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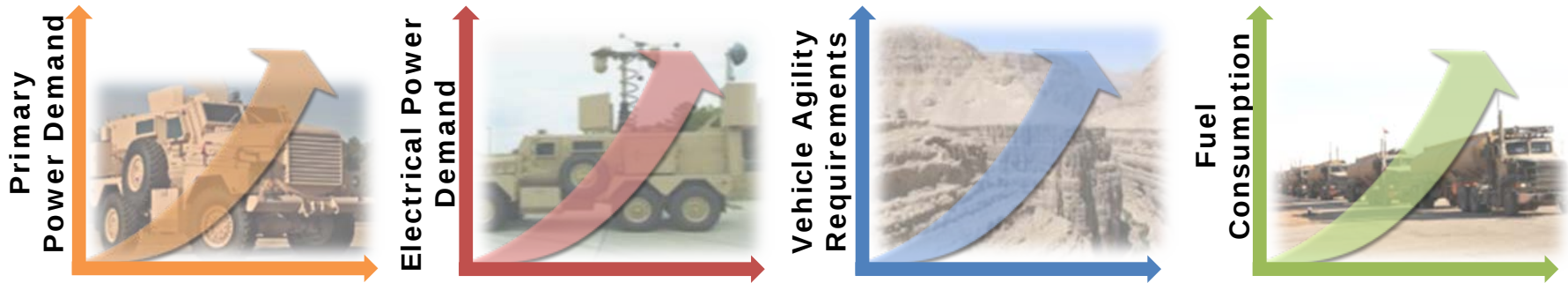
Germany Briefing



TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.

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Ground Vehicle Power and Mobility
27 July 2011

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**Increasing demands, operational flexibility, and inter-relationships
Requires a Systems Engineering approach and investments in key technology areas**



Propulsion & Thermal Management



Non-Prime Power Systems



Advanced Propulsion



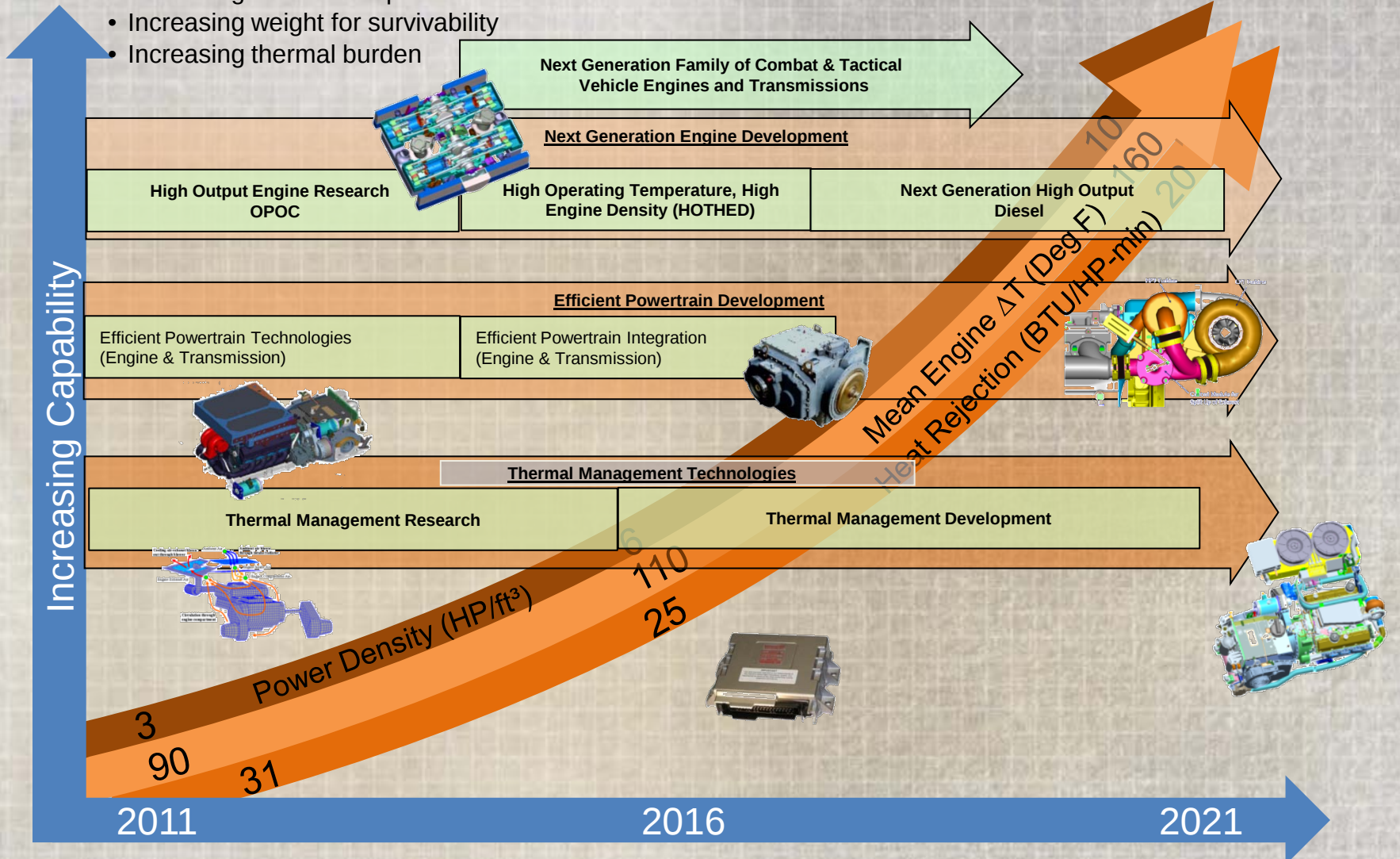
Track & Suspension

Systems Level Analysis, Integration and Testing

Propulsion and Thermal Management	Diesel Engines Turbine Engines Transmissions	Advanced Radiators Electrified Thermal Components	Advanced Electronics Cooling Heat Recovery	Thermal Architectures
Non-Prime Power Systems	JP-8 Fuel Cell APU Rotary Engine APU	Advanced Lithium Ion Batteries Advanced Lead Acid Batteries	Capacitors Li-Ion / Ultracap Hybrid Energy Storage	
Advanced Propulsion	Integrated Starter Generator Advanced Propulsion Systems	Traction Motor Testing Advanced Propulsion Reliability Testing	High Temperature / Power SiC Power Electronics Wide Band Gap Materials (SiC)	
Track and Suspension	Track Systems Suspension Systems	Electronic Stability Control Track Elastomer Research		

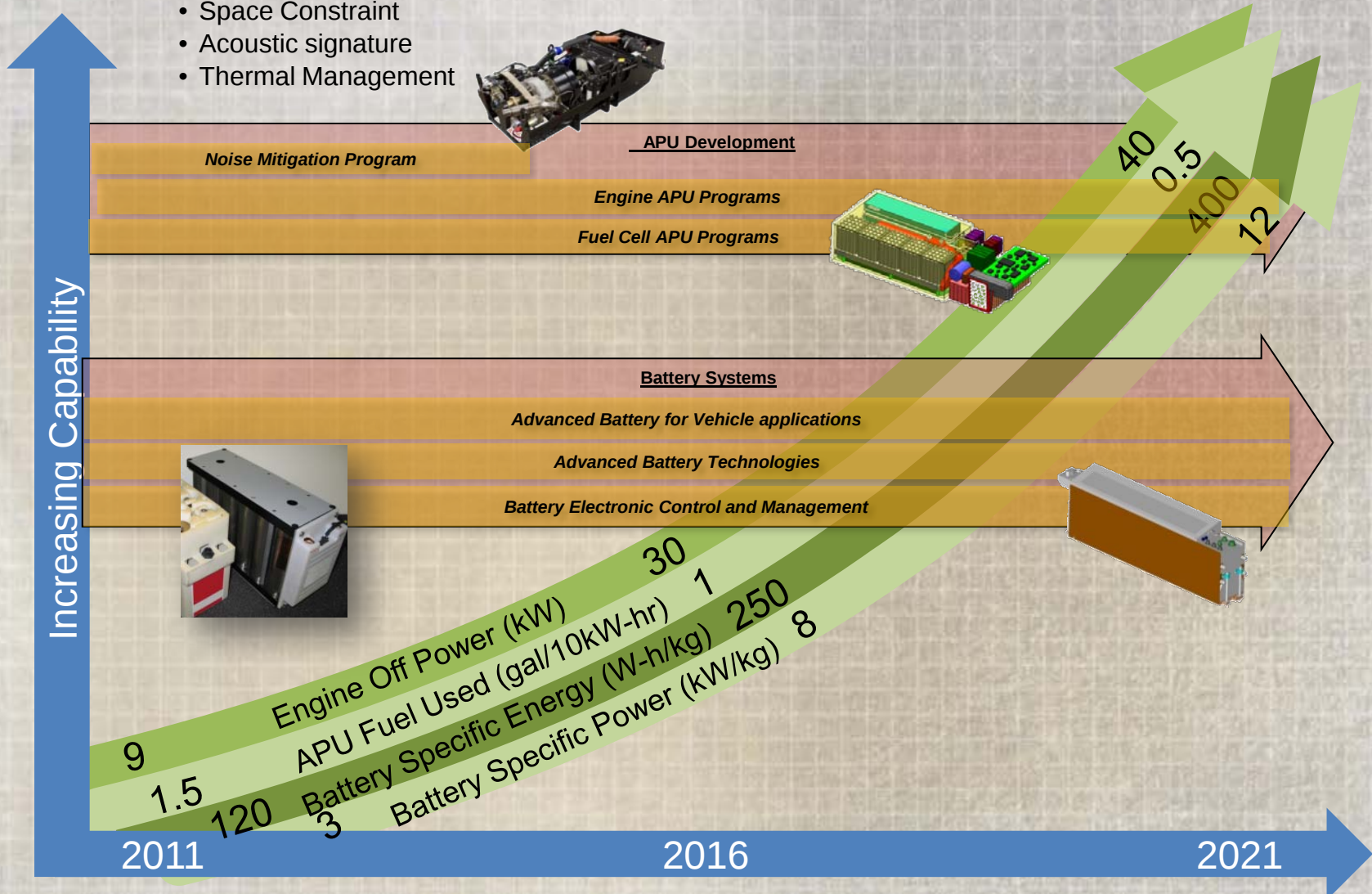
Challenges:

- Increasing demand for power
- Increasing weight for survivability
- Increasing thermal burden



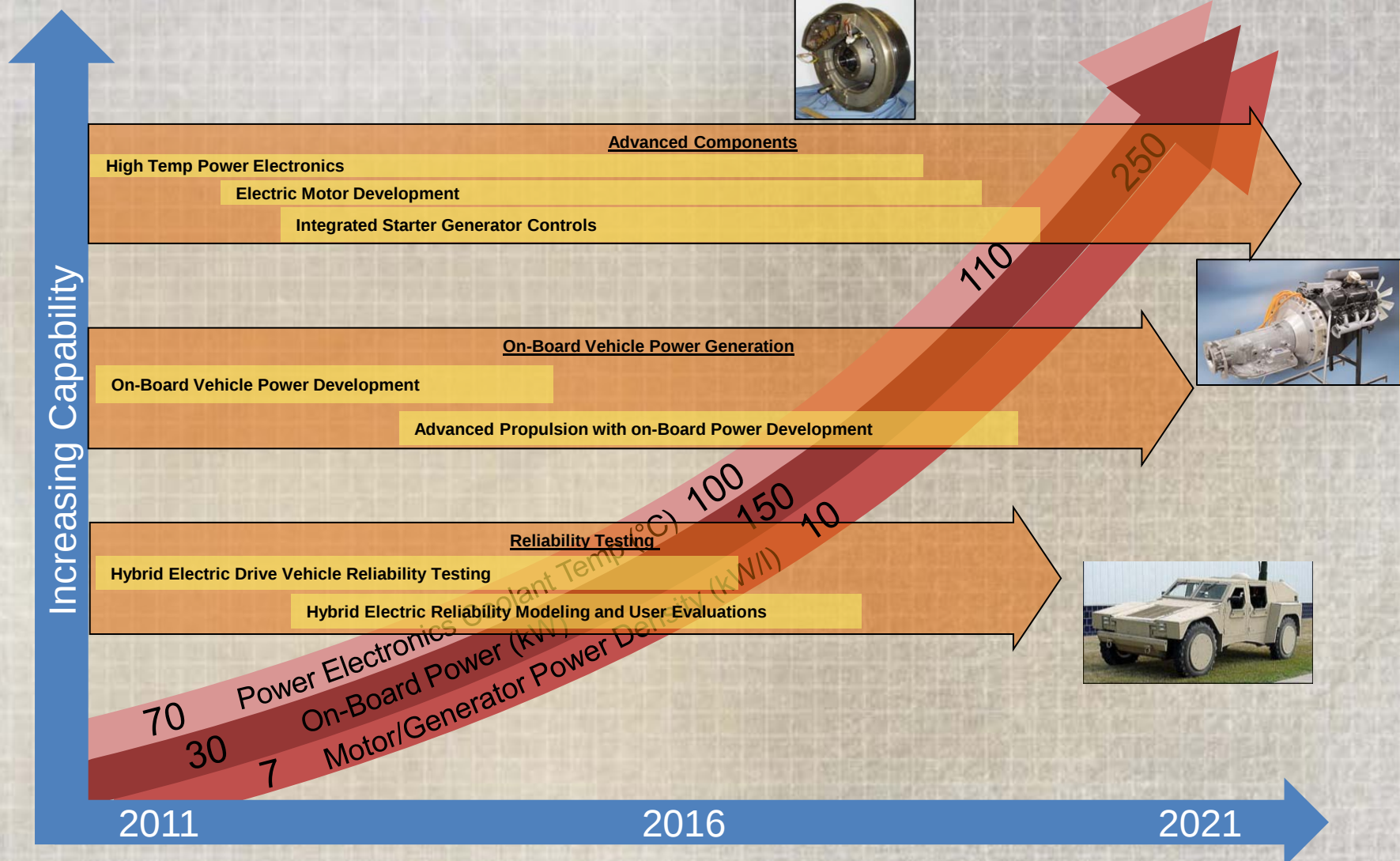
Challenges:

- Space Constraint
- Acoustic signature
- Thermal Management



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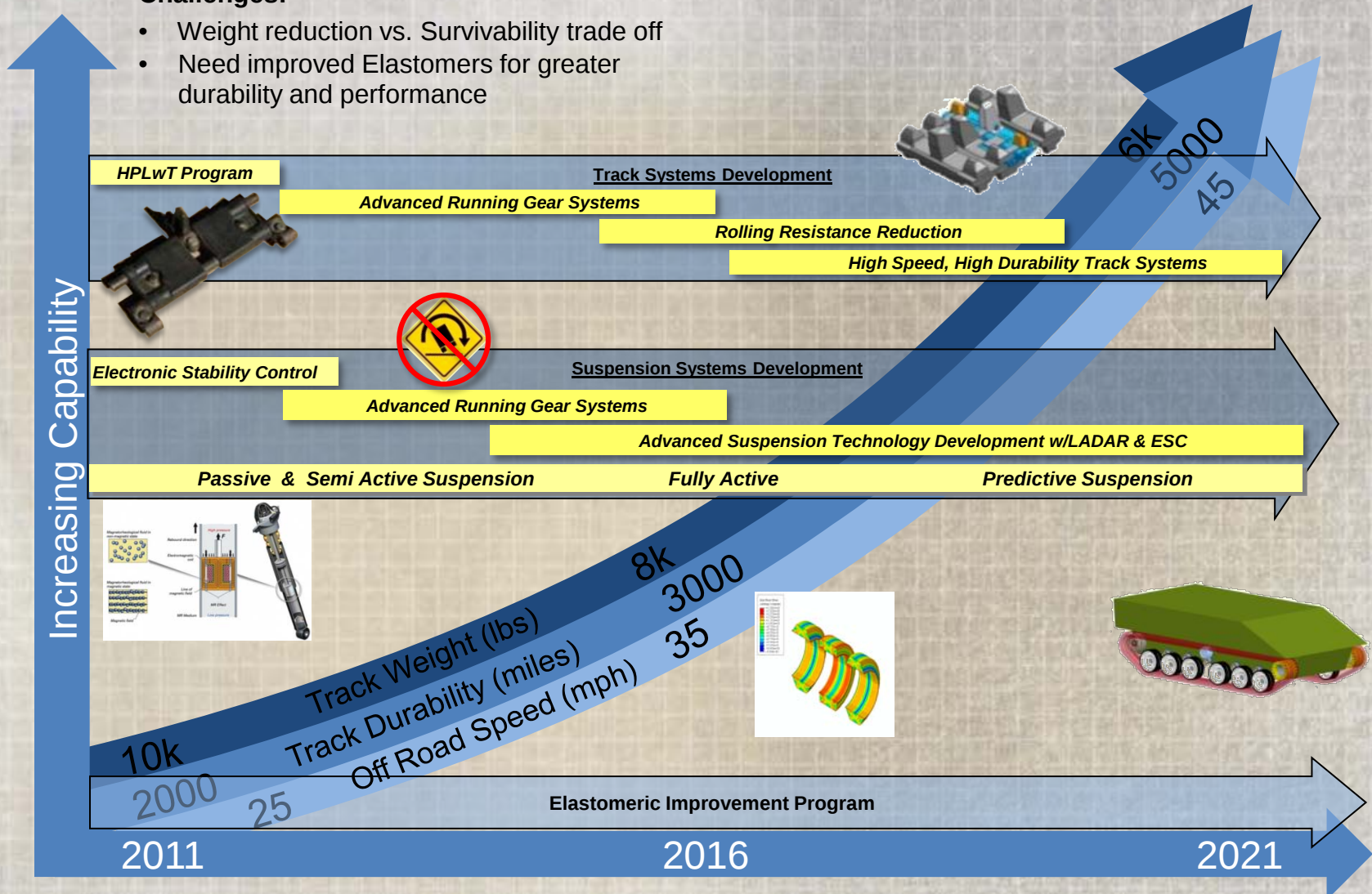
Challenges:



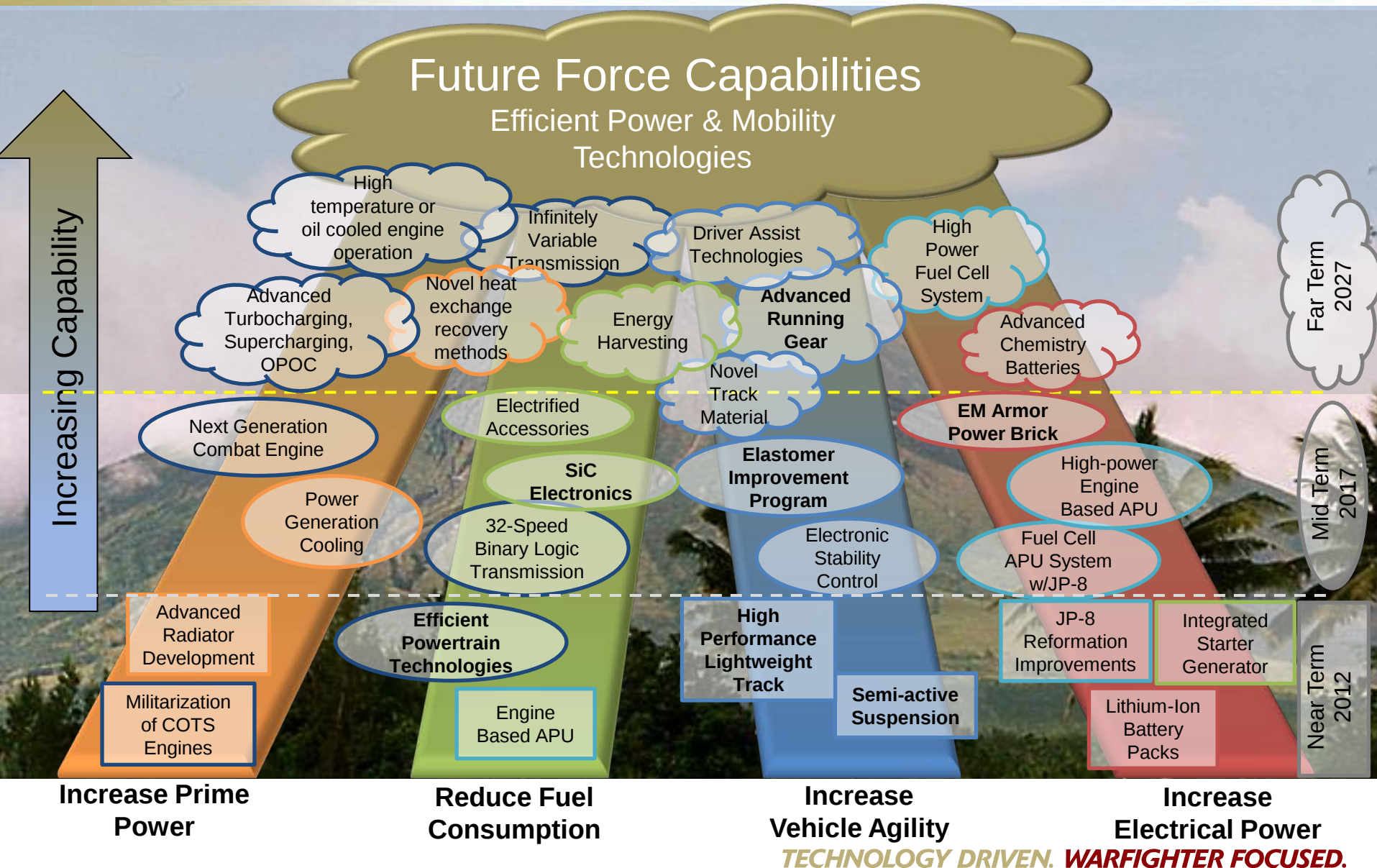
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Challenges:

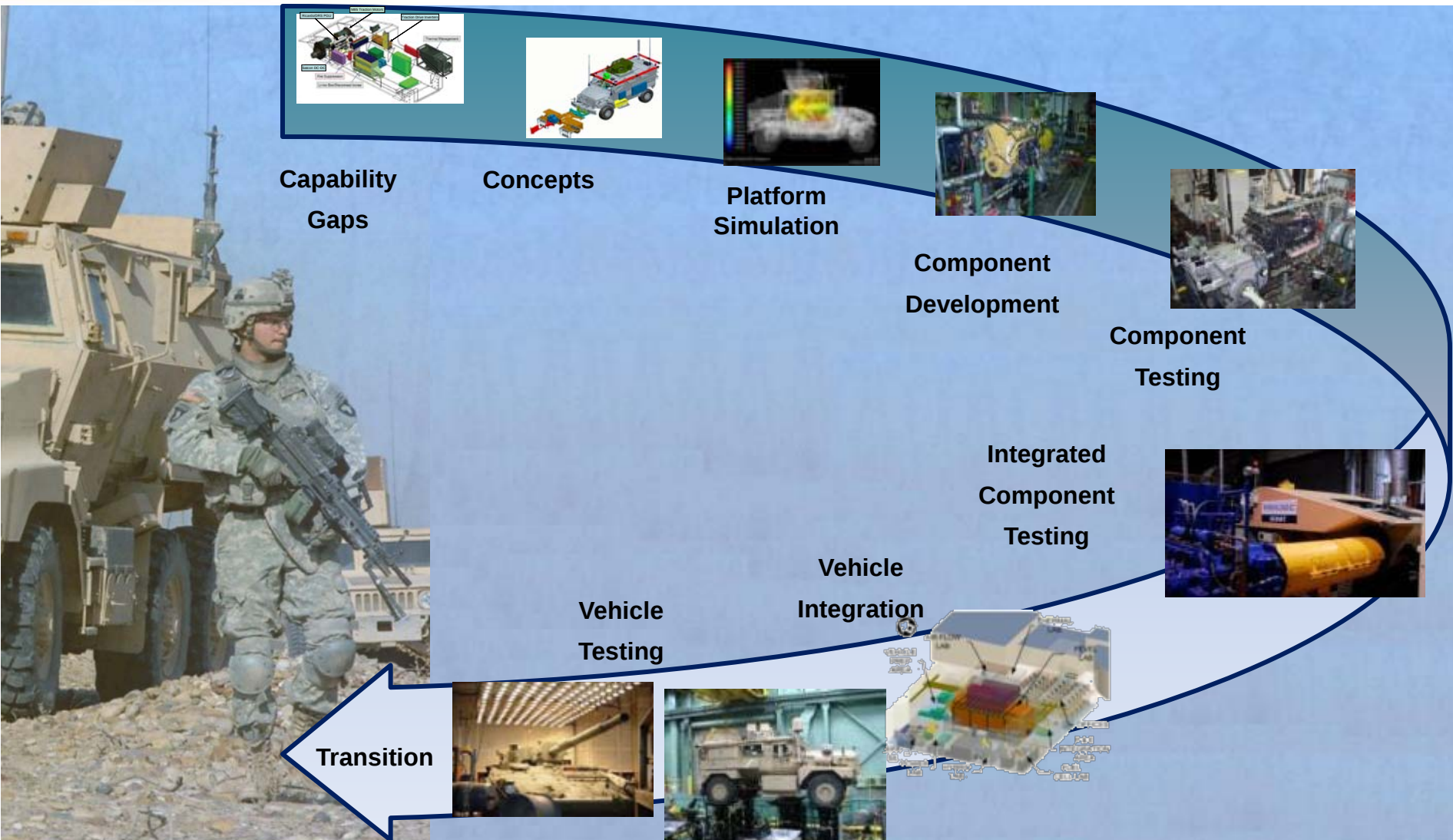
- Weight reduction vs. Survivability trade off
- Need improved Elastomers for greater durability and performance



Capability Based Technology Strategy



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Enabling Warfighter Capability Through Technology Development & Integration

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It's all about...Supporting the Warfighter



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Back Up Charts





T-154



T-158LL



T-157i
T-161



T-150



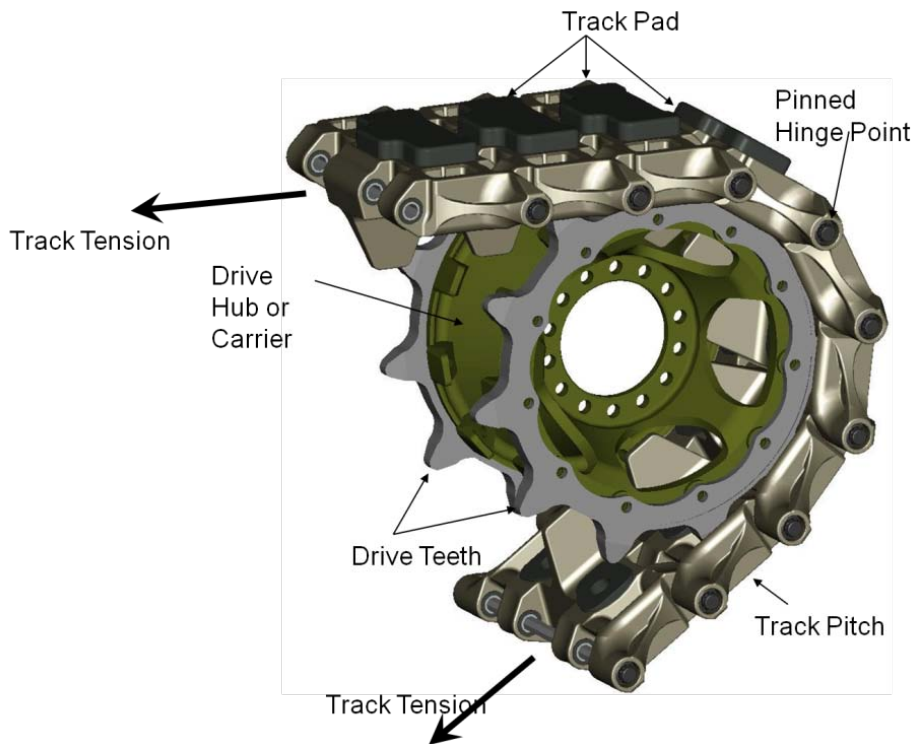
T-107 / T-160

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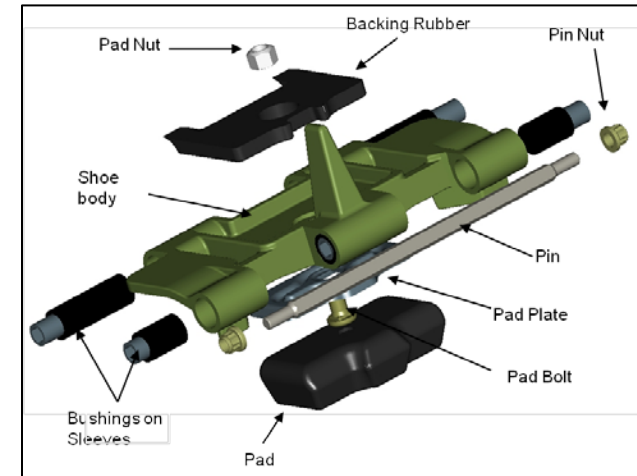
Background: Track Purpose & Anatomy

Purpose of a Track System

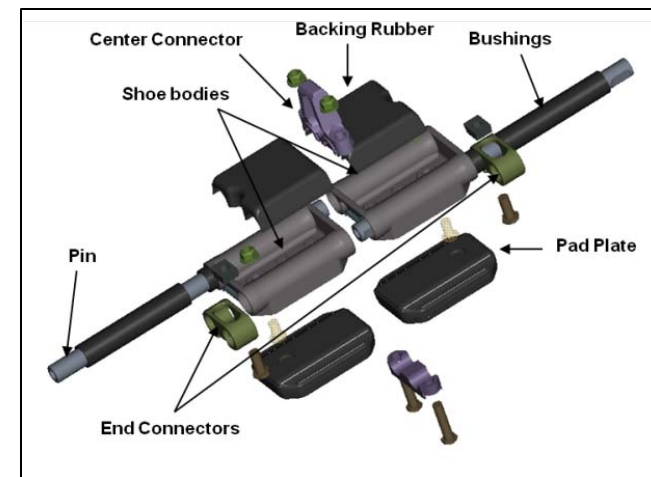
- Provides a transportable continuous, smooth road surface
- Supports vehicle load across large soft surfaces
- Enable large obstacle/gap crossing capability



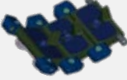
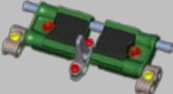
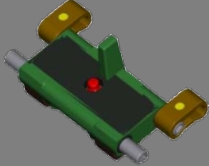
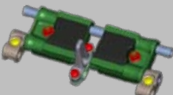
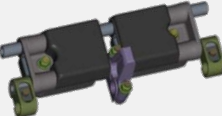
Single Pin Track

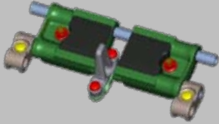


Double Pin Track



TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.

Class	Vehicle	Track	Max GVW (ton)	Weight (lb/ft)	Width (in)	Durability (Mi)
Light	M113 	T-130 (Replace by T150)	15	40	15	3000
		T-150 	15	45	15	10000
Medium	Bradley 	T-157i (Replace by T161)	32	68	21	2500
		T-161 	40	67	19.2	6000
	Paladin 	T-154 	32	62	15	5000
	PIM	T-161 	40	67	19.2	6000
	AMPV					
Heavy	M1 	T-158LL 	75	107	25	2100
	GCV					
	M88 	T-107 	75	102	28	1200
		XT-160 (In Qualification)	75	132	28	4000

Class	Vehicle	Track	Max GVW (ton)	Weight (lb/ft)	Width (in)	Durability (Mi)
Medium	Bradley		40	67	19.2	6000
	Paladin*					
	PIM					
	AMPV					
Heavy	M1		75	107	25	2100
	GCV					
	M88		75	132	28	4000

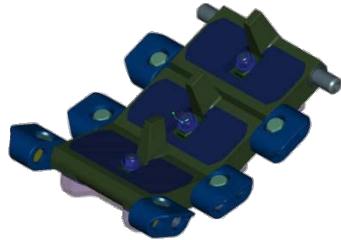
Three Track Systems Support Seven Vehicle Platforms

* Issues exist with increased track width

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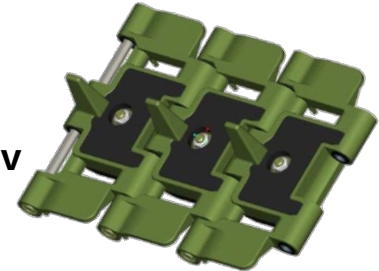
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T150 Double Pin



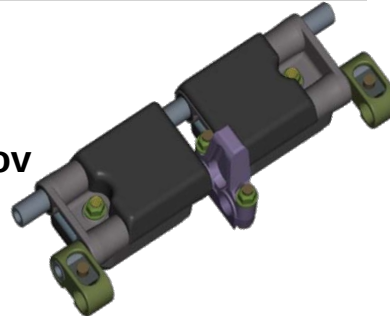
M113 fov
15.0" Wide
43.4 lbs/ft
15-22 ton fov
10,000 miles

T130 Single Pin



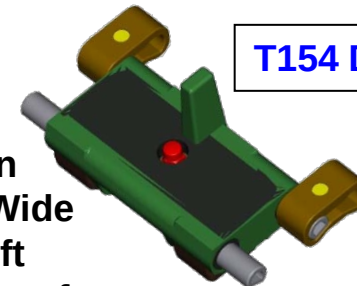
M113 fov
15.0" Wide
41.5 lbs/ft
15-22 ton fov
3000 miles

T158LL Double Pin



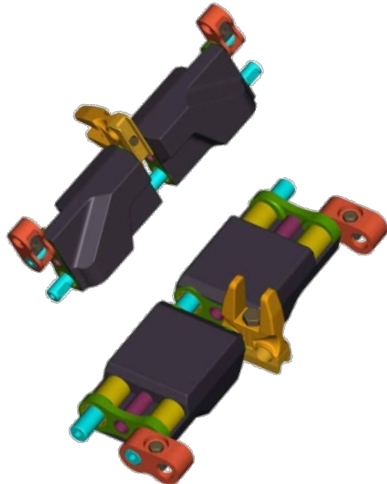
Abrams
25.0" Wide
110 lbs/ft
56-75 ton fov
2100 miles

T154 Double Pin



Paladin
15.0" Wide
58 lbs/ft
25-30 ton fov
5000 miles

T107 Double Pin



M88 fov
28.0" Wide
114 lbs/ft
58-70 ton fov
700-1100 miles

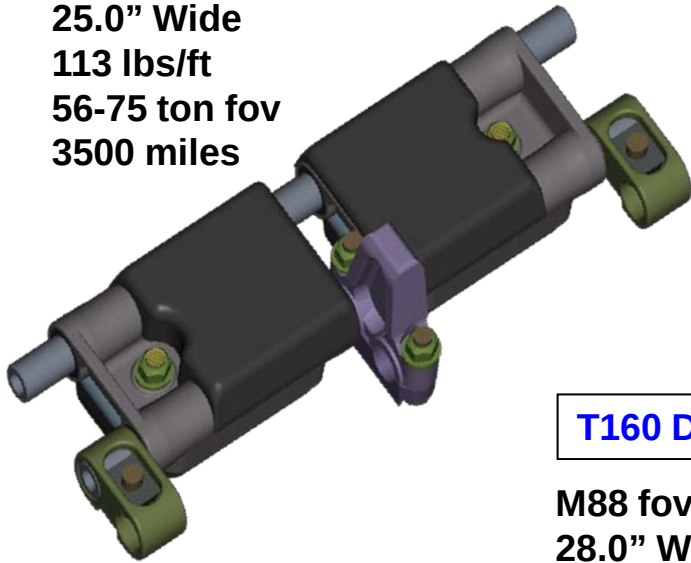
T157i Single Pin



Bradley fov
21.0" Wide
71.0 lbs/ft
25-35 ton fov
2400 miles

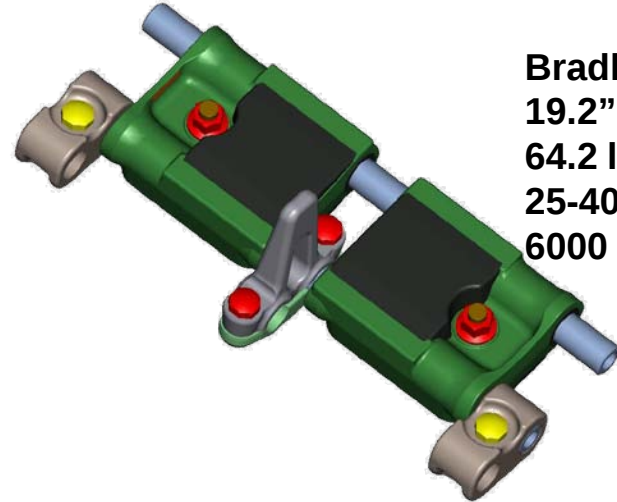
XT158IR Double Pin

Abrams
25.0" Wide
113 lbs/ft
56-75 ton fov
3500 miles



T161 Double Pin

Bradley fov
19.2" Wide
64.2 lbs/ft
25-40 ton fov
6000 miles



T160 Double Pin

M88 fov
28.0" Wide
135 lbs/ft
56-75 ton fov
3500 miles

