Separation Connector Improvement

Concept Generation and Decisions

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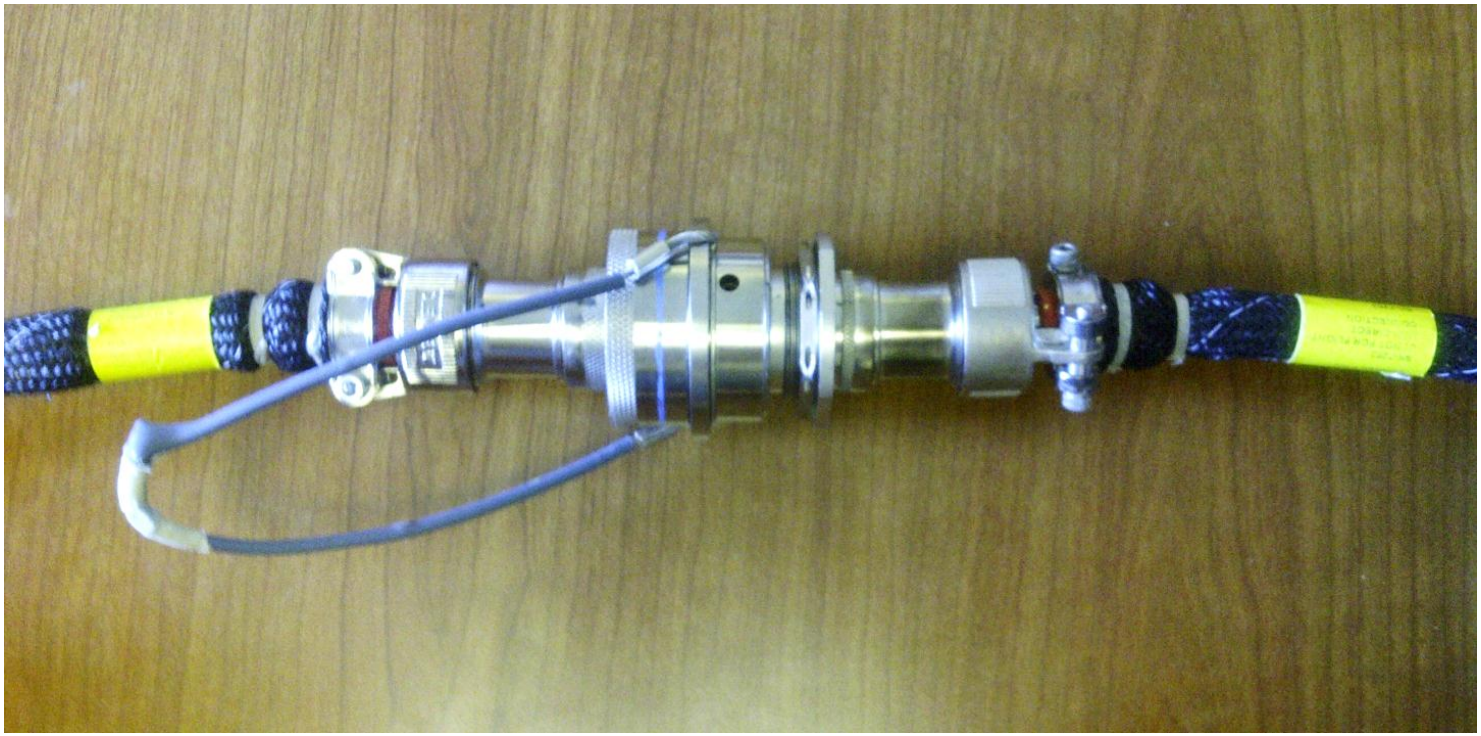
Presentation Overview

- Project Overview
- Problem Statement
- Concept Generation
- Concept Selection
- Updated Gantt Chart
- Conclusion
- References

Project Overview

- Separation Connection



Problem Statement

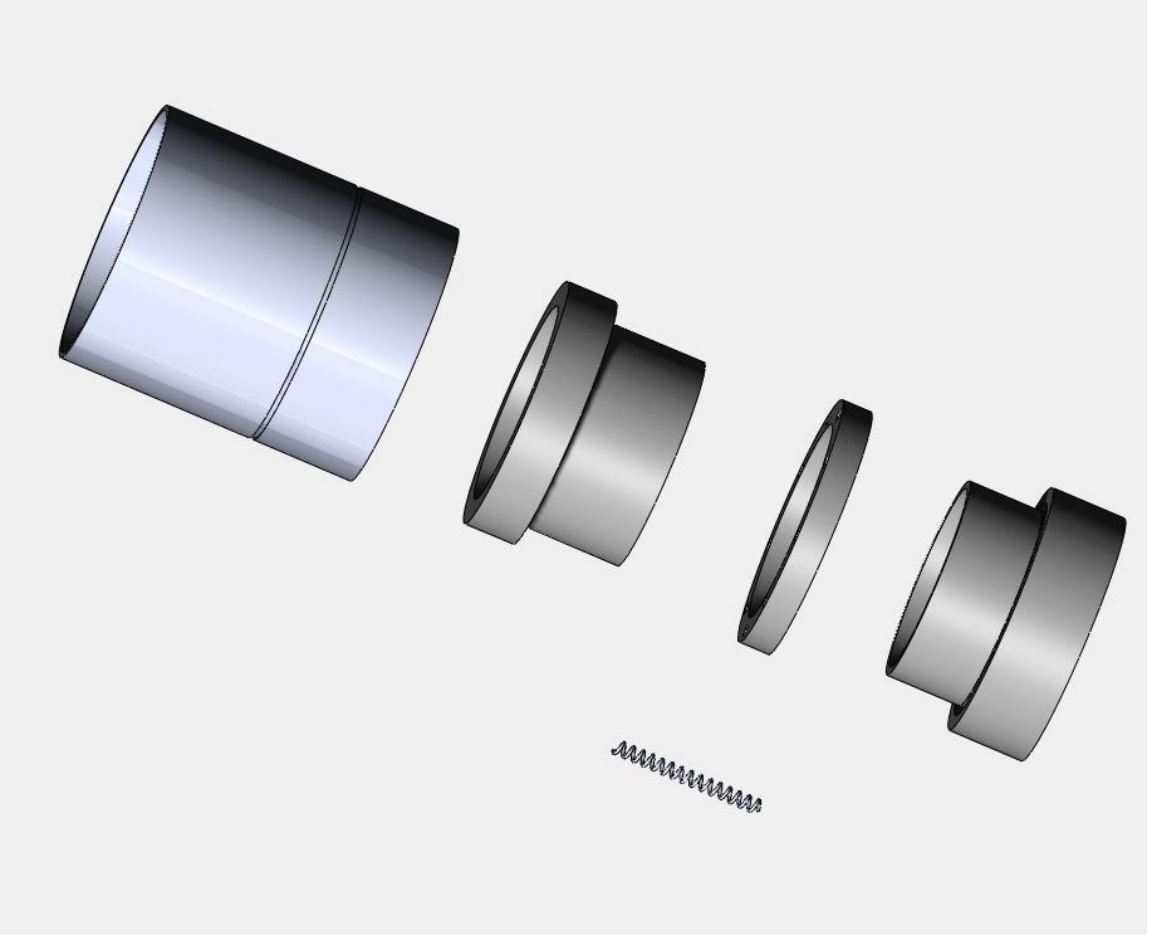
- The goal for this project is to design and prototype a perfectly reliable, inexpensive, and easily manufacturable separation connector

Concept Generation Overview

- Spring Hammer Design
- Lever – Action Design
- Spring Button Design
- Ball Bearing Design

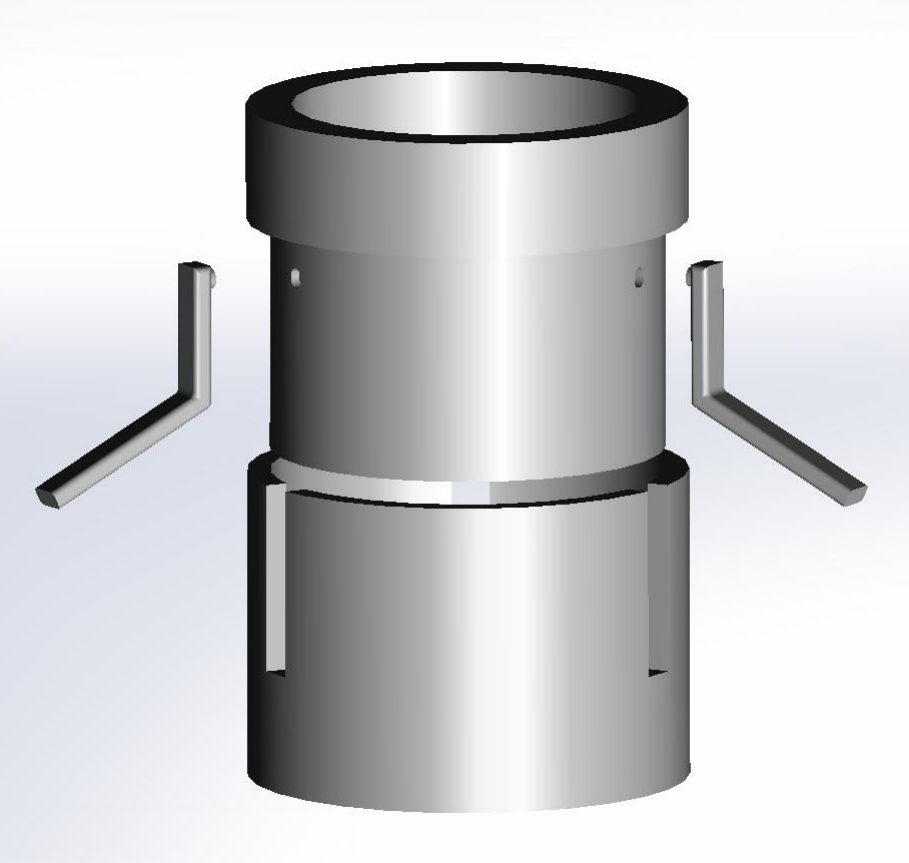
Concept Generation

- Spring Hammer Design



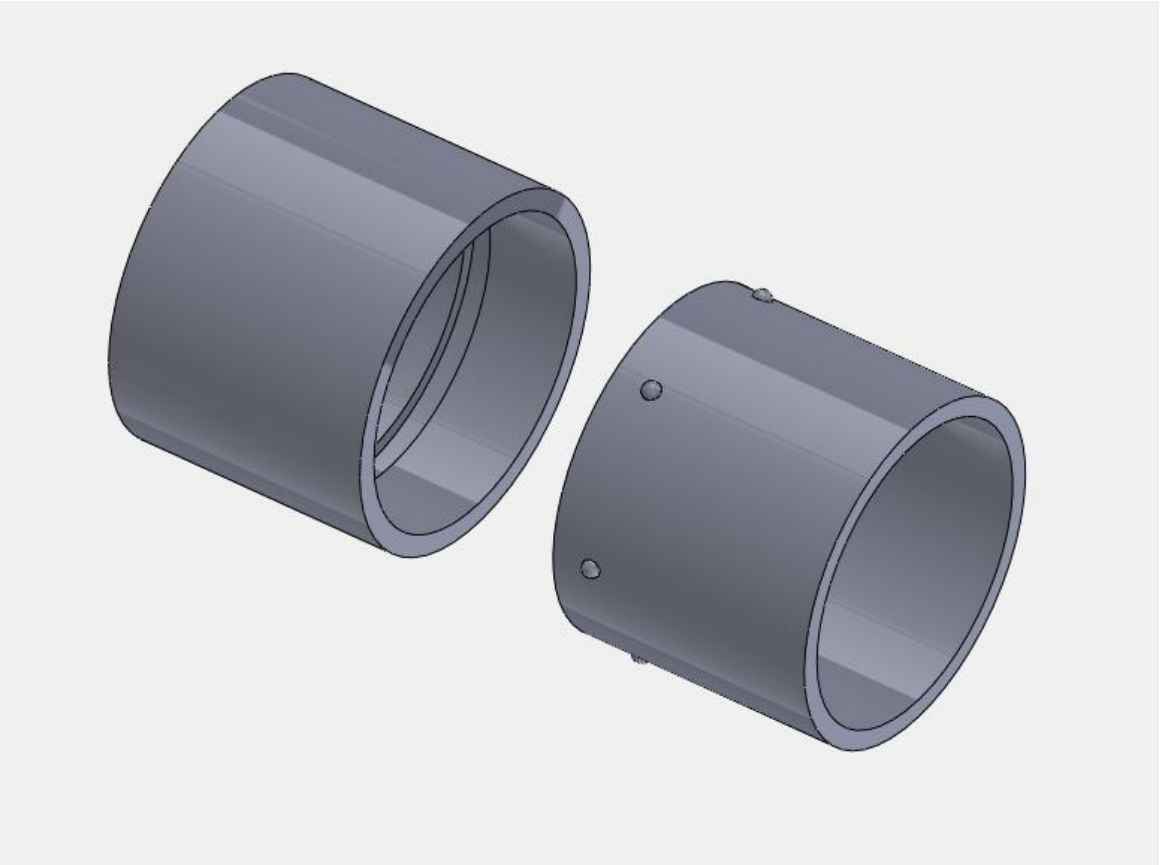
Concept Generation

- Lever – Action Design



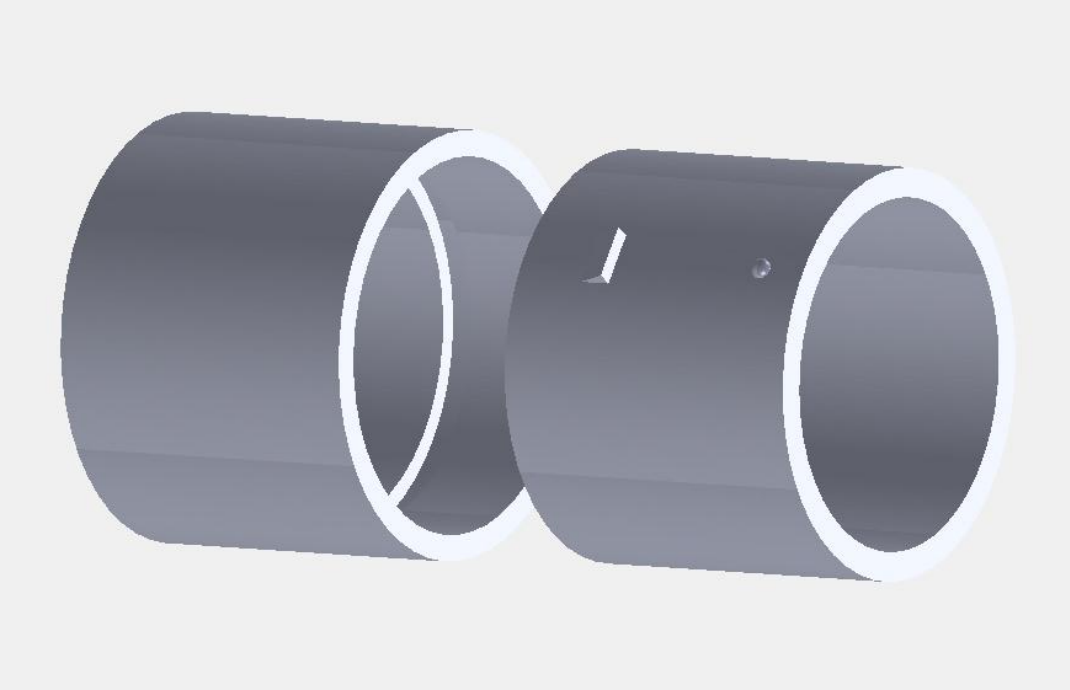
Concept Generation

- Ball Bearing Design



Concept Generation

- Spring Button Design



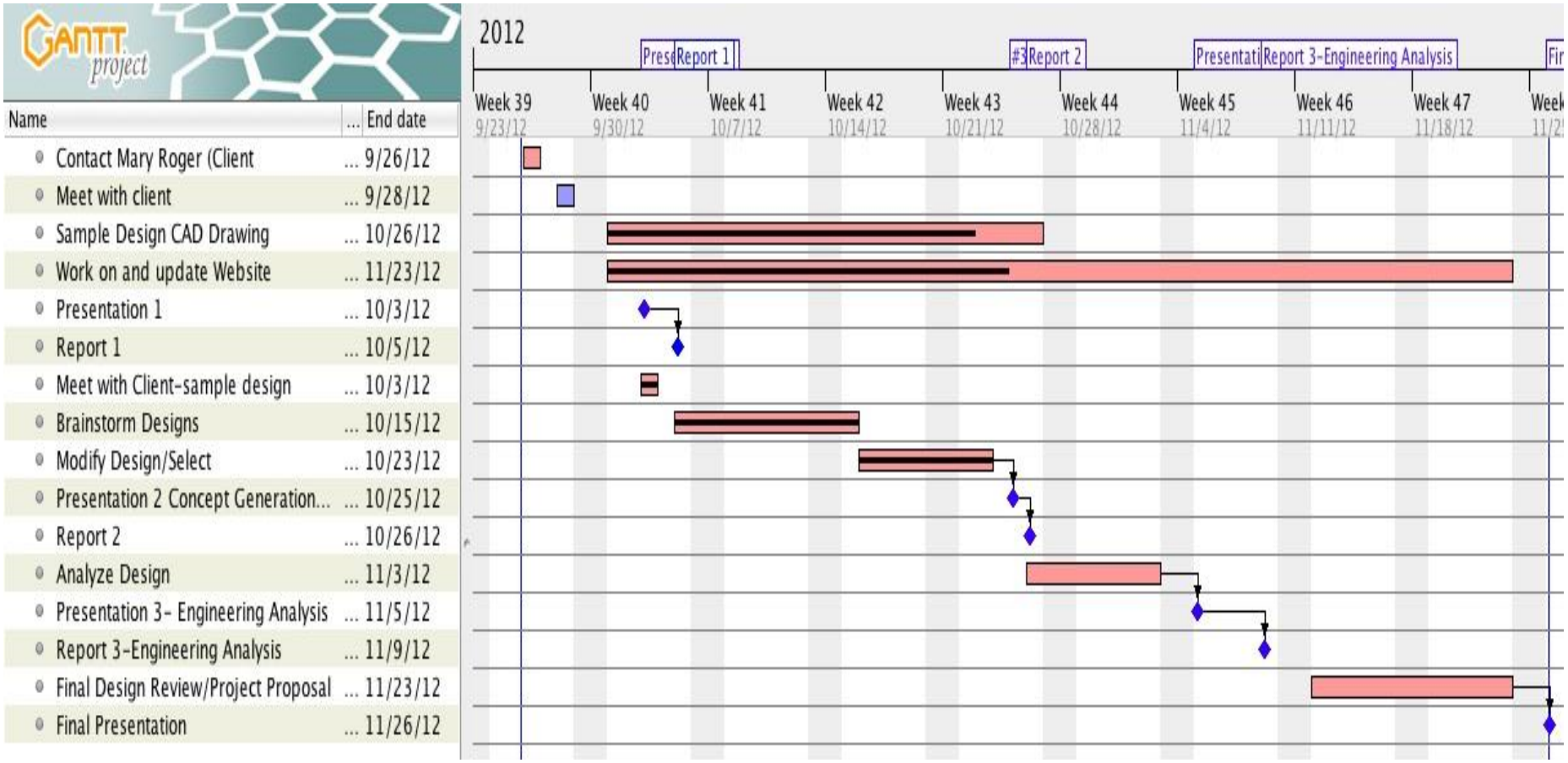
Criteria Scale

Performance Level	Value	Cost ($)	Manufacturability (hr)	Damage Resistant	Reliability (%)	Weight (lb)	Pull Angle (angle)	Size (inches)
Perfect	9	200	4	0.01	100	>1.5	>25	>2
	8	<225	>5	>.02	>99.75	>1.75	>22.5	>2.1
Excellent	7	<250	>6	>.03	>99.5	>2	>20	>2.2
	6	<275	>7	>.04	>99.25	>2.25	>17.5	>2.3
Good	5	<300	>8	>.05	>99	>2.5	>15	>2.4
	4	<325	>9	>.06	>98.75	>2.75	>12.5	>2.5
Fair	3	<350	>10	>.07	>98.5	>3	>10	>2.6
	2	<375	>11	>.08	>98.25	>3.25	>7.5	>2.7
Inadequate	1	400	>12	>.09	>98	3.5	>5	2.8

Decision Matrix

Determining Factors	Spring Hammer Design	Ball-Bearing Design	Lever-Action Release Design	Spring Button Design	Weights
Cost	6	6	6	6	0.04761
Size	4	8	4	8	0.09523
Weight	6	7	6	7	0.14285
Manufacturability	4	8	4	7	0.19047
Reliability	8	7	8	9	0.28571
Pull Angle	9	4	9	8	0.09523
Damage Resistant	6	8	6	8	0.14285
Total	43	48	43	53	
Weighted Total	6.523	6.142	5.428	6.428	

Gantt Chart Update



Conclusion

- Design Concepts
- Criteria Scale
- Decision Matrix
- Final Decision

References

- http://www.powell.com/Amphenol/D38999/D38999catalog.pdf
- http://www.glenair.com/interconnects/mildtl38999/

Questions?