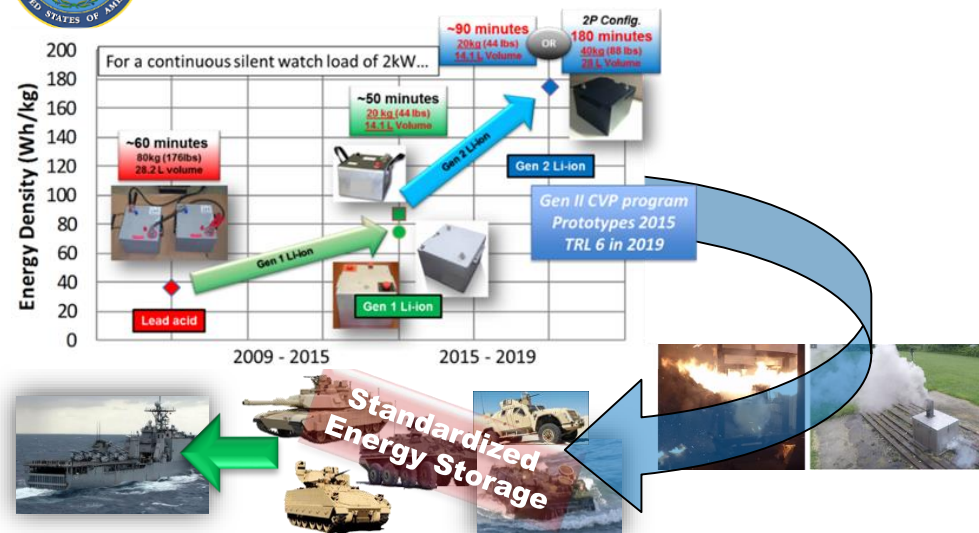




Li-ion 6T Commonality Advancement



Standardizing Li-ion 6T Battery Safety and Component Development for Combat and Tactical DOD Platforms

Technology / Product / Objective:

Technology: The 24V Li-ion 6T drop-in replacement battery is a critical technology which is ready to immediately enhance energy storage. The largest remaining hurdle to Li-ion 6T battery adoption by platforms currently using 6T is the passing of Navy SG-270 Concept of Operations (CONOPS) testing to allow transport of vehicles using those batteries on Naval vessels.

Product: 24-V Li-ion 6T drop-in replacement batteries meeting all of the requirements of MIL-PRF-32565, fully tested to SG-270.

Objective: Develop CONOPS and standardized SG-270 test procedures and requirements to enable widespread implementation of the Li-ion 6T battery across DOD platforms. Additionally, ATPD-2404 testing required for specific platform transitions will be conducted.

The So What:

- Compatible with any DOD platform using 6T form factor PbA battery
- Reduced Volume (single Li-ion battery replaces two Lead-Acid batteries)
- Up to 12X increase in silent watch duration.
- Reduced Logistics & Sustainment Cost (8-18X improvement in cycle life)
- Faster charging capabilities: Decreases recharge time from ~10hr to <1hr
- Increased performance at temperature extremes (includes integral heaters)

Key Participants:

- **Project Lead Agency:** CCDC Ground Vehicle Systems Center (GVSC).
- **Gov't Contributors:** NSWC Carderock, NSWC Crane, WSMR
- **Transition Partners:** THAAD, JLTV, Stryker, Bradley, Abrams, NSWC
- **Commercial Partners:** Saft, Toshiba, BrenTronics, Navitas
- **Other Partners:** AFRL / NSWC CD (Battery Standardization BDSC)

Key Deliverables:

- **Report** on platform Li-ion 6T battery usage (quantity, configuration, etc.) to provide input for anticipated battery enclosure approaches for SG270 evaluation.
- **Test fixtures** simulating real vehicle battery installations for Li-ion 6T evaluations
- **Report** on the Heat-Release Rate (HRR) and gas analysis of a Li-ion 6T
- **Certification Plan** for the 6T on a variety of platforms in 2-, 4-, and 6-pack configurations. Report on the test results from testing recommended by the Technical Warrant Holders and Ship Design Managers as identified in the Certification Plan.
- **Propagation model** of the 6T in two and four 6T configurations
- **Report** on component and subcomponent testing of 6Ts against additional platform-specific requirements from ATPD-2404. Report on electronics designs.

Funding (\$M)	FY19	FY20*	FY21*	FY22*	Total
OECIF	0.875	0.765	-	-	1.640
GVSC/PM Funding	4.650	1.60	1.10	1.20	8.550

*Out Year Funding is contingent on the availability of funds within the year of execution

Milestones Leading to Fielded Capability

- FY20 – FY21 Li-ion Usage/CONOPS Study
- FY20 – FY21 Develop Common Test Fixtures
- FY20 – FY21 Propagation Modeling
- FY20 – FY21 ATPD-2404 Platform-Specific Testing
- FY20 – FY21 Li-6T Certification Pathway

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