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Infantry Brigade Combat Team (IBCT) Mobility, Reconnaissance, and Firepower Programs

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Summary

Infantry Brigade Combat Teams (IBCTs) constitute the Army's "light" ground forces and are an important part of the nation's ability to project forces overseas. The wars in Iraq and Afghanistan, as well as current thinking by Army leadership as to where and how future conflicts would be fought, suggest IBCTs are limited operationally by their lack of assigned transport and reconnaissance vehicles as well as firepower against hardened targets and armored vehicles.

There are three types of IBCTs: Light, Airborne, and Air Assault. Light IBCTs are primarily foot-mobile forces. Light IBCTs can move by foot, by vehicle, or by air (either air landed or by helicopter). Airborne IBCTs are specially trained and equipped to conduct parachute assaults. Air Assault IBCTs are specially trained and equipped to conduct helicopter assaults.

Currently, the Army contends IBCTs face a number of limitations:

- The IBCT lacks the ability to decisively close with and destroy the enemy under restricted terrains such as mountains, littorals, jungles, subterranean areas, and urban areas to minimize excessive physical burdens imposed by organic material systems.
- The IBCT lacks the ability to maneuver and survive in close combat against hardened enemy fortifications, light armored vehicles, and dismounted personnel.
- IBCTs lack the support of a mobile protected firepower capability to apply immediate, lethal, long-range direct fires in the engagement of hardened enemy bunkers, light armored vehicles, and dismounted personnel in machine gun and sniper positions; with all-terrain mobility and scalable armor protection; capable of conducting operations in all environments.

To address these limitations, the Army is undertaking three programs: the Ground Mobility Vehicle (GMV)/Infantry Squad Vehicle (ISV), formerly known as the Ultra-Light Combat Vehicle (ULCV); the Light Reconnaissance Vehicle (LRV); and the Mobile Protected Firepower (MPF) programs. These programs would be based on vehicles that are commercially available. This approach serves to reduce costs and the time it takes to field combat vehicles.

The GMV/ISV is intended to provide mobility to the rifle squad and company. The LRV would provide protection to the moving force by means of scouts, sensors, and a variety of medium-caliber weapons, and the MPF would offer the IBCT the capability to engage and destroy fortifications, bunkers, buildings, and light-to-medium armored vehicles more effectively.

The FY2020 Army GMV budget request for $37 million in procurement funding supports the procurement of 69 GMVs for the U.S. Army Special Operations Command and 15 ISVs for the Army. The FY2020 GMV Research, Development, Test & Evaluation (RDT&E) request is for $3 million to support operational testing. The Army did not submit a FY2020 budget request for the LRV program. The FY2020 Army MPF budget request for $310.152 million in RDT&E funding supports the continuation of rapid prototyping efforts and the completion of 24 prototypes.

Potential issues for Congress include the future of the LRV effort; Security Force Assistance Brigades (SFABs) and GMV/ISV, LRV, and MPF requirements; and GMV/ISV, LRV, and MPF fielding plans.

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Why Is This Issue Important to Congress?

Infantry Brigade Combat Teams (IBCTs) constitute the Army's "light" ground forces and are an important part of the nation's ability to rapidly project forces overseas. The wars in Iraq and Afghanistan, as well as current thinking as to where and how future conflicts would be fought, suggest IBCTs are limited operationally by their lack of assigned transport and reconnaissance vehicles as well as firepower against hardened targets and armored vehicles.

To address these limitations, the Army is undertaking three programs: the Ground Mobility Vehicle (GMV)/Infantry Squad Vehicle (ISV), formerly known as the Ultra-Light Combat Vehicle (ULCV); the Light Reconnaissance Vehicle (LRV); and the Mobile Protected Firepower (MPF) programs. These programs would be based on vehicles that are commercially available. This is in order to reduce costs and the time it takes to field combat vehicles associated with traditional developmental efforts.

Congress may be concerned with the effectiveness of ground forces over the full spectrum of military operations. A number of past unsuccessful Army acquisition programs have served to heighten congressional oversight of Army programs, including non-developmental programs such as those currently being proposed for IBCTs. In addition to these primary concerns, how these new programs affect deployability and sustainability of IBCTs as well as affordability could be potential oversight issues for Congress.

Background

Brigade Combat Teams (BCTs) are the basic combined-arms formations of the Army. They are permanent, stand-alone, self-sufficient, and standardized tactical forces consisting of between 3,900 to 4,100 soldiers.[1] There are three types of BCTs: Armored Brigade Combat Teams (ABCTs); Stryker Brigade Combat Teams (SBCTs); and Infantry Brigade Combat Teams (IBCTs). BCTs are found both in the Active Component and the U.S. Army National Guard (USARNG).

In February 2017 the Army announced it would establish six Security Force Assistance Brigades (SFABs)—five in the Active Component and one in the Army National Guard (ARNG).[2] SFABs are to be capable of conducting security force assistance (SFA)[3] operations at the tactical (brigade and below) level. While not combat brigades per se, the Army plans for SFABs to be expanded, if the need arises, into fully operational ABCTs or IBCTs capable of conducting major combat operations.

[1] Association of the United States Army (AUSA), Profile of the U.S. Army, 2016, p. 24.

[2] U.S. Army Public Affairs, "Army Creates Security Force Assistance Brigade and Military Advisor Training Academy at Fort Benning," February 16, 2017.

[3] Security Force Assistance (SFA) is defined by the Department of Defense as unified action to generate, employ, and sustain local, host nation or regional security forces in support of a legitimate authority. By definition, "security forces include not only military forces, but also police, border forces, and other paramilitary organizations, as well as other local and regional forces." SFA involves organizing, training, equipping, rebuilding, and advising foreign security forces (FSF).

Types of IBCTs

Light IBCTs

Light IBCTs are primarily foot-mobile forces. Light IBCTs can move by foot, vehicle, or air (either air landed or by helicopter). While IBCTs have light- and medium-wheeled vehicles for transport, there are not enough vehicles to transport all or even a significant portion of the IBCT's infantry assets in a single movement.

Airborne IBCTs

Airborne IBCTs are specially trained and equipped to conduct parachute assaults. They are equipped with limited vehicular assets, and once they have conducted a parachute assault, they move by foot, vehicle, or helicopter, just like Light IBCTs.

Air Assault IBCTs

Air Assault IBCTs are specially trained and equipped to conduct helicopter assaults. What sets them apart from Light and Airborne IBCTs (which can also conduct helicopter assaults) is that they receive additional specialized training; the division to which these BCTs are assigned—the 101st Airborne Division—has the primary mission and organic helicopter assets to conduct large-scale helicopter assaults.

How IBCTs Are Employed[4]

The Army's Field Manual on Brigade Combat Teams describes how IBCTs are employed as follows:

> The role of the IBCT is to close with the enemy using fire and movement to destroy or capture enemy forces, or to repel enemy attacks by fire, close combat, and counterattack. Fire and movement is the concept of applying fires from all sources to suppress, neutralize, or destroy the enemy, and the tactical movement of combat forces in relation to the enemy (as components of maneuver applicable at all echelons). At the squad level, fire and movement entails a team placing suppressive fire on the enemy as another team moves against or around the enemy.
>
> The IBCT performs complementary missions to SBCTs and ABCTs. IBCT complementary missions include control of land areas, populations, and resources. The IBCT optimizes for the offense against conventional, hybrid, and irregular threats in severely restrictive terrain. The IBCT performs missions such as reducing fortified areas, infiltrating and seizing objectives in the enemy's rear, eliminating enemy force remnants in restricted terrain, securing key facilities and activities, and conducting stability in the wake of maneuvering forces.
>
> IBCTs easily configure for area defense and as the fixing force component of a mobile defense. The IBCT's lack of heavy combat vehicles reduces its logistic requirements. Not having heavy combat vehicles gives higher commanders greater flexibility when adapting various transportation modes to move or maneuver the IBCT.

[4] Information in the section is taken directly from Army Field Manual (FM) 3-96, Brigade Combat Team, October 2015, pp. 1-2.

Operational Environment

Chief of Staff of the Army General Mark A. Milley characterizes the operational environment confronting the Army as follows:

> I believe we are on the cusp of a fundamental change in the character of war. Technology, geopolitics and demographics are rapidly changing societies, economies, and the tools of warfare. They are also producing changes in why, how and where wars are fought—and who will fight them. The significantly increased speed and global reach of information (and misinformation) likewise will have unprecedented effects on forces and how they fight.
>
> For example, the proliferation of effective long-range radars, air defense systems, long-range precision weapons, electronic warfare, and cyber capabilities enables adversary states to threaten our partners and allies. Even if we do not fight the producers of these sophisticated weapons, warfare will become more lethal as they export this advanced equipment to their surrogates or customers. Crises involving such adversaries will unfold rapidly, compressing decision cycles and heightening the risks of miscalculation or escalation.
>
> Conflict will place a premium on speed of recognition, decision, assembly and action. Ambiguous actors, intense information wars and cutting-edge technologies will further confuse situational understanding and blur the distinctions between war and peace, combatant and noncombatant, friend and foe—perhaps even humans and machines.
>
> Warfare in the future will involve transporting, fighting and sustaining geographically dispersed Army, joint and multinational forces over long and contested distances, likely into an opposed environment and possibly against a technologically sophisticated and numerically superior enemy. All domains will be viciously contested, and both air and maritime superiority—which have been unquestioned American advantages for at least 75 years—will no longer be a given. Forces in theater should expect to operate under increased public scrutiny, persistent enemy surveillance, and massed precision long-range fires with area effects. Close combat on sensor-rich battlefields of the future will be faster, more violent and intensely lethal, unlike anything any of us have witnessed. And the majority of our operations will likely occur in complex, densely populated urban terrain.[5]

In relation to this operational environment, IBCTs are presented with the following challenges:

> In the past, light infantry of the 82nd Airborne, 101st or 10th Mountain Division would either air drop by parachute, helicopter air assault, or air land at a friendly or secured airfield or land near one to seize it. However, Anti-Access Area Denial (A2AD) technology and weapons, like air defense systems and anti-armor, mines and improvised explosive devices (IEDs), have become both more effective and prevalent. These open the question of whether traditional insertion drop or landing zone is feasible any longer. It is increasingly likely that an "off set insertion" will be necessary with the ground force then moving by land to the objective or operating area.
>
> The concept itself is largely an upscaling of what U.S. and other nations' special operations, reconnaissance, and even some airborne units have been doing for some time: using light vehicles, including light armored vehicles that are inserted by airdrop, helicopter, or tactical transport air landing. Using the vehicles they are able to insert discretely where they are unlikely to be detected and then conduct their missions.[6]

[5] "Chief of Staff of the Army: Changing Nature of War Won't Change Our Purpose," Association of the United States Army (AUSA), October 1, 2016.

[6] Stephen W. Miller, "Ground Mobility for U.S. Light Infantry," *Military Technology*, October 2016, p. 49.

IBCT Capability Gaps

The Army describes IBCT critical capability gaps as:[7]

- The IBCT lacks the ability to decisively close with and destroy the enemy under restricted terrains such as mountains, littorals, jungles, subterranean areas, and urban areas to minimize excessive physical burdens imposed by organic material systems.
- The IBCT lacks the ability to maneuver and survive in close combat against hardened enemy fortifications, light armored vehicles, and dismounted personnel.
- IBCTs lack the support of a mobile protected firepower capability to apply immediate, lethal, long-range direct fires in the engagement of hardened enemy bunkers, light armored vehicles, and dismounted personnel in machine gun and sniper positions; with all-terrain mobility and scalable armor protection; capable of conducting operations in all environments.

How Programs Address Capability Gaps

In its current configuration, Army officials note that IBCTs "can get there fast with low logistics demand, and they can work in severely restricted terrain, but they lack mobility and protected firepower"[8] to "enter a foreign territory, immediately overcome armed opposition and hold an area that enables further troops to enter, like an airfield."[9]

The Army's concept of operation for these vehicles is to

- increase ground tactical mobility in the IBCT;
- allow infantry squads and rifle companies to quickly move extended distances over difficult terrain to seize assault objectives;
- allow rapid deployment into contested areas while providing high mobility and flexibility upon arrival; and
- limit the impact on strategic mobility of the IBCT.[10]

In this regard, the GMV/ISV is intended to provide mobility to the rifle squad and company; the LRV to provide protection to the moving force by means of scouts, sensors, and a variety of medium-caliber weapons; and the MPF to provide the overall IBCT the capability to more effectively engage and destroy fortifications, bunkers, buildings, and light to medium armored vehicles.

[7] Information in this section is taken directly from an Army G-3/5/7 briefing given to Senate staffers on "Mobile Protected Firepower, Ultra-Light Combat Vehicle & Light Reconnaissance Vehicle," November 3, 2014, p. 5, and comments from Army Staff, September 15, 2017.

[8] Joe Gould, "U.S. Army Researches Light Vehicle Concepts, Futures Chief Says," *Defense News,* December 16, 2014.

[9] Joe Gould, "U.S. Army Officials: Field Ultralight Vehicles Quickly," *Defense News,* January 15, 2015.

[10] Project Manager Transportation Systems, GMV Industry Day Briefing, August 9, 2016, p. 7. Ground tactical mobility is a unit's ability to move under combat conditions on the ground to a combat objective. Strategic mobility is the unit's ability to deploy from home station—normally by air or by sea—to a designated operational area.

The Systems[11]

The GMV/ISV, LRV, and MPF are briefly described in the following sections based on each individual vehicle's requirements.

Ground Mobility Vehicle (GMV)/Infantry Squad Vehicle (ISV)

Figure 1. Illustrative GMV/ISV

Source: John Keller, "General Dynamics Wins SOCOM Competition to Build Ground Mobility Vehicle GMV 1.1," *Military & Aerospace Electronics,* August 25, 2013.

- **Payload:** Nine soldiers/3,200 pounds capacity.
- **Transportability:** UH-60 sling load/CH-47 internal load; Air drop from C-130.
- **Mobility:** Provide mobility 75% cross-country; 10% primary roads; 10% secondary roads; 5% urban rubble environment.
- **Protection:** Provided by high mobility avoiding enemy contact and soldier Personal Protection Equipment (PPE).[12]
- **Lethality:** Provide capability to host crew-served weapons assigned to the infantry squad.
- **Command, Control, Communications, Computers, Intelligence, Reconnaissance, and Surveillance (C4ISR):** No requirement for added communication equipment or Size, Weight, Power, and Cooling (SWaP-C) organic equipment of the infantry squad.

[11] Information in this section is taken directly from an Army G-3/5/7 briefing given to Senate staffers on "Mobile Protected Firepower, Ultra-Light Combat Vehicle & Light Reconnaissance Vehicle," November 3, 2014, p. 6, and comments from Army Staff, September 15, 2017.

[12] PPE includes a soldier's helmet, body armor, and other accoutrements designed to protect against blast; fragmentation; thermal; and nuclear, biological, and chemical (NBC) threats.

Light Reconnaissance Vehicle (LRV)

Figure 2. Illustrative LRV

Source: Colin Clark and Sydney J. Freedberg Jr., "Oshkosh Shows Off Big Gun JLTV: 30mm Cannon," *Breaking Defense*, October 12, 2015.

- **Transportability:** CH-47 internal load (in combat configuration). Air drop from C-130.
- **Range:** Greater than 300 miles on internal fuel.
- **Mobility**: Provide mobility 75% cross-country; 10% primary roads; 10% secondary roads; 5% urban rubble environment.
- **Lethality:** Medium-caliber weapon system to provide precision "stand-off" lethality against small arms and offense against light armored vehicles.
- **Protection:** Protection from small arms.
- **Capacity:** Six scouts with combat equipment.
- **Command, Control, Communications, Computers, Intelligence, Reconnaissance, and Surveillance (C4ISR):** Ensure sufficient Size, Weight, Power, and Cooling (SWaP-C) to facilitate the integration of current and future communications organic to an IBCT. Support scout sensor package.

Mobile Protected Firepower (MPF)

Figure 3. Illustrative MPF

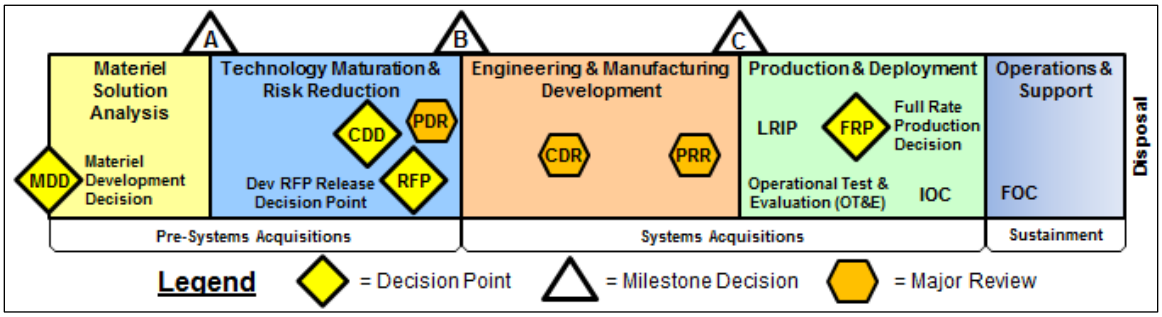
Source: Margaret C. Roth, "Vehicular Visions," *Army News Service,* February 9, 2017.

- **Range:** 300 kilometer range; 24-hour operations "off the ramp" or on "arrival at drop zone (DZ)."
- **Mobility:** Capable of traversing steep hills, valleys typical in cross-country and urban terrain, and ford depths equal to that of other organic IBCT vehicles.
- **Lethality:** Ability to defeat defensive fortifications (bunkers), urban targets (behind the wall), and armored combat vehicles.
- **Protection:** Scalable armor to include underbelly protection.
- **Communications Network:** SWaP-C sufficient to support current and future communications organic to an IBCT.

Programmatic Overview

The following sections provide brief programmatic overviews of the vehicles. **Figure 4** depicts the Department of Defense (DOD) Systems Acquisition Framework, which illustrates the various phases of systems development and acquisitions and is applicable to the procurement of these three systems.

Figure 4. DOD Systems Acquisition Framework



Source: http://acqnotes.com/acqnote/acquisitions/acquisition-process-overview, accessed February 13, 2019.

Notes: Each phase of the acquisition process has specific DOD regulations and federal statutes that must be met. At the end of each phase, there is a Milestone Review (A, B, C) to determine if the acquisition program has met these required regulations and statues to continue on into the next phase.

Critical Development Document (CDD): The CDD specifies the operational requirements for the system that will deliver the capability that meets operational performance criteria specified in the Initial Capabilities Document (ICD).

Preliminary Design Review (PDR): The PDR is a technical assessment that establishes the Allocated Baseline of a system to ensure a system is operationally effective.

Request for Proposal (RFP): A RFP is a document that solicits proposal, often made through a bidding process, by an agency or company interested in procurement of a commodity, service, or valuable asset, to potential suppliers to submit business proposals.

Critical Design Review (CDR): A CDR is a multi-disciplined technical review to ensure that a system can proceed into fabrication, demonstration, and test and can meet stated performance requirements within cost, schedule, and risk.

Production Readiness Review (PRR): The PRR assesses a program to determine if the design is ready for production.

The Army's Acquisition Strategy

The Army plans to acquire the vehicles as modified Non-Developmental Item (NDI) platforms. Because the Army adopted the NDI acquisition approach for all three vehicles, the Army can enter the programs at Acquisition Milestone C: Production and Deployment, and forgo the Engineering and Manufacturing Development Phase associated with developmental items (systems developed "from scratch") if so desired. Variations of these vehicles already exist commercially, and in order to meet Army requirements, they would require minor modifications. The Army chose this acquisition strategy because a survey of potential candidates suggested a number of existing vehicles—with minor modifications—could meet the Army's requirements. In the case of the MPF, which was less well-developed than the GMV, the MPF underwent an Analysis of Alternatives (AoA) as part of the Material Solution Analysis phase, which was completed September 7, 2017.[13]

Theoretically, adopting a NDI approach for all three vehicles could lead to a shorter acquisition time line and a less expensive overall acquisition. The NDI approach is not without risk, however, as the Technology Maturation and Risk Reduction Phase permits a more detailed examination of candidate systems, which can help identify and address requirement shortfalls earlier in the acquisition process (a less expensive solution as opposed to identifying and correcting problems

[13] Jen Judson, "U.S. Army on Fast Track to Get Mobile Protected Firepower into the Force," *Defense News*, June 28, 2017, and comments from Army Staff, September 15, 2017.

later in a system's development). In all cases, a full and open competition is expected for all three vehicles.

Mobile Protected Firepower (MPF) Becomes Part of the Next Generation Combat Vehicle (NGCV) Program

In June 2018, the Army established the Next Generation Combat Vehicle (NGCV) program to replace the M-2 Bradley Infantry Fighting Vehicle (IFV), which has been in service since the early 1980s. In October 2018, Army leadership reportedly decided to add additional vehicle programs to what would be called the NGCV Program.[14] Under the new NGCV Program, the following systems are planned for development:

- The Optionally Manned Fighting Vehicle (OMFV):[15] the M-2 Bradley IFV replacement.
- The Armored Multi-Purpose Vehicle (AMPV):[16] the M-113 vehicle replacement.
- Mobile Protected Firepower (MPF).
- Robotic Combat Vehicles (RCVs): three versions—Light, Medium, and Heavy.
- The Decisive Lethality Platform (DLP): the M-1 Abrams tank replacement.

Previously, the MPF program was overseen by the Program Executive Office (PEO) Ground Combat Systems, but the NGCV program is overseen by the recently established Army Futures Command (AFC)[17] NGCV Cross Functional Team (CFT). MPF will continue to be overseen by PEO Ground Combat Systems, but the NGCV CFT will determine operational requirements and acquisition schedule.[18]

GMV/ISV

In March 2015, the Army changed the name of its Ultra-Light Combat Vehicle (ULCV) to the Ground Mobility Vehicle (GMV).[19] The overall GMV Army Acquisition Objective (AAO) was 2,065 vehicles for the Army and 317 vehicles for U.S. Army Special Operations Command (USASOC). The specific near-term requirement is 295 vehicles for the five Airborne IBCTs and 317 vehicles for USASOC.[20] The Army's FY2018 budget request modified the Army's original acquisition strategy for the GMV, essentially splitting it into two phases.[21] In the first phase, the Army planned to procure GMVs for the five Airborne IBCTs through a U.S. Special Operations Command (USSOCOM) contract already in place for a similar vehicle (GMV 1.1) for USSOCOM forces. In this case, the Army planned to purchase the Flyer 72 vehicle from General

[14] Ashley Tressel, "MPF, AMPV Now Part of NGCV Family of Vehicles," *InsideDefense.com*, October 12, 2018.

[15] For additional information on the OMFV see CRS Report R45519, *The Army's Optionally Manned Fighting Vehicle (OMFV) Program: Background and Issues for Congress*, by Andrew Feickert.

[16] For additional information on the AMPV, see CRS Report R43240, *The Army's Armored Multi-Purpose Vehicle (AMPV): Background and Issues for Congress*, by Andrew Feickert.

[17] For additional information on AFC see CRS Insight IN10889, *Army Futures Command (AFC)*, by Andrew Feickert.

[18] Ashley Tressel, "MPF, AMPV Now Part of NGCV Family of Vehicles," *InsideDefense.com*, October 12, 2018.

[19] Joe Gould, "US Army to Issue Ultralight Vehicle RFP Next Year," *Defense News*, September 5, 2015.

[20] Department of Defense FY2018 Budget Estimates, Justification Book of Other Procurement, Army Tactical and Support Vehicles, Budget Activity 1, May 2017, p. 14.

[21] Ibid and Jen Judson, "Big Delays Hit Army Ground Mobility Vehicle Buy," *Defense News*, June 12, 2017.

Dynamics Ordnance and Tactical Systems.[22] The Army contended that the limited buy of 295 GMV 1.1 vehicles for the five Airborne IBCTs was the quickest way to field this interim capability that has gone through USSOCOM-sponsored testing and shares the same repair parts, thereby reducing costs.

The second phase of the GMV program would be to acquire 1,700 GMVs through a full and open competition once the Army has refined its requirements, which was intended to reduce the overall cost. Army officials noted the GMV 1.1 procurement cost will be higher, however, than the cost of the GMVs procured through full and open competition. The Army planned to spend $194.8 million for 718 vehicles from FY2018 to FY2022, with an expectation that a contract award would be made in FY2020.[23]

Phase II of the GMV Program—The Infantry Squad Vehicle (ISV)[24]

To equip other types of IBCTs, the Army established the Infantry Squad Vehicle (ISV) program. The ISV is planned to be a larger competitive program than the GMV program and is to have similar operational requirements as the GMV. ISV is planned to be fielded to Active and Reserve Components. The estimated total requirement is for 2,065 vehicles, with projected target production quantities for the next five fiscal years as follows:

- FY2020: 17 vehicles.
- FY2021: 118 vehicles.
- FY2022: 177 vehicles.
- FY2023: 177 vehicles.
- FY2024: 162 vehicles.

The targeted ISV program acquisition timeline is as follows:

- Draft Request for Proposal (RFP): March 29, 2019.
- Industry Day: April 11, 2019.
- Final RFP Release: April 18, 2019.
- Prototype Contract Awards (up to three vendors): August 20, 2019.
- Prototype Vehicle Delivery (two vehicles up to three vendors): November 1, 2019.
- Production Contract Award: March 31, 2020.

[22] Information in this section is from Jen Judson, "Big Delays Hit Army Ground Mobility Vehicle Buy," *Defense News*, June 12, 2017.

[23] Department of Defense FY2018 Budget Estimates, Justification Book of Other Procurement, Army Tactical and Support Vehicles, Budget Activity 1, May 2017; and Jen Judson, "Big Delays Hit Army Ground Mobility Vehicle Buy," *Defense News*, June 12, 2017.

[24] Information in this section is taken from Ashley Tressel, "Army Seeking New Air-Transportable Infantry Vehicle," *InsideDefense.com*, November 14, 2018 and Infantry Squad Vehicle (ISV) – Special Notice, Federal Business Opportunities, February 27, 2019.

LRV

Army officials were planning to use the Joint Light Tactical Vehicle (JLTV)[25] to serve as the LRV on an interim basis.[26] From a programmatic perspective, the Army refered to its interim LRV solution as the Joint Light Tactical Vehicle-Reconnaissance Vehicle (JLTV-RV). The JLTV, which is currently in production, could be equipped with additional firepower and sensors to serve in this role while the Army continues to refine its requirements for the LRV. The standard JLTV—at around 18,000 pounds and carrying only four soldiers—does not meet the Army's weight and crew requirements for the LRV as currently envisioned. The Army planned for the LRV to be fielded in IBCT Cavalry Squadrons and Infantry Battalion Scout Platoons. The Army's decision to not request funds for JLTV - RV[27] in its FY2020 budget request calls into question the future of this effort.

MPF

In October 2016 the Army began its Analysis of Alternatives for MPF candidates.[28] MPF would also be a modified Non-Developmental Item (NDI) platform.[29] The Engineering Manufacturing Development (EMD) phase is planned to begin in FY2019 and last through FY2022, with an anticipated Milestone C—beginning of Production and Deployment—by FY2022. Reports suggested the Army had a requirement for about 500 MPF vehicles with an average unit manufacturing cost of $6 million to $7 million per vehicle, which suggests a total program cost of approximately $3 billion to $3.5 billion.[30] The Marine Corps is reportedly monitoring MPF development for possible use in its Marine tank battalions, which could raise the overall MPF procurement to around 600 vehicles.[31]

On November 17, 2017, the Army released a request for proposal (RFP) for MPF.[32] The RFP reportedly noted the Army wished to procure 504 MPF vehicles at a unit manufacturing cost target of $6.4 million per vehicle.[33]

[25] For additional information on the JLTV, see CRS Report RS22942, *Joint Light Tactical Vehicle (JLTV): Background and Issues for Congress*, by Andrew Feickert.

[26] Courtney Mc Bride, "Officials: JLTV to Fill Role of Light Recon Vehicle 'for the Foreseeable Future'," *Inside Defense*, March 16, 2016.

[27] CRS discussion with Army Budget Liaison (SAFM-BUL), Office of the Assistant Secretary of the Army (Financial Management & Comptroller), March 26, 2019.

[28] Connie Lee, "MPF Cleared to Begin Analysis of Alternatives," *Inside Defense*, October 28, 2016.

[29] Information in this section is taken from Department of Defense FY2018 Budget Estimates, Justification Book of Research, Development, Test & Evaluation, Army RDT&E – Volume II, Budget Activity 5A, May 2017, p. 153.

[30] Jason Sherman, "Army Set to Consider Formal Launch of Mobile Protected Firepower Acquisition," *Inside Defense*, October 14, 2016.

[31] Josh Cohen, "Mobile Protected Firepower Bridges Infantry Brigade Combat Teams Direct Fire Capability Gap," *The National Interest*, August 8, 2017.

[32] Ashley Givens, "Army Releases Request for Proposal for Mobile Protected Firepower," *Army.mil*, November 17, 2017.

[33]Information in this section is taken from Courtney McBride, "Army Issues Request for Proposals for Mobile Protected Firepower," *InsideDefense.com*, November 22, 2017.

MPF Prototype Contracts Awarded[34]

In December 2018, the Army reportedly awarded contracts to BAE Systems and General Dynamics Land Systems (GDLS) to build MPF prototypes. Both companies were reportedly awarded contracts not to exceed $376 million to build 12 prototypes for testing before one company is selected to deliver up to 28 low-rate initial production (LRIP) vehicles. BAE was said to have proposed a modified version of the Army's old M-8 Armored Gun System, and GDLS integrated an M-1 Abrams turret onto the British Ajax Scout Vehicle hull into what is called the Griffin III.

Budgetary Considerations

FY2020 Budget Request

GMV/ISV

The FY2020 Army GMV budget request for $37 million in procurement funding supports the procurement of 69 GMVs for the U.S. Army Special Operations Command and 15 ISVs for the Army.[35] The FY2020 GMV Research, Development, Test & Evaluation (RDT&E) request is for $3 million to support operational testing.[36]

LRV

The Army did not submit a FY2020 budget request for the LRV program.[37] From a programmatic perspective, the Army refers to its interim LRV solution as the Joint Light Tactical Vehicle-Reconnaissance Vehicle (JLTV-RV).

MPF

The FY2020 Army MPF budget request for $310.152 million in RDT&E funding supports the continuation of rapid prototyping efforts and the completion of 24 prototypes.[38]

Potential Issues for Congress

Future of the Light Reconnaissance Vehicle (LRV) Effort

As previously noted, the Army did not submit a FY2020 budget request for LRV funding. Absent any formal announcement, it is unknown if the Army has decided to cancel this effort, initiate a new effort, or if it is putting this effort on hold to free up funding for other priorities. Another

[34] Information in this section is from Ashley Tressel, "BAE, General Dynamics Move Forward in MPF Competition," *InsideDefense.com*, December 21, 2018.

[35] Department of Defense, FY2020 Program Acquisition Cost by Weapon System, March 2019, p. 3-8.

[36] Ibid.

[37] CRS discussion with Army Budget Liaison (SAFM-BUL), Office of the Assistant Secretary of the Army (Financial Management & Comptroller), March 26, 2019.

[38] Department of Defense FY2020 Budget Estimates, Army Justification Book of Research, Development, Test & Evaluation, Army RDT&E − Volume II, Budget Activity 5A, March 2019, p. 252.

potential issue is if this effort has been cancelled, how the Army will address the operational need for reconnaissance in the IBCTs that the LRV was intended to satisfy.

Security Force Assistance Brigades (SFABs) and ISV, LRV, and MPF Requirements

As previously noted, in February 2017 the Army announced it would establish six Security Force Assistance Brigades (SFABs)—five in the Active Component and one in the Army National Guard (ARNG). While not combat brigades per se, the Army plans for SFABs to be expanded, if the need arises, into fully operational ABCTs or IBCTs capable of conducting major combat operations.

If the Army plans to expand some of its SFABs into IBCTs it could have an impact on the number of ISVs, LRVs, and MPF systems needed to fully equip these units. While these numbers would likely be modest, it might be of interest to Congress to know how many additional vehicles would be required. Since they would not be part of the SFAB's organic equipment and only needed in the event of Army expansion, how and when will these vehicles be procured and how will they be maintained so that they would be available when needed?

GMV/ISV, LRV, and MPF Fielding Plans

Apart from fielding GMVs to Airborne IBCTs, little is known about the Army's overall fielding plan for these vehicles. Would active IBCTs receive these vehicles first, followed by National Guard IBCTs, or would both components receive the vehicles concurrently? When would these vehicles begin arriving at units, and when is the overall fielding anticipated to conclude? Does the Army plan to field these vehicles to prepositioned stocks in addition to units? What are some of the challenges associated with fielding three different vehicles with different production and delivery dates?

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