

1.0 INTRODUCTION

“Focus the Future Faster”

Today’s fiscally austere environment and the shift to refocus on amphibious operations presents significant challenges to the Marine Corps as it strives to replace or modernize its legacy equipment. The 2013 Advanced Technology Investment Plan (ATIP) was developed as a tool to help the Program Executive Officer Land Systems (PEO LS) inform, influence, and align the Science and Technology (S&T) enterprise and support key stakeholders in their efforts to transition affordable, reliable technologies with increased capabilities to the Warfighter. The primary purpose of the 2013 ATIP is:

- Identify and Prioritize Top Technical Issues within PEO LS Programs
- Inform, Influence, and Align S&T Investments
- Resolve Capability Gaps & Technology Issues
- Support Technology Insertion and Transition into Programs of Record (POR) and eventually to the Warfighter

The ATIP is also developed to assist industry and government in their efforts to be better informed concerning the S&T needs of the major Acquisition Category (ACAT) I & II programs within PEO LS. There are many needs that are common across all PEO programs: the need to be more reliable; the need for more efficient power; the need for enhanced survivability while maintaining and/or increasing mobility; and the need to have an independent and reliable Modeling & Simulation (M&S) capability. These needs are being addressed through numerous S&T initiatives managed by Office of Naval Research (ONR), the Tank and Automotive Research, Development and Engineering Center (TARDEC), and the Defense Advanced Research Projects Agency (DARPA), and within the program offices themselves. The goal of this 2013 ATIP is to better define the critical

technology needs and the efforts each organization is contributing to address them.

This fourth edition of the ATIP incorporates the new programs added to the PEO last year and addresses the top technical issues of each program within PEO LS in an effort to transition gap closing technologies to the Warfighter. Identifying the technical challenges is an essential first step, but the real key to getting affordable, state-of-the-art capability to the Warfighter is focused engagement with the stakeholders of the Marine Corps S&T Enterprise. This group is also referred to as the “3 Circles.” The “3 Circles” represent a set of collaborative relationships between the *Combat Developer*, the Combat Development and Integration (CD&I) and the Marine Corps Warfighting Laboratory (MCWL); the *S&T Developer*, ONR Expeditionary Maneuver Warfare and Combating Terrorism Department (ONR Code 30); and the *Material Developer*, which are the Marine Corps Systems Command and PEO LS. In order to maximize S&T funds and to facilitate transition, PEO LS has actively expanded this community of stakeholders to include additional key stakeholders and partners such as TARDEC, DARPA, academia and industry as depicted in Figure 1 on the following page.



Mr. William E. Taylor, the Program Executive Officer for Land Systems Marine Corps, converses with Marines during his tour of the facility at Camp Pendleton, Calif., Feb. 7. His visit coincided with the beginning of Phase I of the Common Aviation Command and Control Systems at MASS-3.

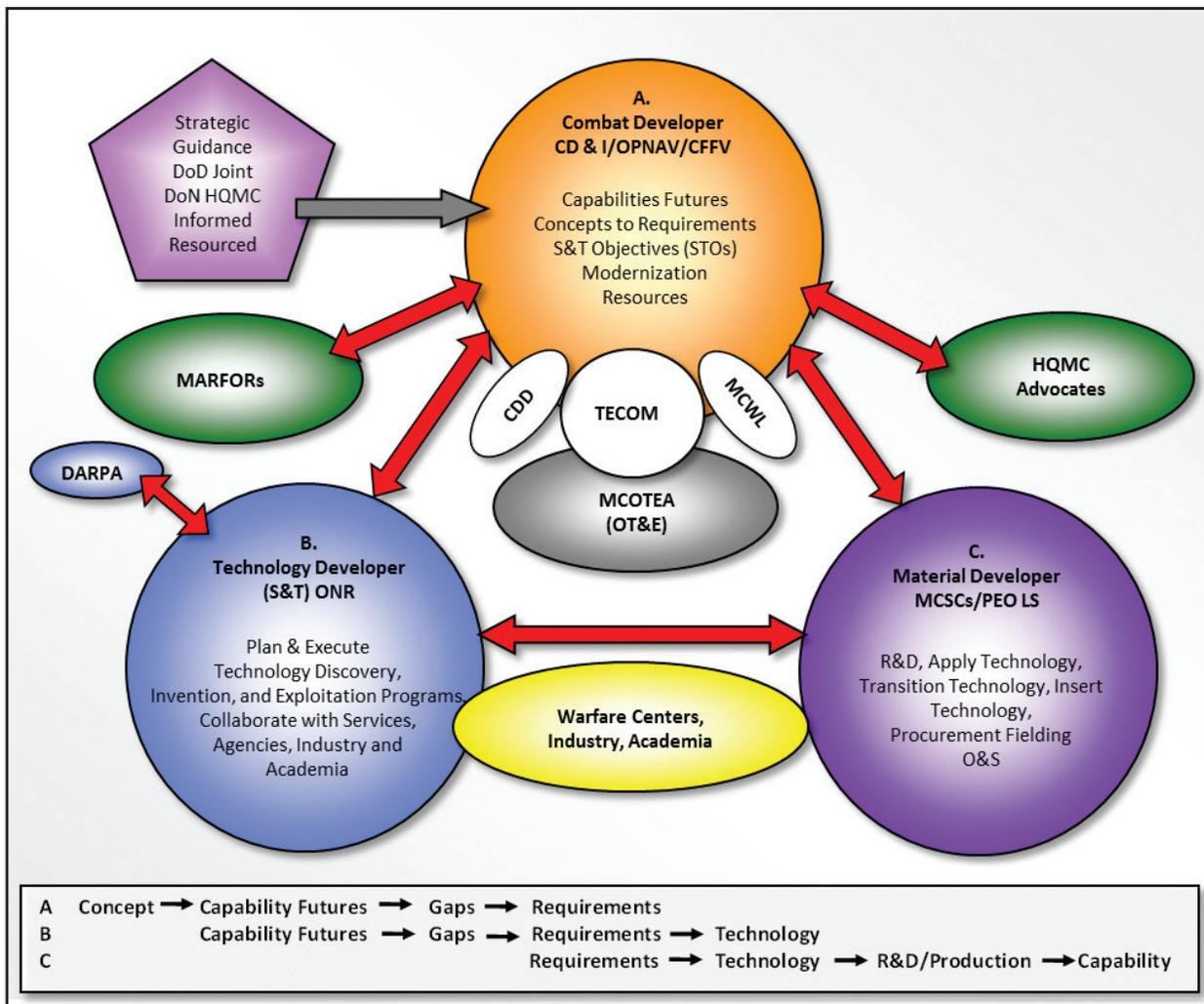


Figure 1. Marine Corps S&T Enterprise "3 Circles"

Joint Center for Ground Vehicles

An excellent example of the expanded "3 Circle" community at work is the Joint Center for Ground Vehicles (JCGV). A Memorandum of Understanding was signed between the Army and Marine Corps in August of 2010 establishing the Joint Center. PEO LS has been working with the Army in a joint construct (see organizational chart on the following page). The JCGV was formed from existing organizations and infrastructure (Figure 2) to address current and future technical and resource challenges surrounding ground vehicles. The JCGV is focused on ground tactical vehicles and is seeking efficiencies across programs. Its key goals are to increase efficiency, reduce costs, and synchronize technology development – ultimately

improving the effectiveness of the ground vehicle system development and acquisition across both the Army and the Marine Corps.

A few of the key pillars of the Joint Center are:

- No additional layers of oversight
- Builds from existing structures
- Centralized collaborative governance
- Synchronized technology development
- Open communications
- Deliberate focus on cost cutting issues
- Existing authorities remain unchanged

The JCGV has afforded the Marine Corps the opportunity to leverage Army investments that are relevant to the needs of the PEO LS Program Managers and the Marine Corps.

“Concept to Capability” Process

The PEO Land System’s S&T “Concept to Capability” Process is a repeatable process with ongoing review and focused feedback. This process has proven essential when interacting with the JCGV and S&T Stakeholders. The process actions begin with an in-depth understanding and alignment to the overarching concepts identified in *Marine Corps Vision and Strategy 2025* and capstone concepts for the future. It is critical to employ these guiding documents and concepts to inform and align the capability requirements, guide

technical development, and provide best value investing. An understanding of the Warfighters’ Concepts and the core capabilities required to enable those concepts is the next step in the process. Also critical is an understanding of the top level strategic and operational service issues (listed below) that rely on material solutions for resolution.

- Rehoning the Expeditionary Edge – Reducing the Sustainment Footprint
- Fuel Saving Across the Marine Air Ground Task Force (MAGTF)
- Lightening the MAGTF Load
- Reducing the MAGTF Footprint

Once the operational concepts and capabilities are understood, an analysis is performed to identify

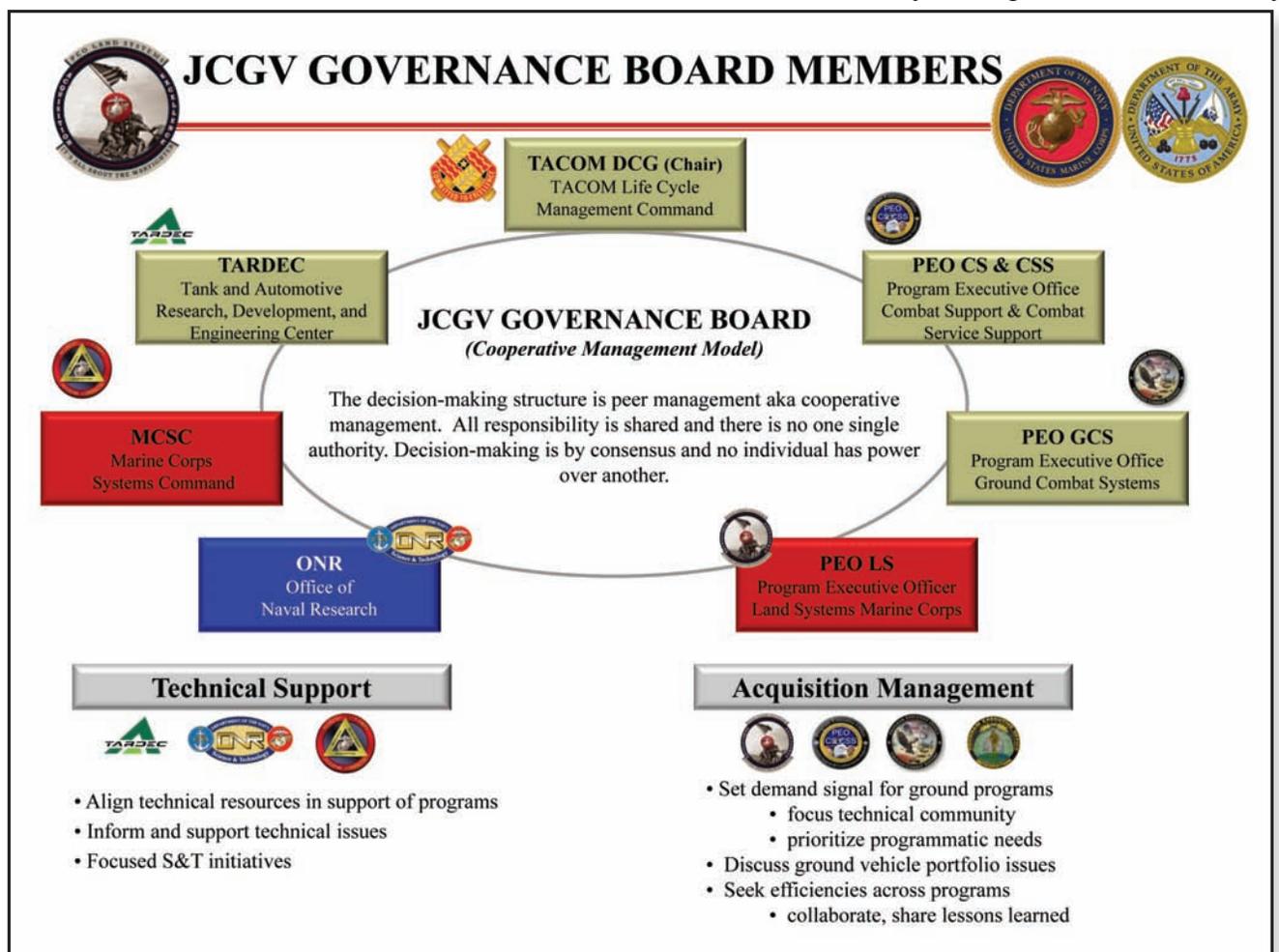


Figure 2. Joint Center for Ground Vehicles Governance Board Members

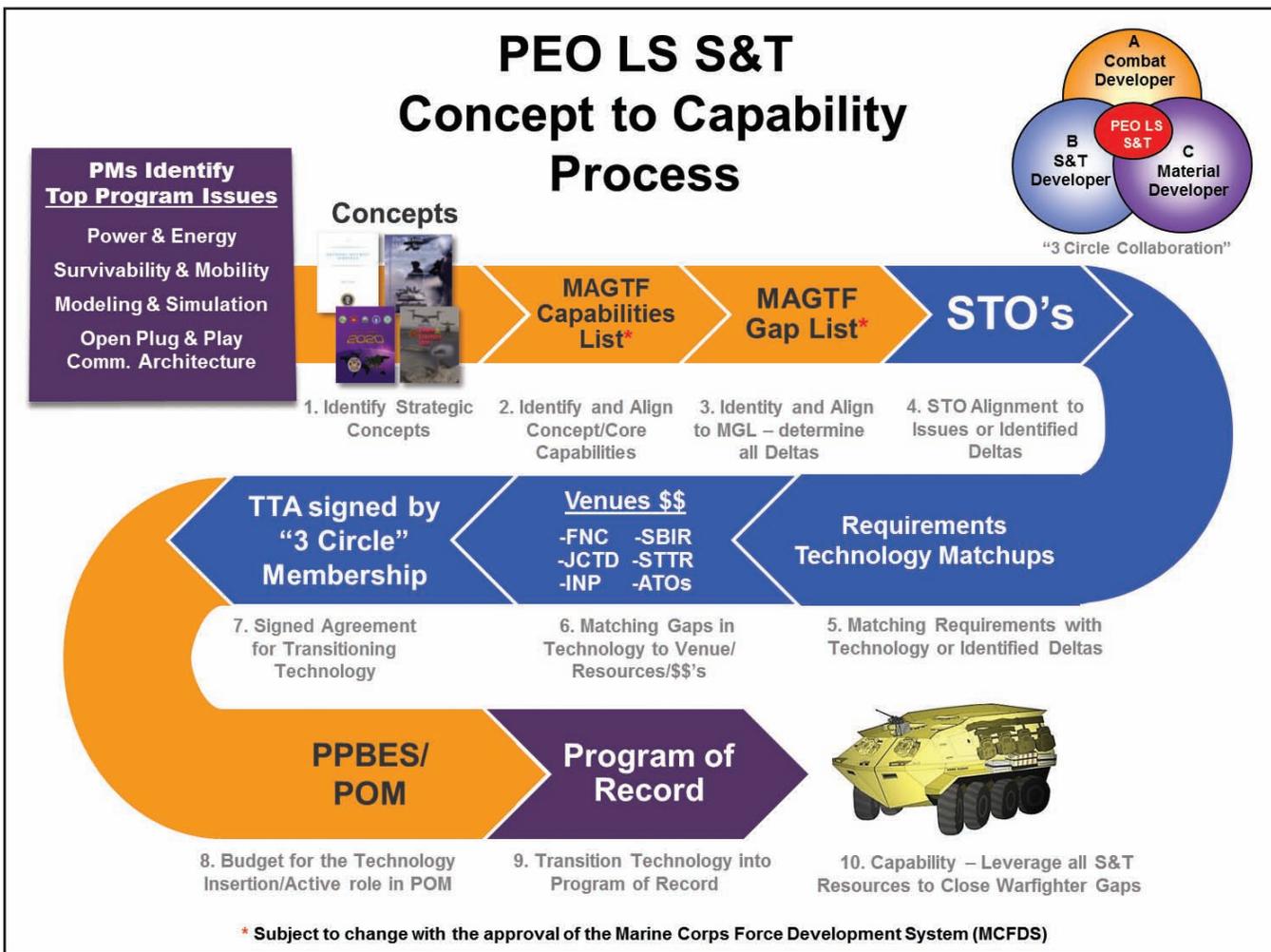


Figure 3. PEO LS ATIP "Concept to Capability" Process

the MAGTF capabilities and technology gaps. These capabilities and gaps are codified in the MAGTF Capability List (MCL) and MAGTF Gap List (MGL), as well as in the Solutions Planning Directive (SPD) and the MAGTF Requirements List (MRL).

A review is conducted to align all applicable Science and Technology Objectives (STOs) to the technology issues/capability gaps. This alignment of STOs with high priority gaps ensures traceability of PEO LS S&T investments and enables stronger support within the Program Objective Memorandum (POM) process.

Once the alignment is complete, a thorough review of current S&T initiatives is conducted to highlight

those initiatives that have potential to resolve the identified technology issue/capability gap. If it is determined a "delta" exists and no current S&T initiative is in place to address/resolve the gap, then potential S&T venues are evaluated and a "new" S&T initiative is submitted via the appropriate forum – matching gaps in technology to the appropriate venue able to best align resources to resolve the program technical issue and schedule.

Upon approval of the new S&T initiative, the Project Manager, as well as all "3 Circle" members, capture the shared commitment within the framework of a formalized Technology Transition Agreement (TTA). After the TTA is signed by the appropriate level of "3 Circle" leadership, the S&T Representative continues to work closely with

the Project Manager to ensure funding support is available (in the POM) to integrate and transition the technology to the appropriate POR and close the associated Warfighter gap.

By working through the “Concept to Capability” process (Figure 3) potential S&T opportunities and solutions are identified, enabling PEO LS S&T Representatives to better inform requirements, provide “best value” S&T investing and transition gap closing technologies to a POR.

The best way to leverage this funding is through consistent, informed engagement across all “3 Circle” partners.

PEO LS Organization

Figure 4 reflects the current PEO LS organization.

Electronic Copies of ATIP

The PEO LS ATIP is published annually and is available electronically on the Defense Innovation Marketplace website:

<http://www.defenseinnovationmarketplace.mil/USMCInformation.html>

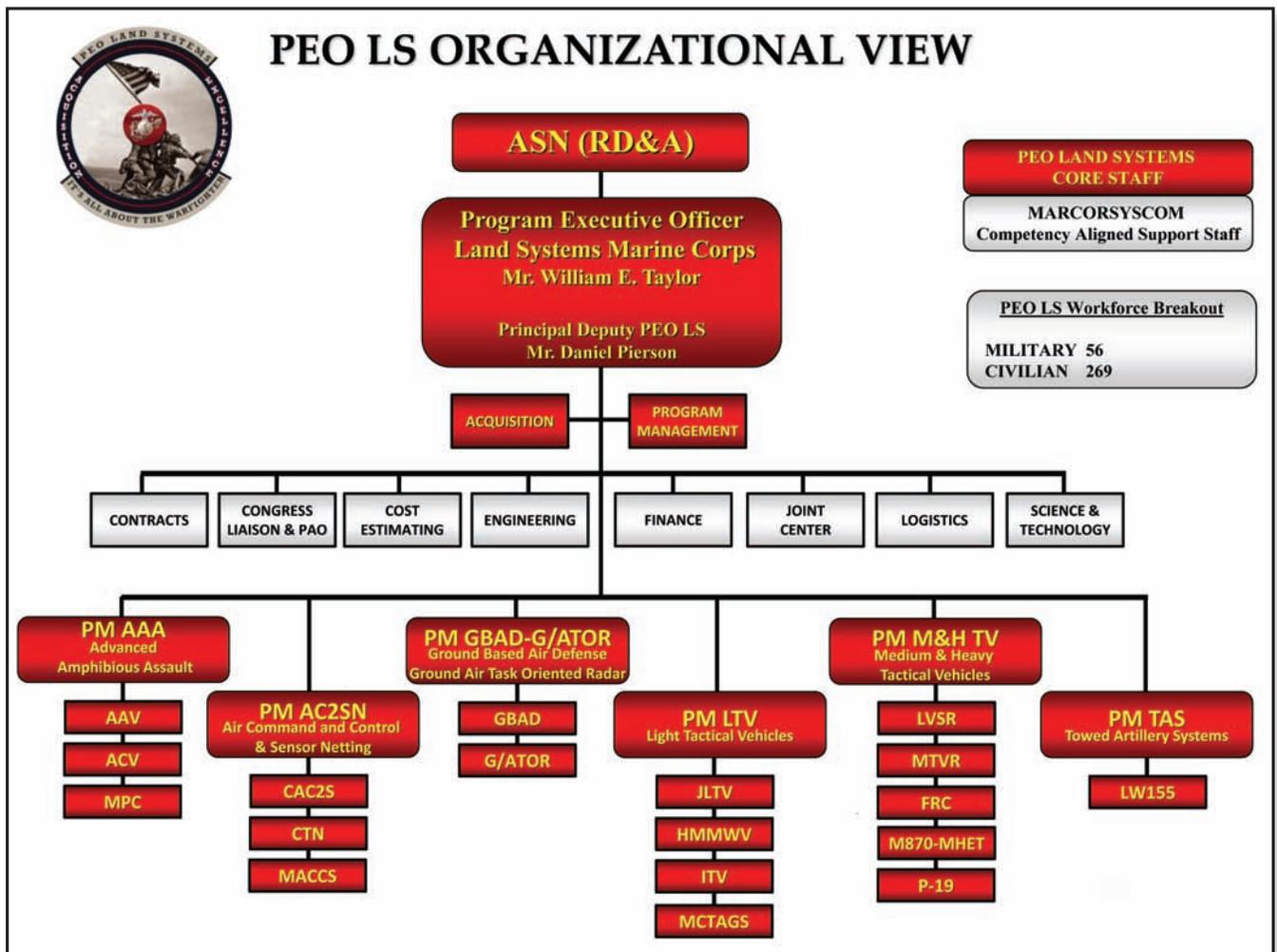


Figure 4. PEO LS S&T Organization