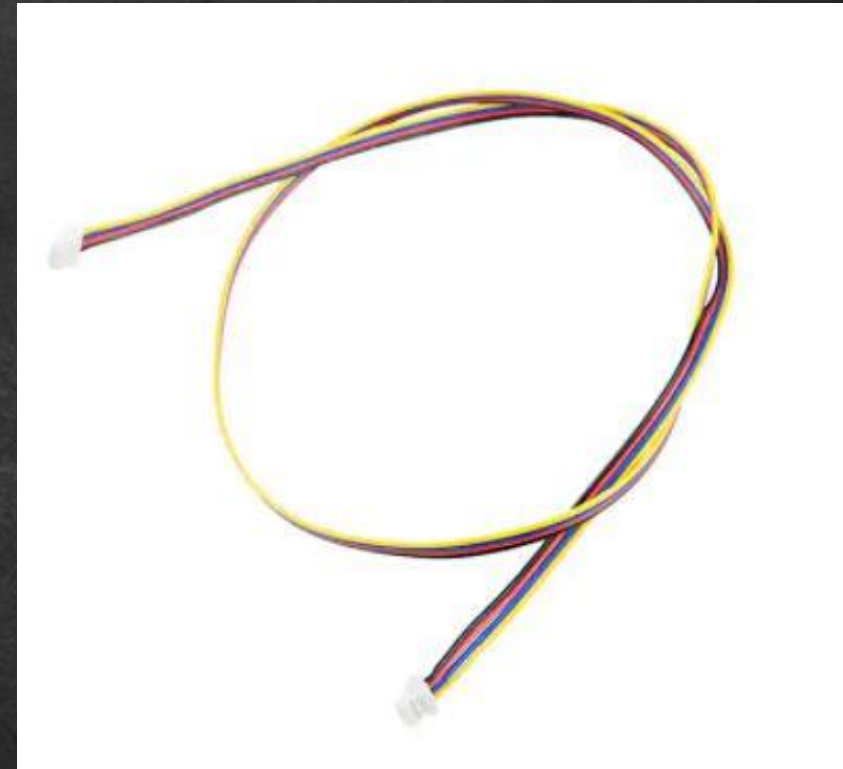
Audio Recorder

- OMNI-DIRECTIONAL MICROPHONE -50D
- Unit Price : $1.45
- Quantity: 10

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Battery Pack

- Description: Acellories 10,000mAh Power Badge Power Bank (Black)
- Unit Price : $14.99
- Quantity: 1

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USB Extender

⚡ Description: 1m Extension USB Cable, A Male to A Female, Black

⚡ Unit Price : $2.99

⚡ Quantity: 1

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Internal Wiring

⚐ Description: JUMPER WIRE M/M 6" 20PCS

⚐ Unit Price : $1.95

⚐ Quantity: 1 pack (20 wires)

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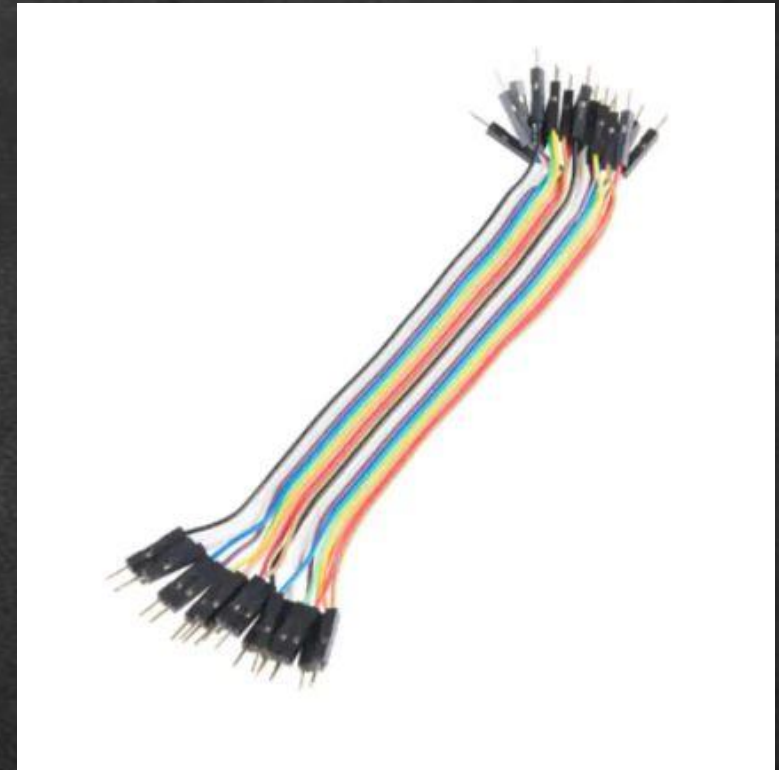
Parts on Hold

Expensive parts that need further analysis and assistance

- Dots
- Infrared sensors
- On board processor
- External wires
- Software

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Future Work

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What's Next...

Assembly

Testing

Revisions

Re-Testing

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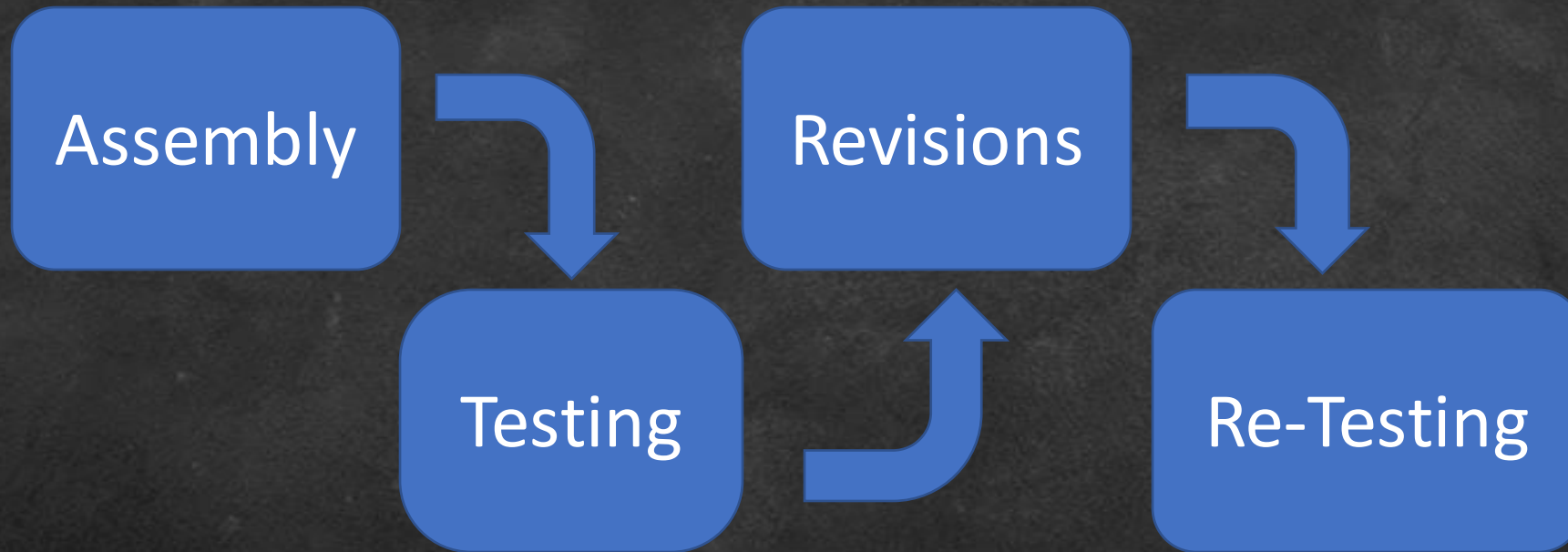
Assembly

🏃 Code for machine learning software

🏃 Load code onto on board processor

🏃 Splice & solder wires

🏃 Check for general functionality

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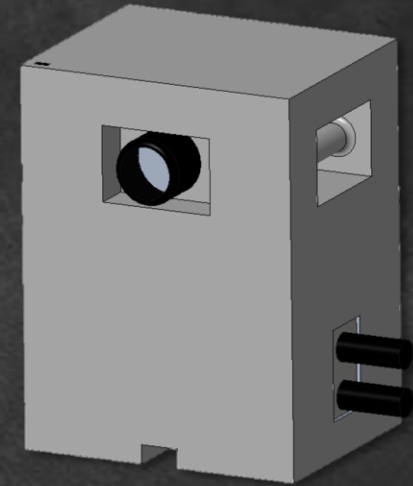
Testing

- 🏃 Group will test it
  - 🏃 No unnecessary forms for volunteers

- 🏃 Stress Test
  - 🏃 Test every worst-case scenario

- 🏃 Make sure every function works

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Revisions

🏃 Use what was learned during the testing stage

🏃 Adjust for errors with hardware

🏃 Revise code

🏃 Revisit the functionality and mobility of the base station

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Re-Testing

🏃 Test the fixes that were made

🏃 Find additional problem areas

🏃 Redesign if necessary

🏃 Finalize the Launch Monitor Pro

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Thank You for Listening!

Our mission is to utilize technology to enhance the performance of athletes and help them maximize their full potential.

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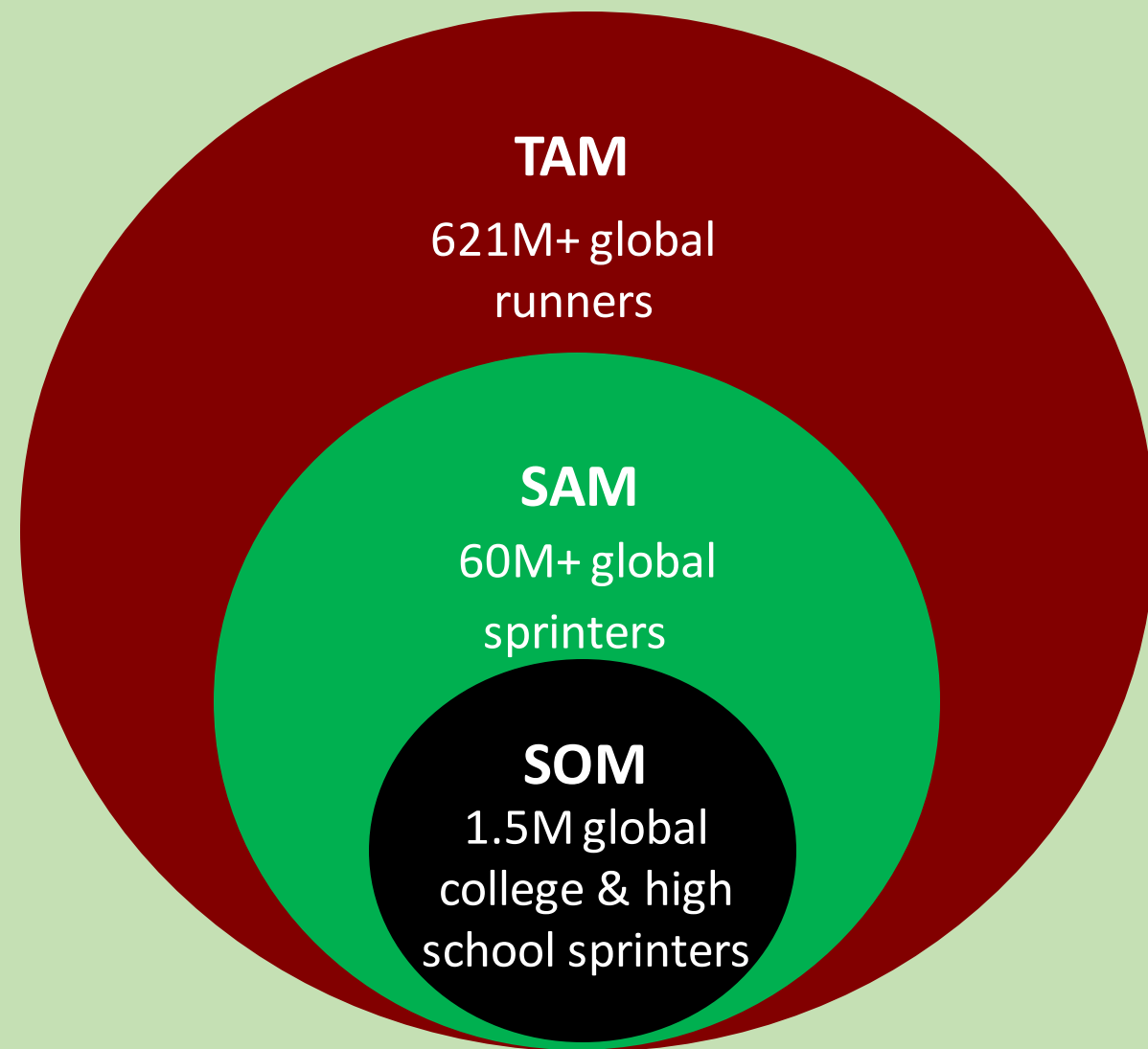
Backup Slides

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Market Size

- **TAM** Total Available Market
- **SAM** Serviceable Available Market
- **SOM** Serviceable Obtainable Market

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TAM
621M+ global runners

SAM
60M+ global sprinters

SOM
1.5M global college & high school sprinters

Bill of Materials

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