## Human Resources Data and Systems Integration with Sustainment in 2040

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he Adjutant General's (AG) Corps is the lead proponent with the responsibility and mandate to ensure that human resources (HR) capabilities, as an integral part of the sustainment warfighting function, align with and support the demands of the current and future Army. These HR capabilities must nest and integrate with greater sustainment efforts continuously transform and to meet the needs of the operational warfighter.

After years of operating with analog and dot-matrix-era systems, the Integrated Personnel and Pay System-Army (IPPS-A) is the latest HR information system to leverage vast amounts of Total Army HR information collected at individual Soldier to enterprise levels. HR information and data is often a critical element of predictive analytics, answering Army and leader questions of what happened and how we can improve this process to be more effective. Therefore, we must continue to explore and leverage emerging technologies to best use this data to understand and enable our most critical weapon system, the Army Soldier.

Two HR functions that heavily depend on big data are replacement operations and casualty operations. Big data is an extremely large and diverse collection of information that is far too complex to process with traditional digital applications, and it continues to grow exponentially over time. In large-scale combat operations (LSCO), the volume of personnel information expands. The demand to quickly analyze trends make recommendations on to courses of action in a timely manner increases, while the leader's decision cycle timeline decreases. In a recent U.S. Army Combined Arms Support Command (CASCOM) tabletop exercise focused on replacement operations, the sustainment community acknowledged theaterlevel replacement operations are not just AG Corps personnel actions, but also require the synergy of, and place demands on, sustainment assets.

This complex problem set requires the enterprise and generating force identify, to manage, transport, house, equip and track individual replacements from the continental U.S. to the unit-level point of need in theater. Theater replacements and in-transit personnel accountability are a challenge for the AG Corps. Although the consolidation of data and improved visualization tools greatly assist us today, there are still gaps we can mitigate through information sharing across the sustainment landscape.

In the same manner, casualty operations in LSCO have similar challenges with data accuracy and timeliness. The current process to capture and input the information is not practical in a sustained environment of greater casualties. It requires ways to integrate automation artificial intelligence and (AI)to develop a materiel solution in our casualty reporting system and processes that are integrated with other Army common operational pictures (COPs) and sustainment information systems.

HR AI integration is still fledgling but has the potential to grow and become a robust capability for the Army. We must dedicate resources toward predictive sustainment, encapsulating all sustainment functions. The development and application of AI and other emerging technology on future battlefields to expeditiously gather and utilize HR information is critical to providing commanders with the sustainment to fight and win.

Project Mercury, the Army Futures Command's software application and web-based sustainment planning tool, generates classes of supply estimates and integrates CASCOM planning factors based on unit information. It must also include HR planning estimates as part of future application development. Additionally, the Artificial Intelligence Integration Center must consider AG Corps elements of the sustainment warfighting function as they identify, synchronize, and accelerate the development, integration, and adoption of effective and timely AI solutions. These efforts will help commanders with data visualization and with informed, data-driven, and comprehensive decision making for the sustainment warfighting function.

The goal moving forward must be shared data to inform not just a COP but also a comprehensive operating picture. Using large language models, which can scrape through pages of data to understand patterns that unfold, represents just one of the emerging technologies the Army can holistically leverage to improve our ability to manage and track sustainment across the battlespace. For example, within the Mounted Mission Command, IPPS-A's HR Pro Lite is an additional application that can serve as the deployed version of our personnel system of record and as an interface bridge to the IPPS-A to share information about our theater personnel status.

Personnel asset visibility, and especially in-transit visibility of our people on the move, are functions that are essential to support the Army of 2040. Along with knowing where our people are, we must leverage AI and machine learning to help with reach back of essential personnel services and provide efficient support in theater. Commanders need to understand, visualize, command, and direct people on the battlefield. We must share best practices and use cases from the military, academia, and industry to develop these concepts to their fullest potential. However, we must also be aware of, and be prepared for, the likelihood of degraded operations, so we must never be far removed from a manual or analog process if our communications and digital space are interrupted while conducting operations.

The integration of technology must be extensive and designed to bolster HR professionals' capacity to manage numerous tasks. This approach is topdown, not bottom-up. Modernization is crucial to empower higher-level management to oversee functions typically handled by subordinates one or two levels down. This shift will free subordinate HR sections from excessive focus on routine tasks that can be more effectively managed in environments with enhanced protection, connectivity, and reach-back capabilities.

Our modernization efforts should emphasize practicality and expedience, focusing not on perceived ideal solutions, but on those that enhance normal operations. This includes acknowledging that future HR sections will be smaller, restructuring institutional teaching methods, and adjusting career models and enlisted/ officer requirements as outlined in Department of the Army Pamphlet (DA- PAM) 600-3, Commissioned Officer Professional Development and Career ManagementOfficer Talent Management, and DA- PAM 600-25, U.S. Army Noncommissioned Officer Professional Development Guide. Today, we already see the initial steps, as the updated but yet-to-be published Field Manual (FM) 1-0 aligns HR support with the changes in the recently published FM 4-0, Sustainment Operations. With these future concepts and the focus on ensuring that HR operational equities are represented in the sustainment futures planning and development, we will ensure that the Army's personnel systems and structure are aligned to meet the needs of Army 2040.

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