



# Lockheed Martin Human Type Target System

# Conceptual Design

## Team 7

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# Introduction and Background

- Lockheed Martin is designing a Human Type Target System for training Law Enforcement and Military personnel as a part of their Urban Operations Training System.
- Lockheed Martin is currently purchasing a competitor's product for use
- This product does not meet their standards for realism or durability
- Lockheed Martin has a basic design concept for their design

# Need Statement

**“Lockheed Martin’s current human type target system is incomplete and requires further design for manufacturability and durability.”**

# Goal Statement

**“The goal of this project is to revise a prototype human type target system, that falls when hit with a series of lethal shots, and take it to a production-ready-state.”**

# Current Solution

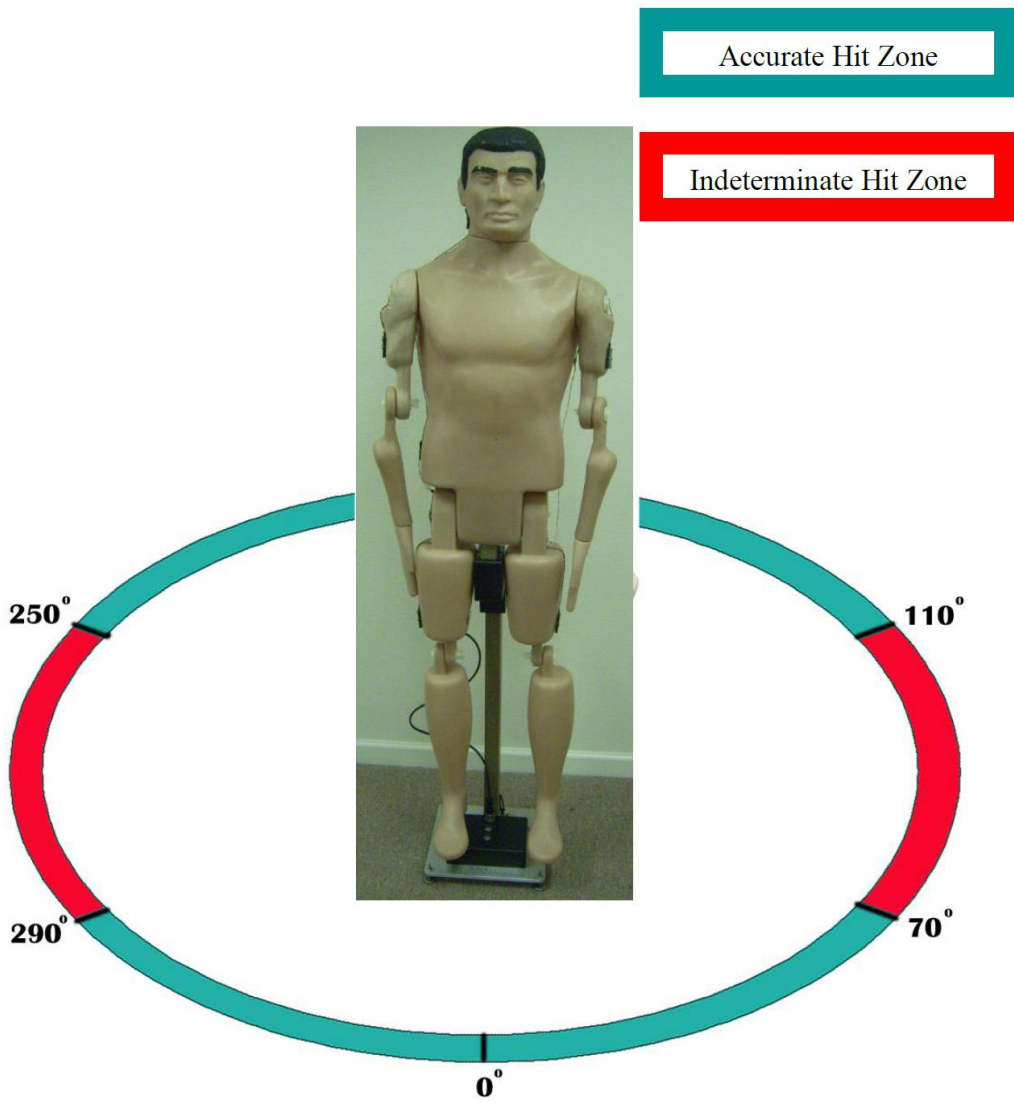


Figure 2

# Current Design



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# Main Design Components

- Target body
- Impact sensors (x6)
- Interface plates (x2)
- Latch mechanisms (x2)
- Stand with 2 ft x 2 ft base plate

# Gantt Chart

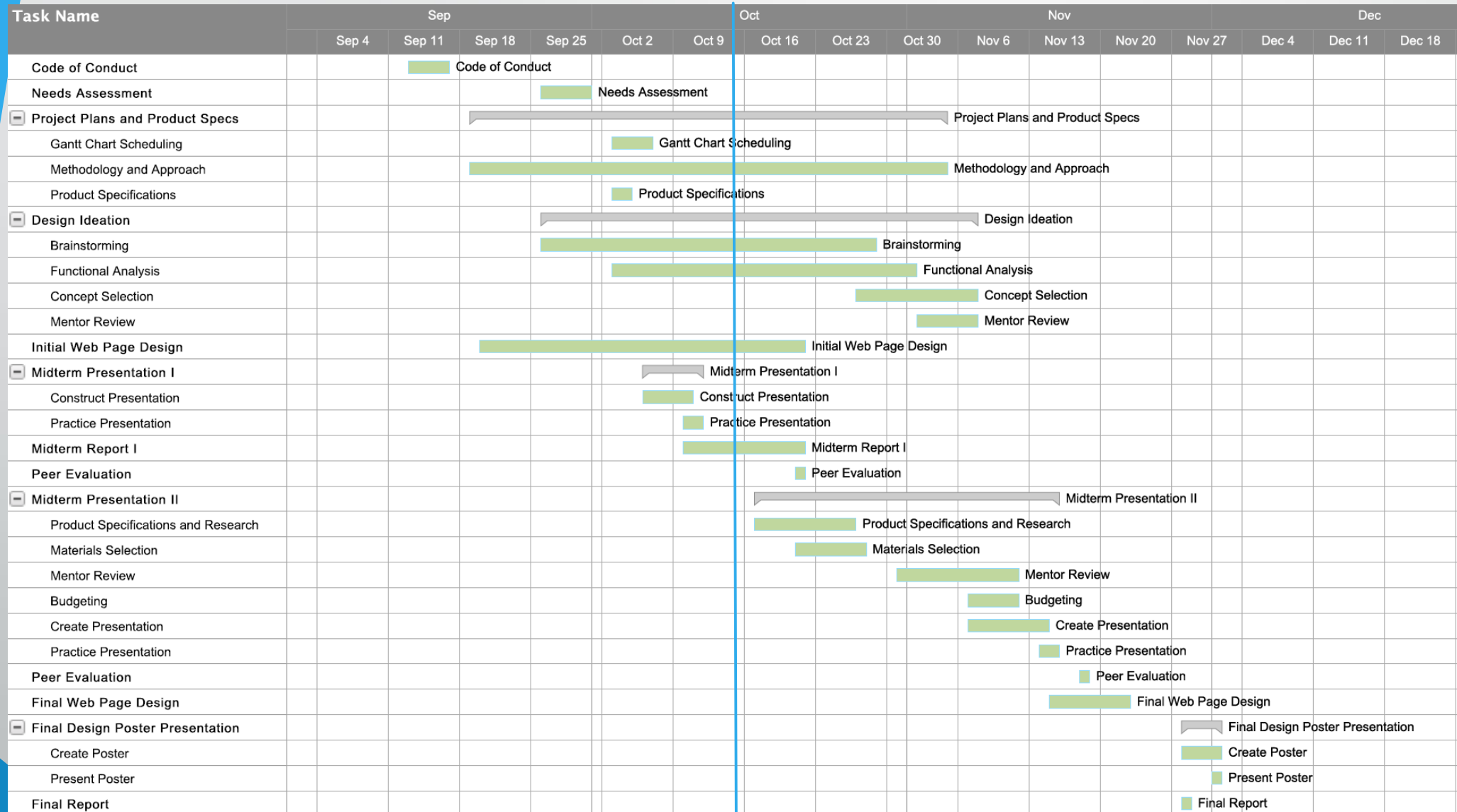


Figure 3

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# Constraints

- Perform at least 1000 drops before failure
- Ricochet averse
- Moveable by 1 person
- Max 2 ft x 2 ft base plate
- Capable of withstanding impacts from 7.62 mm, 5.56 mm, and airsoft BB rounds
- Operable in a variety of environmental conditions

# Constraints Continued

- Target prices – batches of 100
  - Interface plate - \$50.00 each
  - 2x4 interface adapter - \$25.00
  - Stand - \$70.00

# House of Quality



Customer Requirements	Priority	Weight	Interchangeable Parts	Sensor Protection	Stand Design	Material	Ease of Production	Ease of Assembly	Size of Stand
Performance	5	3		9	9				
Ease of Repair	4	3	9		3	9		9	1
Stability	5	9			9				9
Environmental Adaptivity	3			3		9			
Manufacturability	4	1	9		3	3	9	9	1
Cost	4	1	9		3	9	3	3	3
Mobility	3	9			3			9	9
Safety	5	3		3	9	9			1
Bullet Resistant	5			9	3	9			
Durability	4	1		3	3	9			1
Priority		3	5	3	3	5	3	4	2
Absolute Weight		20	27	27	45	57	12	30	25
Relative Weight		60	135	81	135	285	36	120	50
Relative Importance		5	2	4	2	1	7	3	6

Figure 4

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Figure 5

# Interface Plate Conceptual Design #1

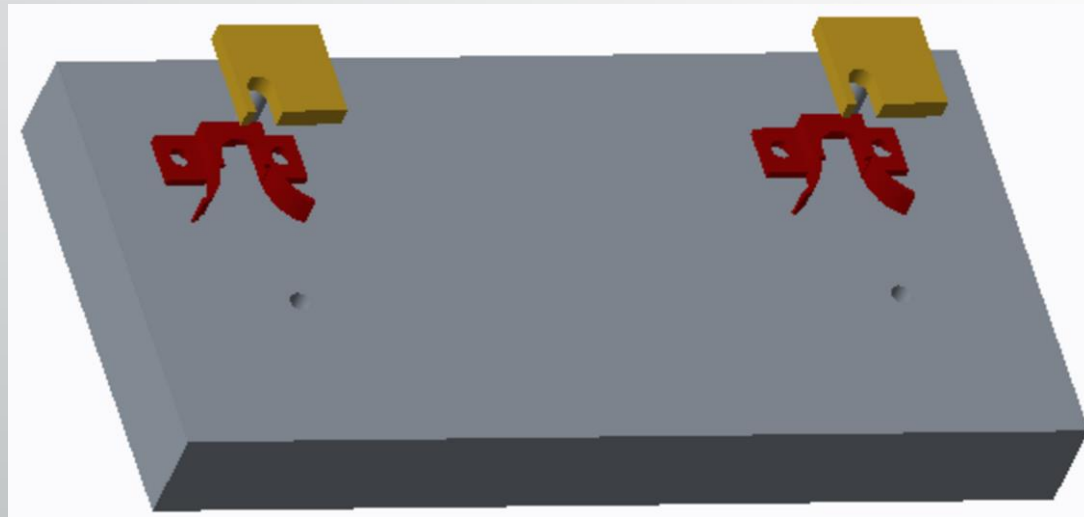


Figure 6

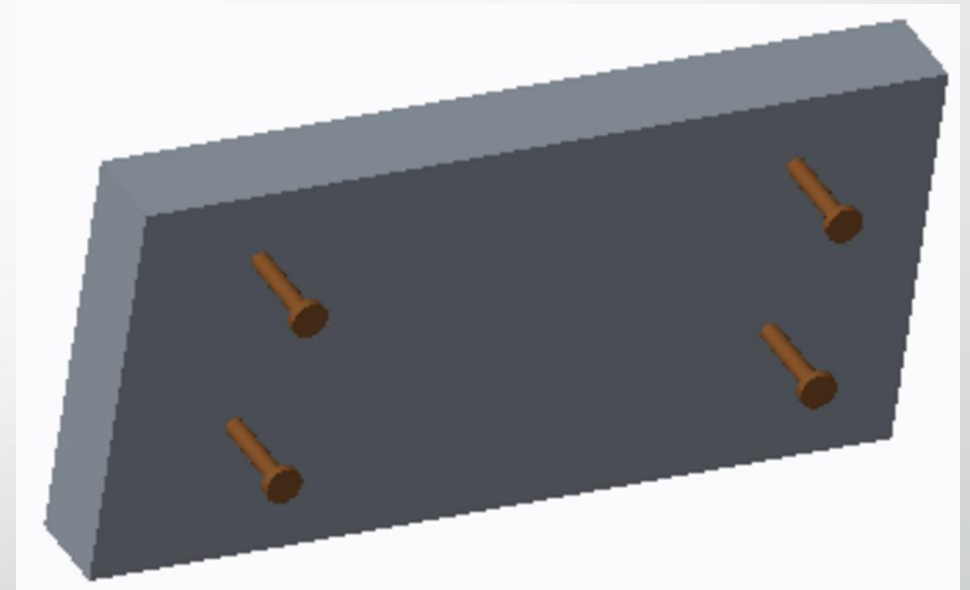


Figure 7

# Interface Plate Conceptual Design #1

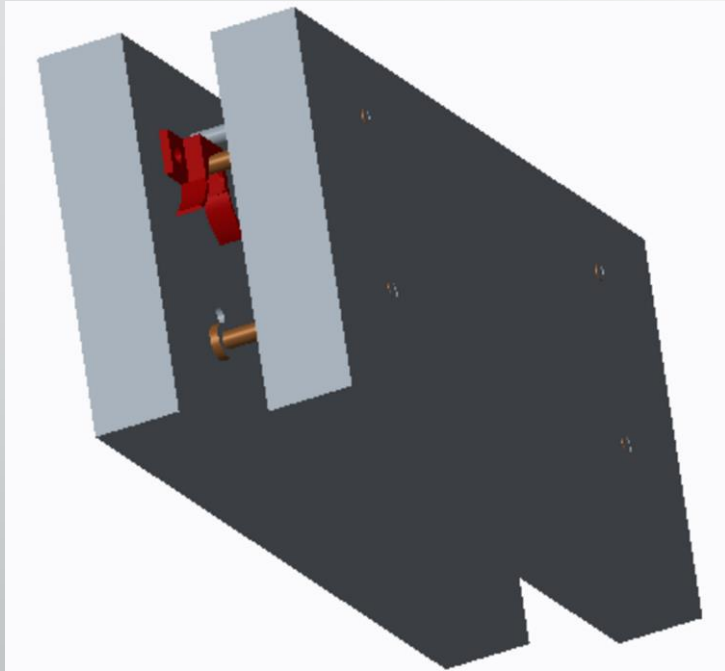


Figure 8

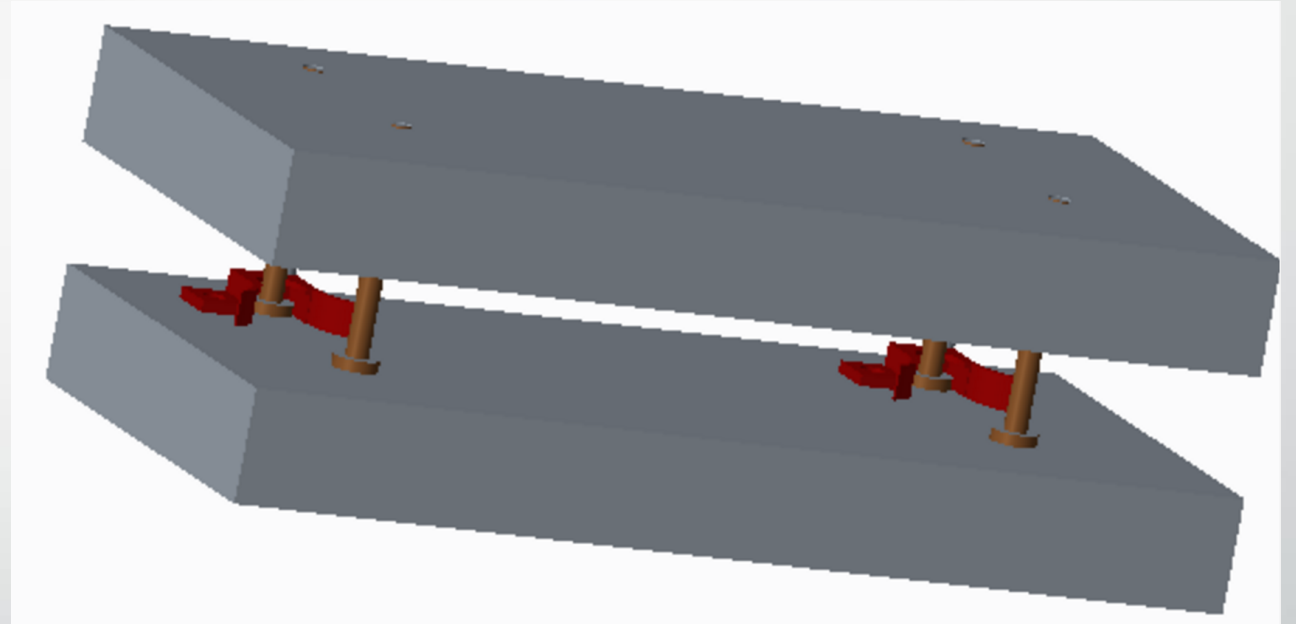


Figure 9

# Interface Plate Conceptual Design #2

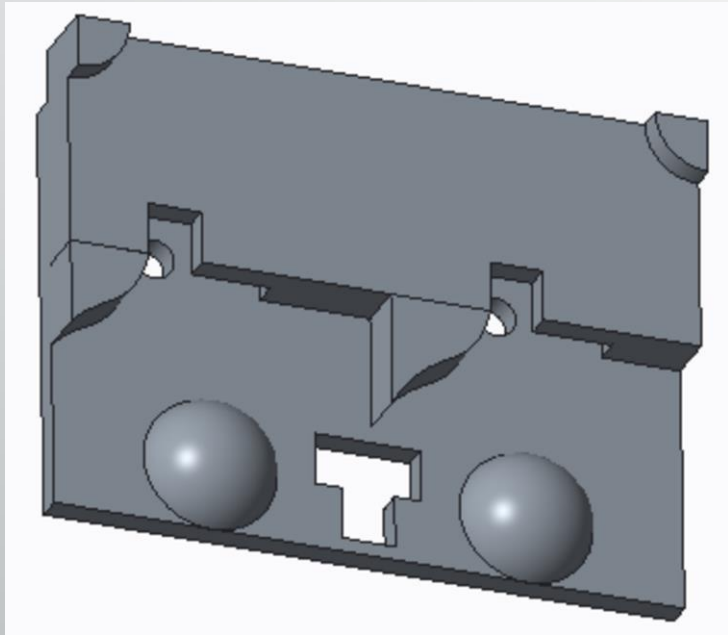


Figure 10

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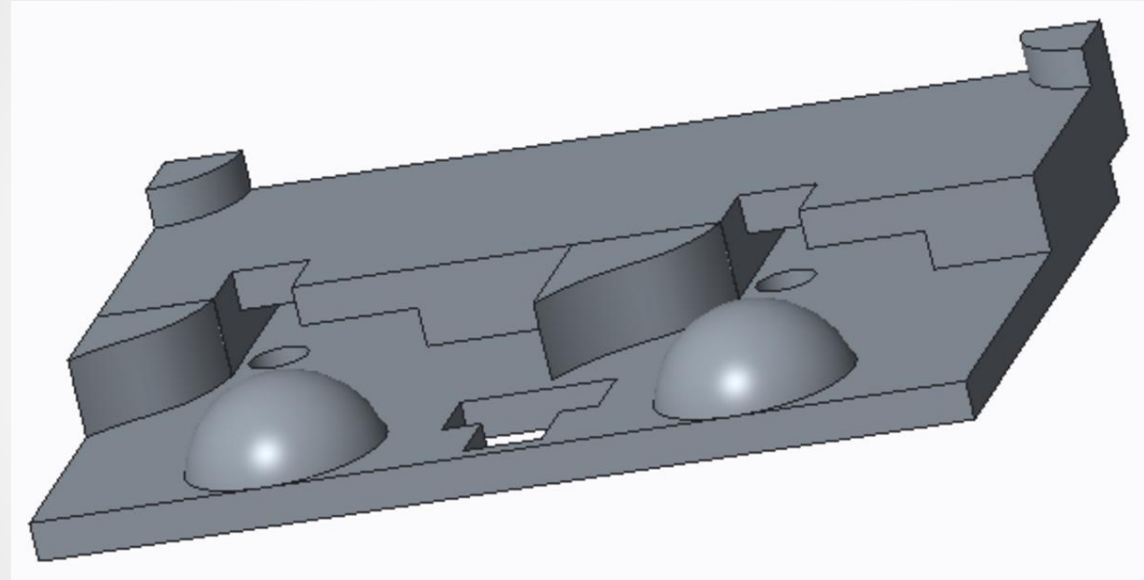


Figure 11

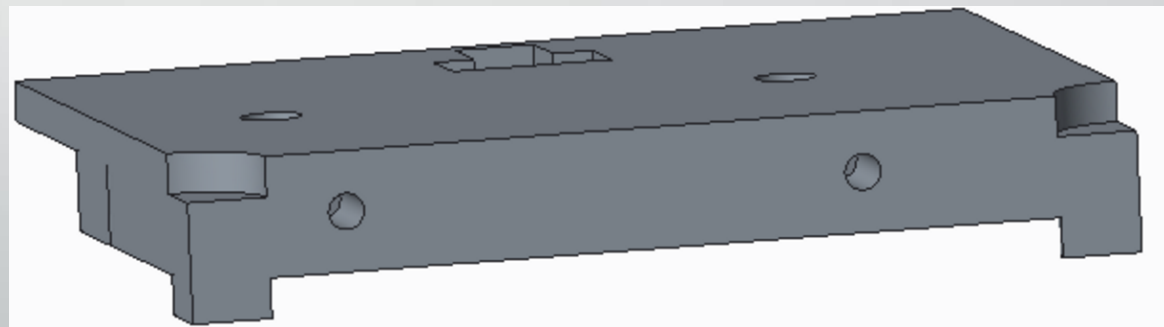


Figure 12

# Interface Plate Conceptual Design #2

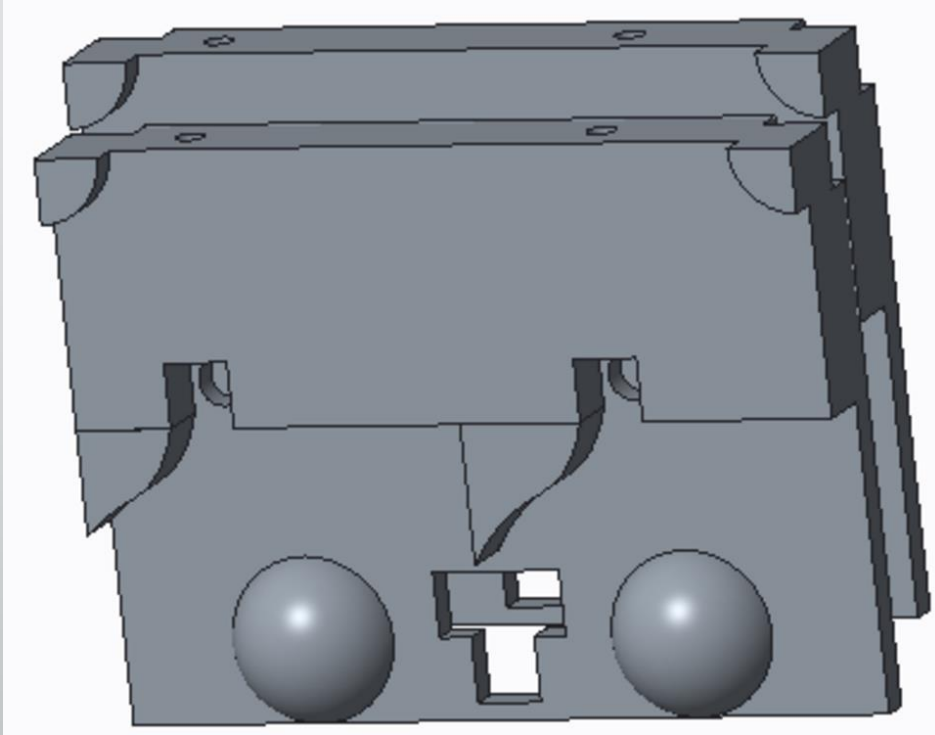


Figure 13

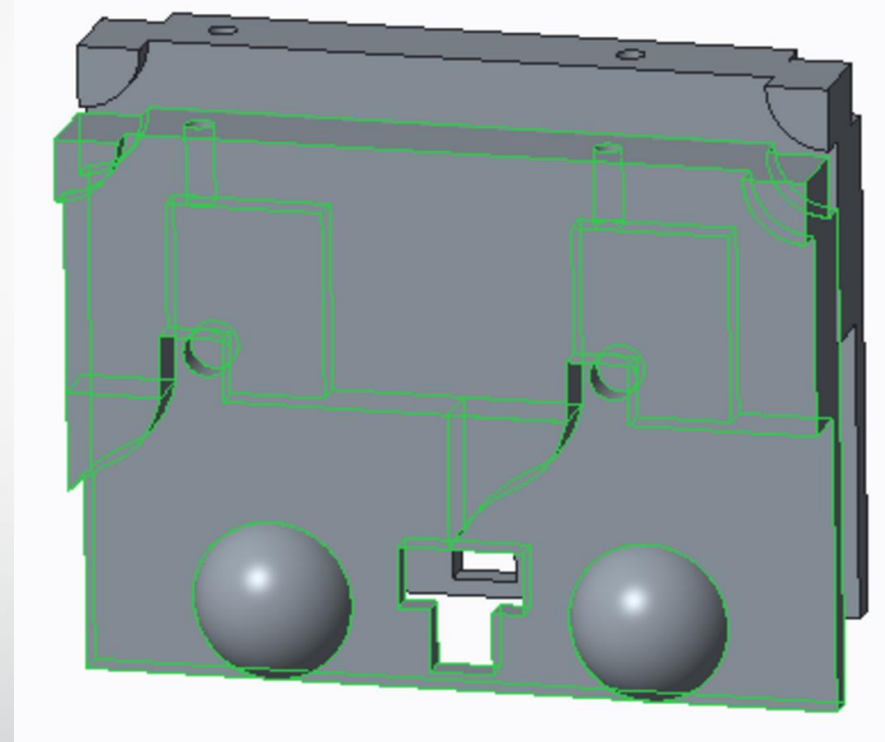


Figure 14

# Next Steps

- Select interface plate design
- Research materials
- Prototype concepts
- Continue model testing
- Design website



# Summary

- Needs statement
- Goal statement
- Current solution
- Constraints
- House of quality
- Conceptual designs