Next Generation Combat Vehicle Cross Functional Team RCV Program Update

21 May 2020

Agenda

- Program Overview
- High Level Characteristic Overview
- Anticipated GFE
- Desired Autonomy Levels
- Draft Acquisition Strategy

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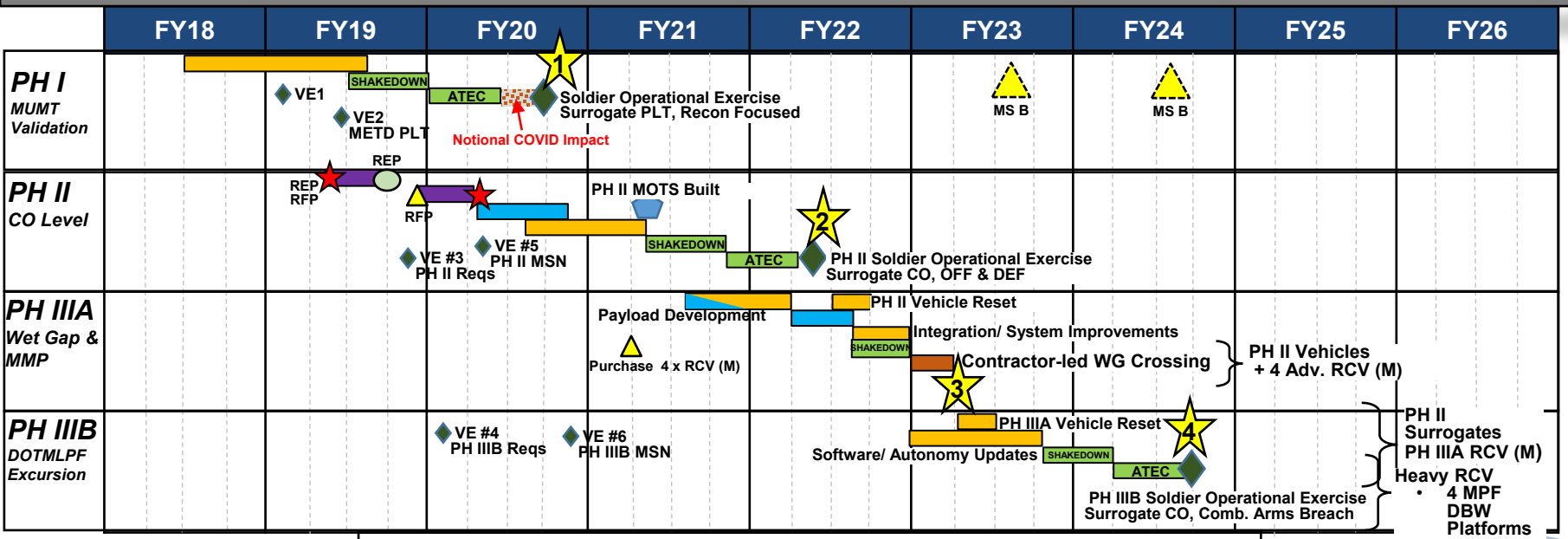
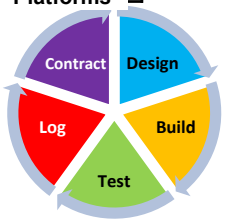
NGCV Cross Functional Team

RCV/MET-D Experiment Schedule



Decision Points

1	Does MUM-T, in its current state increase a unit's effectiveness? If so, proceed as planned.
2	Can the Army begin a PoR in FY23 given the current state of technology?
3	Are amphibious capabilities a reasonable threshold requirement for the PoR?
4	1) If the Army has yet to do so, can the Army begin a PoR for RCV (L) and RCV (M) after PH IIIB? 2) Does the RCV (H) require a clean sheet design or is a DBW MPF adequate?



Legend

- Soldier Touch Point
- Contract Award
- Acquisition Event
- Industry Demonstration
- Platform Deliveries

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Conceptual RCV (L) and RCV (M) Characteristics

	RCV (L)	RCV (M)
Mobility	**T**: Maintain pace w/ organic formation; silent drive; amphibious w/ a kit **O**: Silent drive X>10 Km; amphibious w/o kits	**T**: Maintain pace w/ organic formation; silent drive for 5Km @ 10 Kph; amphibious w/ a kit **O**: Silent drive X>10 Km; amphibious w/o kits
Transportability	**T**: One RCV (L) per CH47 Sling Load; air droppable **O**: Base chassis transportable by UH60 for 10 NM	**T:** One RCV (M) per C130H for 1800 NM **O:** CH47 sling load; air droppable
Lethality	**T**: Defeats troops and trucks, 1 x ATGM **O**: Multiple ATGMs w/ autonomous reload; loitering munitions	**T**: Defeats medium armor threats at 2+Km; Two ATGMs **O:** IWS defeats troops; Four ATGMs w/ modular capability for multiple missile types (AP/ ADA).
Sensor Package	**T**: TeUAS w/ modular payloads; support AiDTR; 360 SA **O**: TeUAS (become untethered); sensors better than 3G FLIR; color night vision; marsupial robot	**T**: TeUAS w/ modular payloads; support AiDTR; 360 SA **O**: TeUAS (become untethered); sensors better than 3G FLIR; color night vision; marsupial robot
Survivability	**T**: Protected sensors, integrated CBR defense, recover from cyber attacks/EMS (T=O) **O**: Med ballistic protection for sensors	**T:** Protect sensors and lethality systems; recover from cyber attacks/EMS (T=O) **O:** Med ballistic protection w/ modular armor capability
Modularity	**T**: Remove lethality system and transition to any MMP; IOP 3.0 compliant (T=O); VICTORY 1.8 compliant (T=O); MOSA compliant (T=O) **O**: Remove weapon system in less than 1 hour; transition to any MMP in less than 1.5 hrs	**T**: Remove lethality system and transition to any MMP ; IOP 3.0 compliant (T=O); VICTORY 1.8 compliant (T=O); MOSA compliant (T=O) **O**: Remove system in less than 3 hour; transition to any MMP in less than 1.5 hrs
Silent Watch	**T**: Conduct silent watch with all critical systems powered; Start engine w/o cycling power (T=O) **O**: 24 hours	**T**: Conduct silent watch with all critical systems powered; Start engine w/o cycling power (T=O) **O**: 36 hours
Signature Management	**T**: Minimized thermal and electronic signature; heat emitting signatures will be located in the rear of the vehicle and not observable from the air (T=O) **O**: Thermal and electronic signature not visible within 100m; secondary “skin” camouflage	**T**: Minimized thermal and electronic signature; heat emitting signatures will be located in the rear of the vehicle and not observable from the air (T=O) **O**: Thermal and electronic signature not visible within 100m; secondary “skin” camouflage

Autonomous Capabilities

Augmented Teleoperation			Semi-Autonomous
Project Origin Spring 2020	***MUMT PH I MAR-APR20***	***MUMT PH II Q2FY22***	***MUMT PH IIIB Q3FY24***
•Remoted sensors/RWS to RCV controller	•Remoted sensors/RWS to RCV controller	•Limited ATR OTM •Automated Threat Detection	•ATR OTM in Limited Vis •M42 demo •Automated Threat Detection
Shoot/ Survive			
•Teleop w/ OD (static) •Way point navigation / OD (static) /OA •Point and Go Exploratory Planner / OD (static) /OA	•Teleop w/ OD (static) •Way point navigation / OD (static) /OA •Point and Go Exploratory Planner / OD (static) /OA	•Teleop w/ Obstacle detection •Way point navigation (Higher Speed) / OD/OA •Point and Go Exploratory Planner (Lower Speed) / OD/OA	•Way point navigation (Higher Speed) / OD/OA •Point and Go Exploratory Planner (Lower Speed) / OD/OA •Formation Control (L/F, wedge, etc) •Limited tactical behaviors •Dynamic planner switching
Move			
•1Km automated mesh network	•1-2Km automated mesh network	•2km automated mesh network •Automated frequency hopping if jammed	•X > 2km mesh network •Lost comms maneuver behavior options (return, rally point, continue) •Automated PACE plan
Communicate			
	•CL V status update to OCU	•CL III & V status update to OCU •Vehicle health report	•Automated PMCS •CL III & V status update to OCU •Vehicle health report
Sustain			

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Government Furnished Equipment

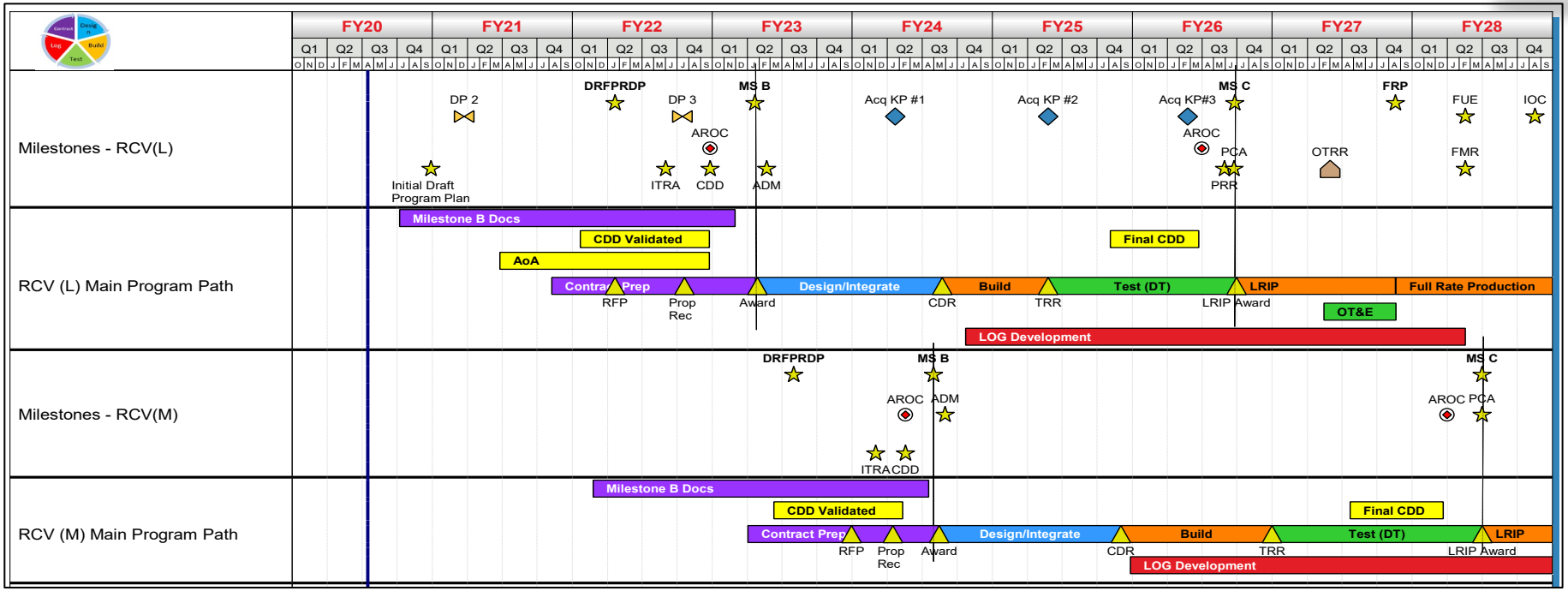
Anticipated GFE

- Autonomy Software
- Radios
- Warfighter Machine Interface Software
- AiDT/R
- Guns and missiles (industry provides turrets)

Potential GFE

- TeUAS
- A-PNT
- Hostile Fire Detection

Acquisition Strategy



- Follow DoDI 5000.02 – ACAT I program
- Contract strategy to use integration vendor – integrate Control Station, Network, Platform, Software, and Payloads
- Separate *competitive* subcontract for RCV vehicle platforms – RCV(L) and RCV(M)
- Government furnished robotics software, radios, warfighter-machine interface software, and some payloads integrated through Modular Open Systems Approach (MOSA) based architecture
- MS B entry dependent upon:
  - Technology Readiness Level (TRL) 6 for all critical technology elements
  - DOTMLPF-P analysis complete and approved at appropriate levels by appropriate authorities

•RCV(L) MS B in FY23
•RCV(L) FUE in FY28
•RCV(M) MS B in FY24
•RCV(M) FUE in FY30

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Questions?

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