
U.S. ARMY
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Beyond 2025
– Insights and Possibilities for Future Technology Applications
TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.

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TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.

Beyond 2025 – Insights and Possibilities for Future Technology Applications

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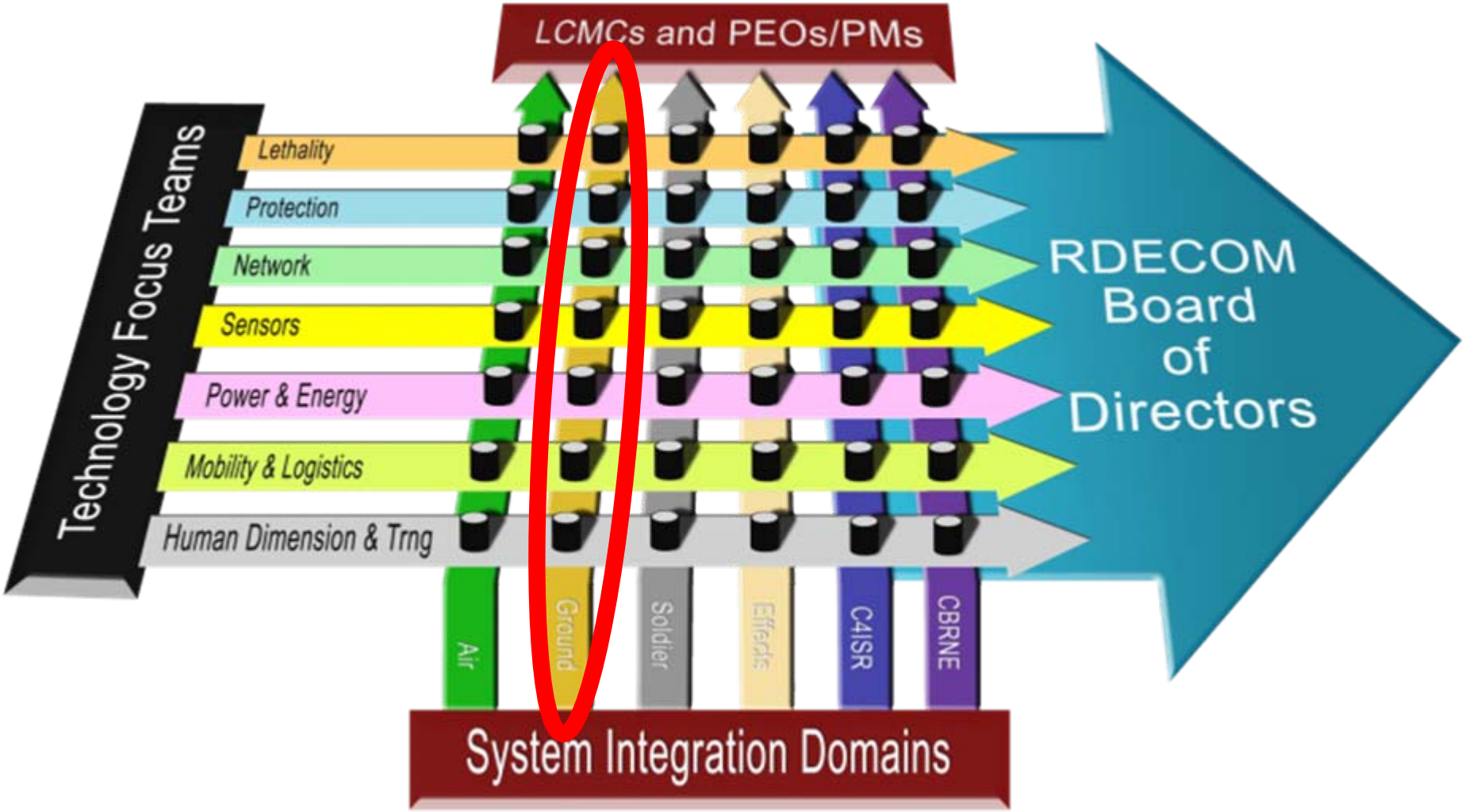
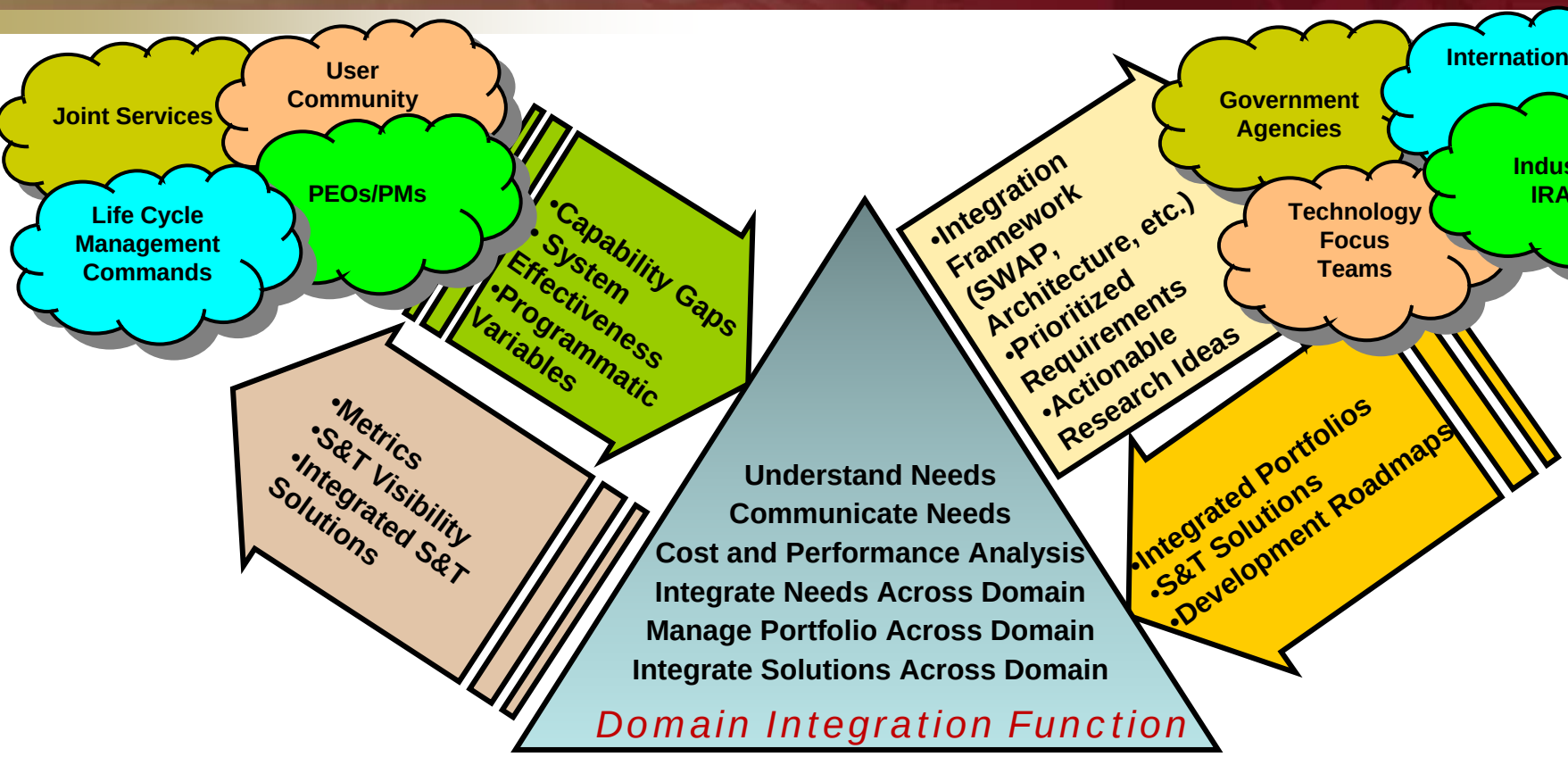
How Business is Done



Ground Systems Integration Domain Vision

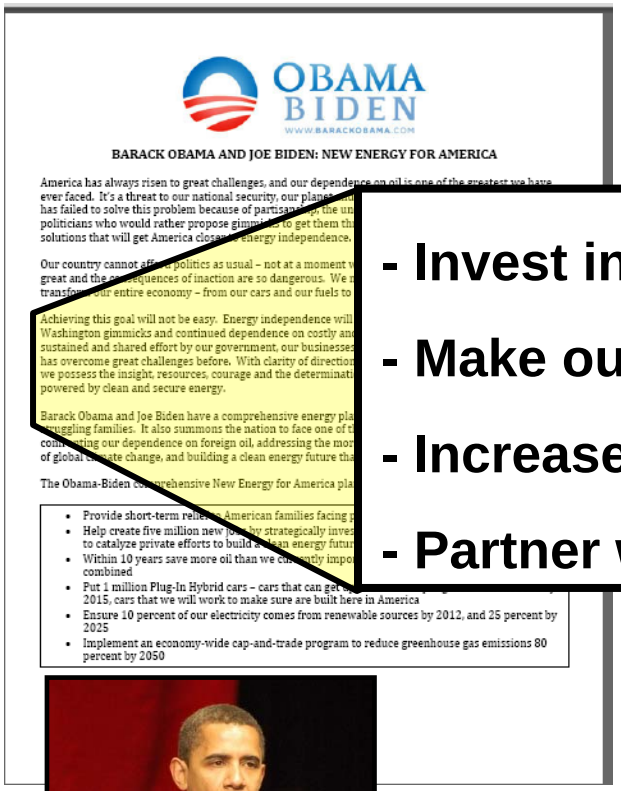


Tool Set Includes:

- •Systems Engineering/Integration
- •Concepting/Analysis
- •Collaborative Environment
- •Integration Labs
- •Engineers & Scientists
- •Modeling & Simulation

Systems Engineering Integrated with S&T

In Line with the Presidential Energy Strategy



OBAMA BIDEN
WWW.BARACKOBAMA.COM

BARACK OBAMA AND JOE BIDEN: NEW ENERGY FOR AMERICA

America has always risen to great challenges, and our dependence on oil is one of the greatest we have ever faced. It's a threat to our national security, our planet [illegible] has failed to solve this problem because of partisanship, the un[illegible] politicians who would rather propose gimmicks to get them th[illegible] solutions that will get America closer to energy independence,

Our country cannot afford politics as usual – not at a moment [illegible] great and the consequences of inaction are so dangerous. We [illegible] transform our entire economy – from our cars and our fuels to

Achieving this goal will not be easy. Energy independence will [illegible] Washington gimmicks and continued dependence on costly and [illegible] sustained and shared effort by our government, our businesses [illegible] has overcome great challenges before. With clarity of direction [illegible] we possess the insight, resources, courage and the determinati[illegible] powered by clean and secure energy.

Barack Obama and Joe Biden have a comprehensive energy pla[illegible] struggling families. It also summons the nation to face one of t[illegible] confronting our dependence on foreign oil, addressing the mor[illegible] of global climate change, and building a clean energy future tha[illegible]

The Obama-Biden Comprehensive New Energy for America pla[illegible]

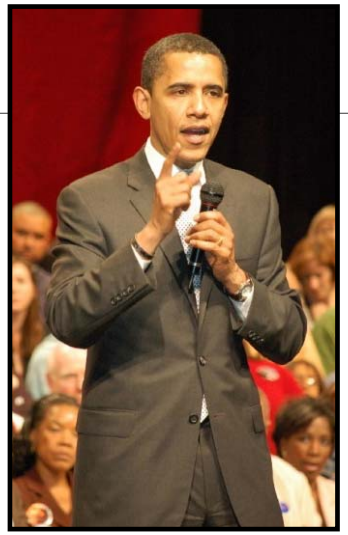
- Provide short-term relief to American families facing p[illegible]
- Help create five million new jobs by strategically inves[illegible] to catalyze private efforts to build a clean energy futur[illegible]
- Within 10 years save more oil than we currently impo[illegible] combined
- Put 1 million Plug-In Hybrid cars – cars that can get [illegible] 2015, cars that we will work to make sure are built here in America
- Ensure 10 percent of our electricity comes from renewable sources by 2012, and 25 percent by 2025
- Implement an economy-wide cap-and-trade program to reduce greenhouse gas emissions 80 percent by 2050

- Invest in our Secure Energy Future

- Make our Cars, Trucks and SUV's Fuel Efficient

- Increase Fuel Economy Standards

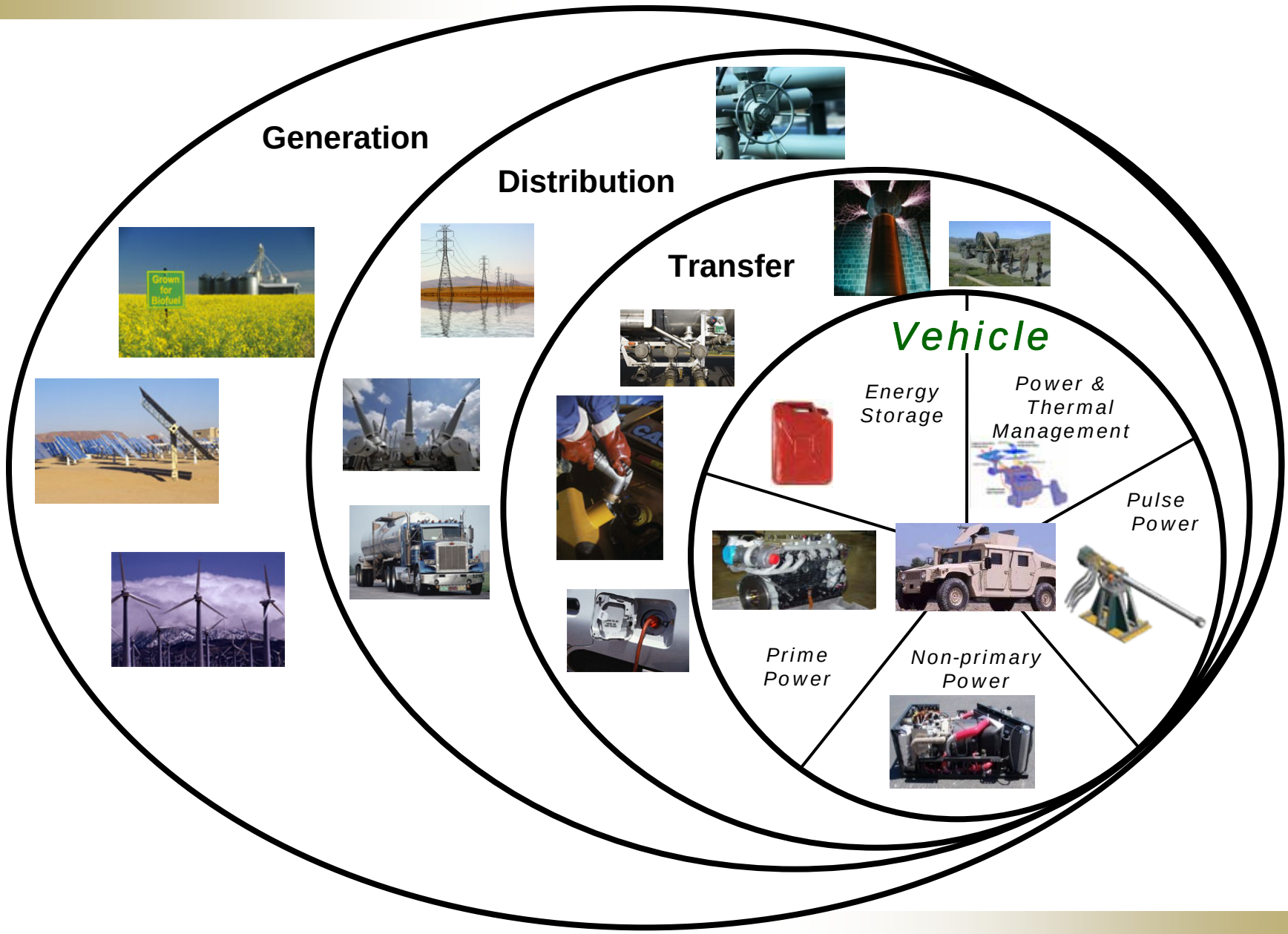
- Partner with Domestic Automakers



The state of the economy calls for action, bold and swift, and we will act -- not only to create new jobs, but to lay a new foundation for growth. We will **build the roads and bridges, the electric grids and digital lines that feed our commerce and bind us together**.
We will restore science to its rightful place.... **We will harness the sun and the winds and the soil to fuel our cars and run our factories**... All this we can do. And all this we will do.

President Barack Obama, Inaugural Address 20 January, 2009

TARDEC Energy Layers



Alternative Energy Initiatives

Alternative Fuels Program

Fuel Evaluations

- Chemical Composition
- Physical properties
- Fuel system impacts

System Evaluations

- Fuel-system interactions
- System performance and durability
- Fuel specification inputs
- Suitability of fuel for use in Army equipment

Engine Evaluations

- Fuel ignitability
- Fuel combustion
- Performance / durability

Alternative Fuel Vehicles & Infrastructure

SANGB Hydrogen Filling Station

Advanced Mobile Microgrid

Domestic Manufacturing Capability

Dual-Use Applications

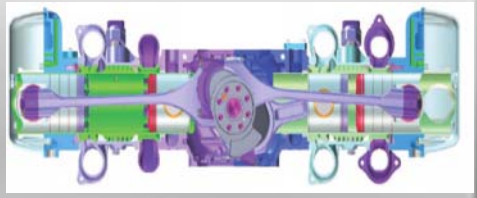
Advanced Automotive Batteries Enabler of Alternative Energy

Army Powertrain Technology Progression

1941 GMC CCKW Truck
Gasoline Engine 92 HP

1985 M998 HMMWV
Diesel Engine 150 HP

2008 HEMTT A4
Diesel Engine 400 HP



High Power OPOC Engine

Engine Technology

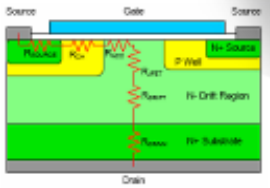
1943 T-23 Electric Drive
Medium Tank

2000 Hybrid Electric Demo

2007 FTTS Hybrid-Electric
Concept Demonstrator

Full Hybrid-Electric FCS

Electric and Hybrid Electric



Silicon Carbide Metal Oxide Semiconductor Field Effect Transistor (MOSFET)

Diamond Power Semiconductor

Future Enabling Technologies

3J/cc Millisecond Discharge Film Capacitor

Thermoelectric Energy Recovery Devices

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The Hub of Innovation & Integration

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