



TECHNOLOGY DRIVEN. WARFIGHTER FOCUSED.

Fuel Cells Advanced Drivetrain

Steven Eick

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US Army
TARDEC
and
General
Motors



Volt



Volt Mule



Early Release Volt

FCV
Gen4



4010 – Early Adopter
Engineering Model
(GEN Nadeau)



Gen4 Equinox FCV

FCV
Gen3



HydroGen3 – CH2



HydroGen3 – LH2

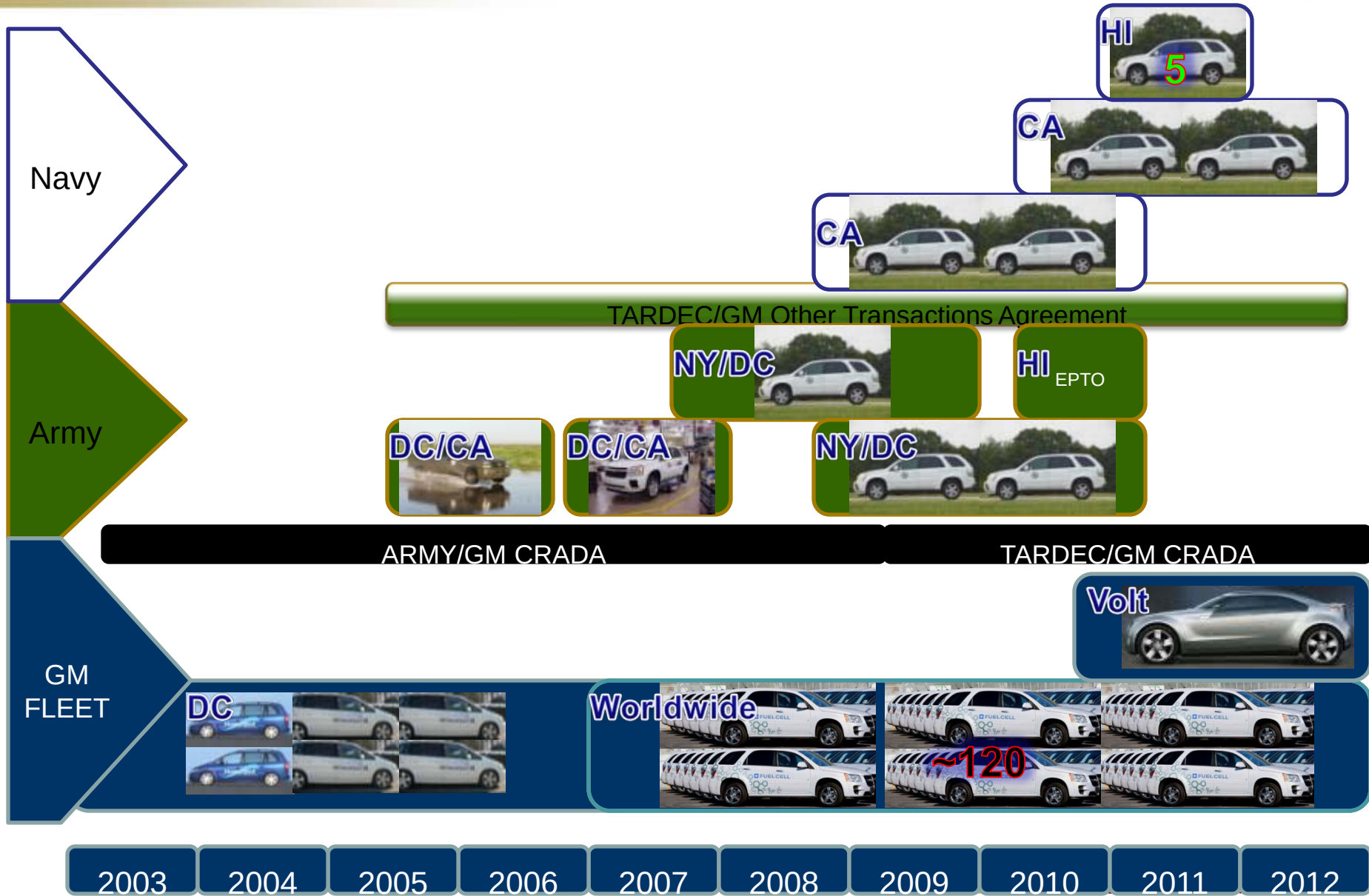


GM T800 Silverado
Military specific
system upscale (4WD)

HyWire



HyWire Demo GEN Kern (ret.)



- **Operation**

- Non-Tactical Administrative Use (over 55,000mi)
- Numerous and regular technology demonstrations, Ride-and-Drive events, and community outreach and education events since 2005

- **Maintenance**

- Full participation in Repair, Maintenance and Fueling
- Collaborated on Emergency Responder Training

- **Pending Operation**

- FCV with EPTO to interconnect with TARDEC Microgrid





Advanced Drivetrain Maintenance Facilities & Infrastructure



Location	Timeline	Maintenance	Infrastructure
Fort Belvoir, VA	2003-ongoing	Full FCV and Volt Maintenance	350,700bar LH ₂ (Decommissioned) Volt Charging(pending)
US Military Academy, West Point, NY	2008-2011	Light Maintenance & Vehicle Inspection	350bar
Camp Pendleton, CA	2005-ongoing	Light Maintenance & Vehicle Inspection	350bar
Fort Safer, HI	2010-ongoing	None	350bar (pending)
Hawaii Hydrogen Initiative (H2I)	2010-ongoing	GM Central Full FCV Maintenance	350,700bar (pending)

- **CRADA /OT Agreement are both active contracts**
 - Over \$12m funding on contract (with pending mod)
- **14 Fuel Cell Vehicles Leased by Army**
 - 5 Army (2 active, 3 decommissioned)
 - 9 Navy (4 active, 5 pending)
- **Electric Power Take-off interface under construction**
 - Microgrid interface planned in Hawaii
- **Ongoing Advanced Drivetrain Maintenance and Operation Training**
- **Cooperative program development/expansion**
 - Operational Expansion (West Point and Hawaii)
 - EPTO
 - Volt infrastructure and maintenance support at Ft Belvoir