



Total Army Operation Mobilization – Replacements Integration, Sustainment and Synchronization – Phase I & II

Final Report

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Acronyms and Abbreviations

| Term | Definition | | |
|--------------|--|----------|---|
| | | HQDA | Headquarters, Department of the Army |
| AOC | Area of Concentration | | |
| ARCD | Army Reserve Careers Division | HRC | Human Resources Command |
| ARCG | Army Reserve Careers Group | IMCOM | Installation Management Command |
| ARMP | Army Reserve Mission Force | iPERMS | Integrated Personnel Electronic Records Management Systems |
| ARNG | Army National Guard | | |
| ATC | Army Training Center | IPPSA | Integrated Personnel and Pay System – Army |
| ATRRS | Army Training Requirements and Resource System | IRR | Individual Ready Reserve |
| COE | Center of Excellence | ITAPDB | Integrated Total Army Personnel Database |
| CTMA | Commercial Technologies for Maintenance Activities | MARRS | Mission Analysis Readiness Resource Synchronization |
| DAMPS-OCOTCS | Department of the Army Mobilization Processing System – Overseas Contingency Operations Temporary Change of System | MOBCOP | Mobilization Common Operation Picture |
| | | MOS | Military Occupational Specialty |
| DOD | Department of Defense | NCMS | National Center for Manufacturing Sciences |
| EDAS | Enlisted Distribution and Assignment Systems | NIPRNet | Non-Classified Internet Protocol Router Network |
| ERP | Enterprise Resource Planning | ODASD-MR | Office of the Deputy Assistant Secretary of Defense, Materiel Readiness |
| ESB | Electronic Service Bus | | |
| eTOPMIS | E-Total Officer Personnel Management Information System | PID | Plan Identification Number |
| FEMA | Federal Emergency Management Agency | PIM | Pre-Trained Individual Manpower |
| | | POC | Point of Contact |
| FORSCOM | Forces Command | POM | Program Objective Memorandum |
| G1 | Army Personnel Directorate | SIPRNet | Secret Internet Protocol Router Network |

| | | | |
|--------|-----------------------------------|------|---|
| SRP | Soldier Readiness Processing | TTHS | Trainees, Transients, Holdees, and Students |
| TCS | Temporary Change of Station | UIC | Unit Identification Code |
| TPFDD | Time-Phased Force Deployment Data | U.S. | United States |
| TRADOC | Training and Doctrine Command | USAR | U.S. Army Reserve |
| | | WTBD | Warrior Task and Battle Drills |

1. Executive Summary

Senior leadership within all large organizations require the ability to incorporate considerable amounts of integrated data spanning all resource sectors into their strategic vision to manage risk and identify hidden cost drivers affecting their bottom line. The ability to quickly and effectively pool the right resources across different sectors and disciplines to sustain similar large-scale movements is a challenge for both public and private organizations. Large multi-national corporations, Department of Defense (DOD), Federal Emergency Management Agency (FEMA), and first responders have real-time challenges in augmenting and improving upon resource management automation in their respective operations. Addressing this challenge was the overarching goal of this project.

1.1 Results

The objective of this initiative was to build automation tools to identify resources required to enable the U.S. Army to sustain its formations during a contingency operation, where shortfalls to those resources exist and potential solutions to the resource deficits are needed. Phase I focused exclusively on management of the Individual Ready Reserve (IRR) pool, identifying, sourcing, and utilization of the IRR pool to meet required delivery at a given time. Phase II expanded to include all Pre-Trained Individual Manpower (PIM) including the IRR, the Inactive National Guard, Retired Active and Reserve personnel, Standby Reserve, those in the Trainees, Transients, Holders, and Students (TTHS) accounts. Tools were also developed to identify and plan for the budget required to adequately sustain the Army's PIM so it can be easily reintegrated into the active force when necessary.

The project team utilized a rapid development and prototyping approach to build on existing government tools and processes. Their results included complex resource synchronization

capabilities that have been successfully transferred into the existing systems architecture, resulting in significant improvements in the ongoing maintenance and sustainment of Army Total Force readiness. Total Army contingency planning has been meaningfully upgraded, significantly reducing the time taken to respond effectively to changing global circumstances, improving the nation's overall National Security posture.

Funding was secured for the collaborative initiative through the National Center for Manufacturing Sciences (NCMS) Commercial Technologies for Maintenance Activities (CTMA) Program and the Office of the Deputy Assistant Secretary of Defense, Materiel Readiness (ODASD-MR).

1.2 Benefits

Any large industry or organization in need of an enterprise-wide common information technology platform to facilitate visualization and shared awareness of their organization's personnel, movable assets, and internal and external capabilities can benefit from this project. The resultant technology can reduce industrial operational costs through more efficient resource utilization and synchronization and increased effectiveness in skillset matching, leading to improved service levels, timeliness, and reduced cost of service for the general public. The enhanced organizational agility achieved through improved resource matching and synchronization also improves U.S. commercial industry competitiveness in global markets.

This initiative extensively added to the available knowledge base regarding complex areas such as effective resource identification, scheduling and load balancing, and the characterization of "cause-and-effect" factors that can be applied across the industry as well as the DOD.

The use of industry partner subject matter expertise and existing government software tools combined with rapid prototyping and development techniques resulted in a minimum of \$13M in cost avoidance when compared to creating a new, stand-alone enterprise solution.

1.3 Invention Disclosure

Invention Disclosure Report(s):

DD882 Sent to NCMS

No Inventions (Negative Report)

1.4 Project Partners

The project partners for the Phase I & II initiatives were:

- Deputy Chief of Staff for Personnel (G1), Department of the Army
- Army Human Resource Command (HRC)
- MKGCS LLC
- National Center for Manufacturing Sciences (NCMS)

2. Introduction

2.1 Background

The efficient and effective synchronization of resource requirements across a total organization and the ability to have those resources in the correct place at the right time is an enduring challenge in the public and private sectors, which impacts government and industry alike.

The Army faces these challenges at an unprecedented scale and on an ongoing basis as a viable, sustainable force cannot be maintained effectively unless resource synchronization considers all of the complex factors involved in having the Total Army assets (Regular Army, National Guard, and Army Reserve) in place and ready for all eventualities.

One of the key factors, which is a relatively small but potentially highly impactful element of Total Army readiness, is the IRR process.

As the Army continues to improve its resource synchronization capability, it recognized that the IRR process, while potentially a critical element, was not fully characterized, was manual, time-consuming, and prone to errors, adversely impacting Total Army readiness.

At the onset of this project, the Army relied on disconnected, stove-piped personnel systems to identify budgetary and contingency operation projected fill requirements of IRR forces. As a result, the Army was unable to visualize and synchronize resources from all components of the Army at once, resulting in inefficiencies and delays in the resource balancing and synchronization process. As the Army has modernized its mobilization processes and systems, the legacy systems have become decoupled from the architecture, further impacting the ability to plan for Total Army contingencies.

The industry partners on this effort had undertaken multiple past projects and built systems solutions that address resource visi-

bility, readiness, and mobilization across the Army. The partners recognized that a potentially critical element, a viable and automated IRR process, was not currently available, thereby impacting the capability of the Army to respond effectively to changing events.

As a result, this project was initiated to address this area with a limited scope intended to identify what could be achieved and develop a new set of software capabilities complementing existing government software tools that automate key steps in the IRR process to more effectively maintain and sustain Total Army operations.

The project approach focused on creating IRR software processes utilizing the Mobilization Common Operation Picture (MOBCOP) software solution data platform to provide one consistent and common environment for all general staff directorates. The project approach also focused on stakeholder partner engagement to incorporate the extensive subject matter expertise of the industry partners into the definition and creation of IRR capabilities.

The scope of this project was limited to the definition of a viable IRR process approach and the creation of a core subset of the software functions required, which demonstrated that this approach can provide an overall solution that can be fully implemented in follow-on project phases. This initiative was necessary to address an area of Enterprise Resource Planning (ERP) capability which did not exist previously and deliver defined capabilities that demonstrate that the end-to-end IRR process can be fully and effectively automated.

2.2 Purpose

This CTMA initiative focused on the following major tasks:

- Demonstrate, through the use of rapid prototyping approaches, that complex resource synchronization software capabilities can be created and implemented, which improve, maintain, and sustain Total Army readiness capabilities.
- Apply the extensive subject matter expertise of the industry partners in Army system architectures, data, and processes to create a viable IRR software solution rapidly and at a fraction of the cost of the development of a traditional new system solution from scratch.
- Close cooperation with stakeholder partners to evaluate, understand, and document the impacts of the implementation of new IRR software functions.
- Document enterprise and systems architectures describing the systems, processes, and standards required to implement the developed software tools and successfully transfer this technology to complement existing government software tools so that upon acceptance, the capabilities are available for use by Army enterprise partners.
- Utilize the existing government “Big Data” platform – the MOBCOP – to capture and process the data elements needed to automate the IRR process.
- Create resource synchronization software capabilities that meet Army requirements, are transferable to industry, and provide benefits to the general public in the form of more efficient and cost-effective service delivery.

2.3 Scope

The defined deliverables for this initiative’s Phases I & II were:

Phase I

- Enable Army Personnel Directorate (G1) to determine the number of IRR soldiers

required to support designated contingency operations by Rank and Military Occupational Specialty (MOS) via analysis of each’s Time-Phased Force Deployment Data (TPFDD) and deployment manning documents sourced from the Mission Analysis Readiness Resource Synchronization (MARRS) software solution (i.e., identify resources required to meet the task).

- Enable Assistant Secretary of the Army, Manpower, and Reserve Affairs to utilize IRR requirement levels as identified in the deliverable above to develop Program Objective Memorandum (POM) budget recommendations for maintenance of IRR (i.e., identify budget requirements).
- Enable Army HRC to identify the IRR soldiers best suited to support contingency operation requirements (i.e., identify appropriate resources to meet the requirement).
- Enable HRC to issue activation/mobilization orders directing IRR soldiers to return to active duty (i.e., direct/synchronize movement of assets).
- Enable visibility of unit vacancy filler requirements in a singular location, supported by insights including prioritization, resourcing options, and comparative analysis of multiple sources of vacancy demand.

Phase II

- Enable HRC to identify PIM and issue orders to those who require scheduling for muster formations.
- Establish interfaces with existing Army training systems like the Army Training Requirements and Resource System (ATRRS) as required to allow the Training and Doctrine Command (TRADOC) to schedule PIM/soldiers for Army re-integration training. Identify data discrepancies originating from legacy systems.

- Provide the capability within MOBCOP to accurately schedule PIM for training based on the capacity and expected throughput of Army Training Centers (ATCs), the training duration required for the MOS, and a distribution model linking the resource to the appropriate ATC based on both the resource's current MOS and a projected new MOS, as required.
- Enable Headquarters, Department of the Army (HQDA), Forces Command (FORSCOM), HRC, Installation Management Command (IMCOM), TRADOC, and ATCs to track PIM/ resources from recall through re-integration training and onward movement to unit of attachment.
- Enable appropriate headquarters to identify a pool of available PIM, bin them based on the likelihood of activation, cross-level into vacancies in deploying units, and issue Temporary Change of Station (TCS) orders directing them to report to and deploy with their newly assigned units.
- Enable all mobilization enterprise partners to develop actual PIM mobilization resourcing requirements and capture decisions made and manage a reconciliation queue to track execution of resourcing decisions, enabling partnered Army elements to develop POM submissions based upon system outputs.

3. Project Narrative

This project utilized rapid prototyping and development techniques so that each of the new IRR software capabilities under development flowed through the project steps in parallel. This resulted in an iterative approach which significantly decreased the development time and cost and allowed ongoing stakeholder review and evaluation of the developed capabilities, reducing reworking time and ensuring the final products met the defined requirements.

The project commenced with a formal kick-off meeting and was then supported throughout with Monthly Status Reports and regular meetings attended by the project partners where project status was reviewed and specific activities are undertaken (e.g., Definition of User Acceptance Criteria).

3.1 Scope Definition

At the project kick-off meeting in October 2018, the high-level deliverables of the project were

reviewed, discussed, and agreed upon by the participants.

It was further agreed that working teams led by MKGCS LLC would work with designated staff from the partners to define key items such as the User Acceptance Criteria that would be applied to each of the core deliverables to ensure that the software functions created would satisfy those project deliverables.

3.2 Analysis Step

The project team then conducted an analysis step to establish and document items such as key IRR process flows.

For example, the IRR Recall Process Flow is depicted in Figure 1. This process flow documents how an IRR resource is identified and the process that is undertaken to recall the resource to active duty and mobilize.

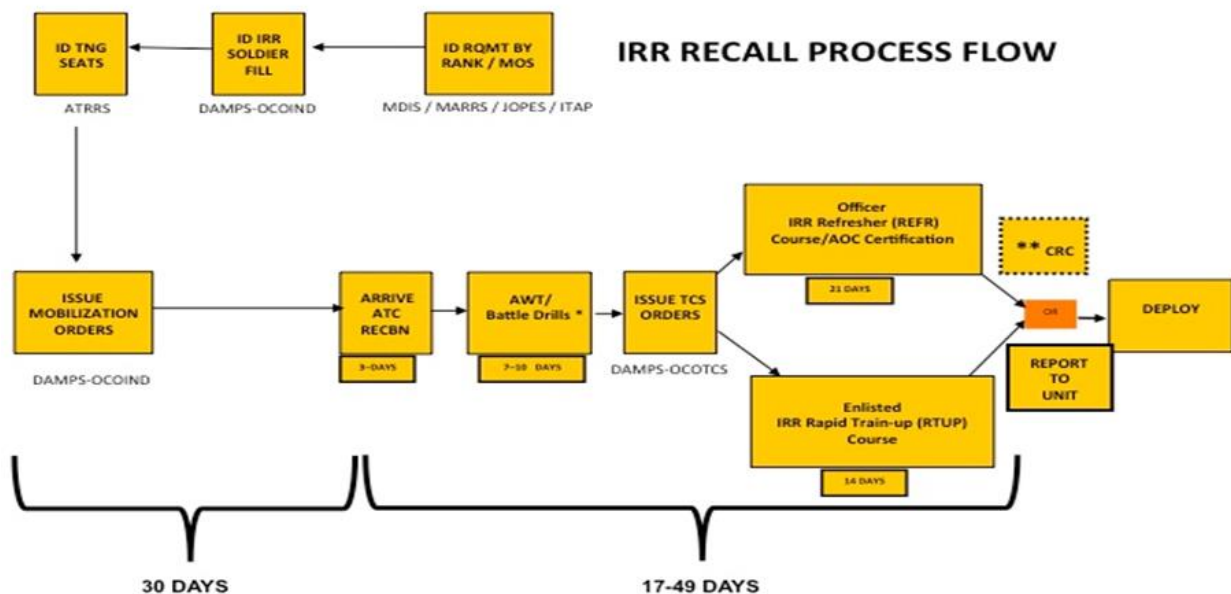


Figure 1. IRR Recall Process Flow

During this analysis step, the project team also documented the key processes and architectures involved in the IRR process to enable the subsequent design and development of IRR software functions that met the requirements of the project.

Select examples and descriptions are included below to illustrate the mapping of the key functional areas that were undertaken in this project step.

The IRR Fill Process depicted in Figure 2 follows on from the IRR Recall Process illustrated in Figure 1. This diagram maps out in detail key steps of the IRR process that can

occur once an IRR resource receives orders. For example, does the IRR resource report for duty as requested?

IRR system process documentation was also created in this project stage. For example, the IRR System Process, Figure 3, describes inputs, actions, and required outcomes of those actions.

Each step of the IRR process was evaluated and expanded to provide a comprehensive understanding of and design map for software functions.

The IRR Muster Process depicted in Figure 4 documents in detail the muster process steps.

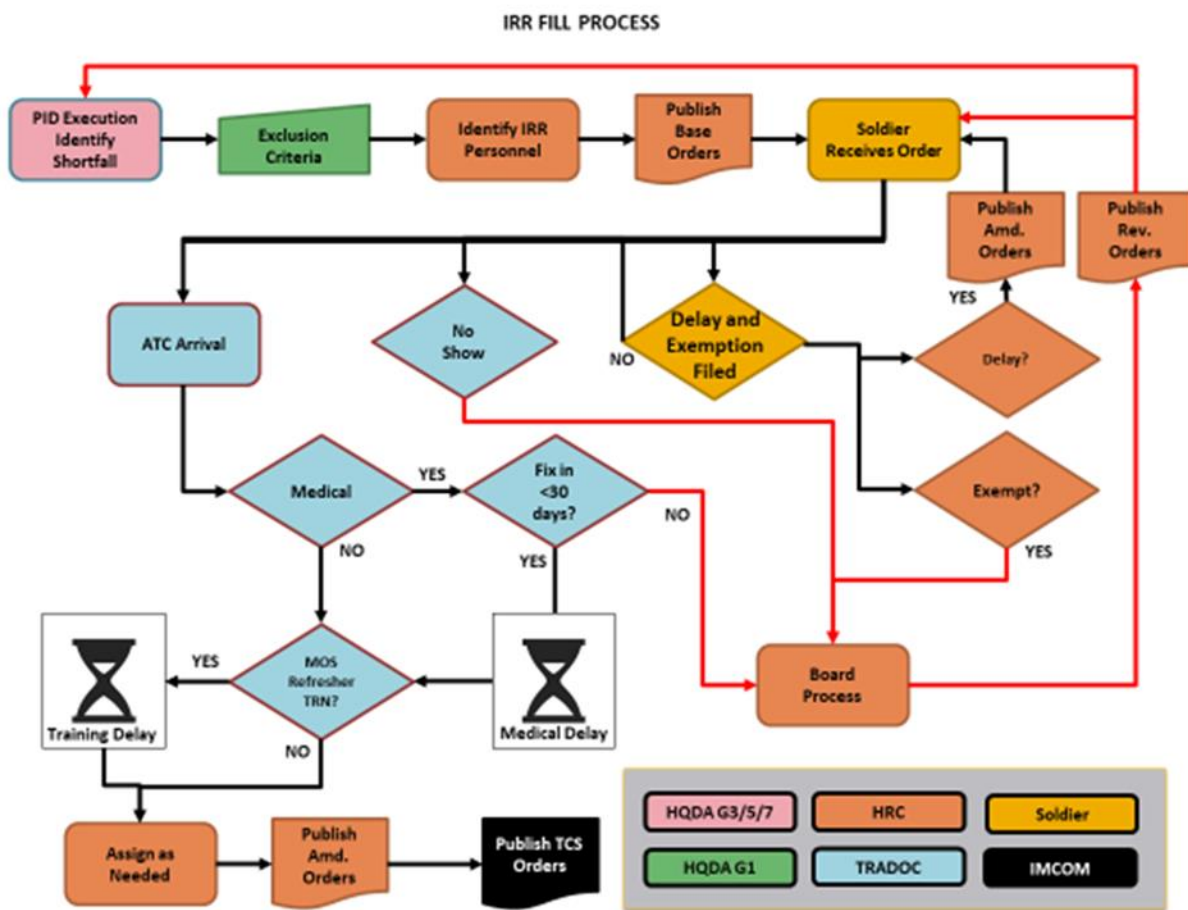


Figure 2. IRR Fill Process

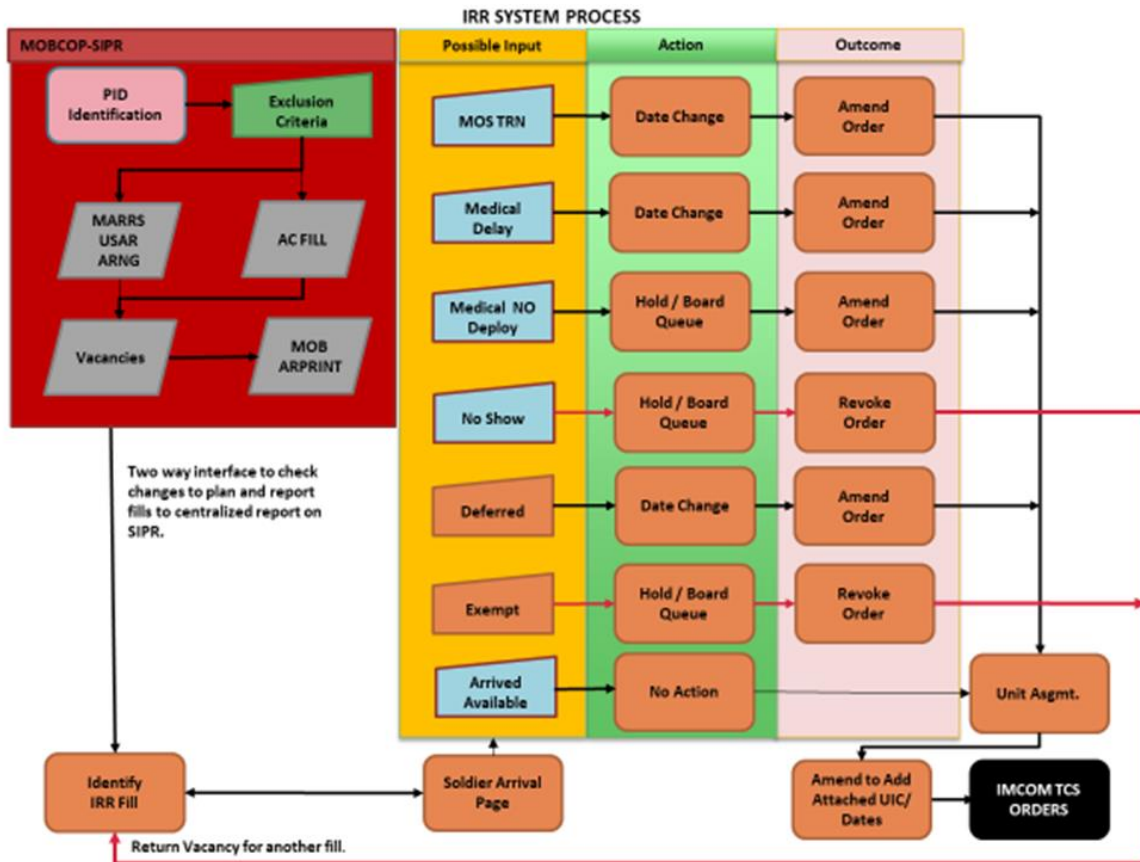


Figure 3. IRR System Process

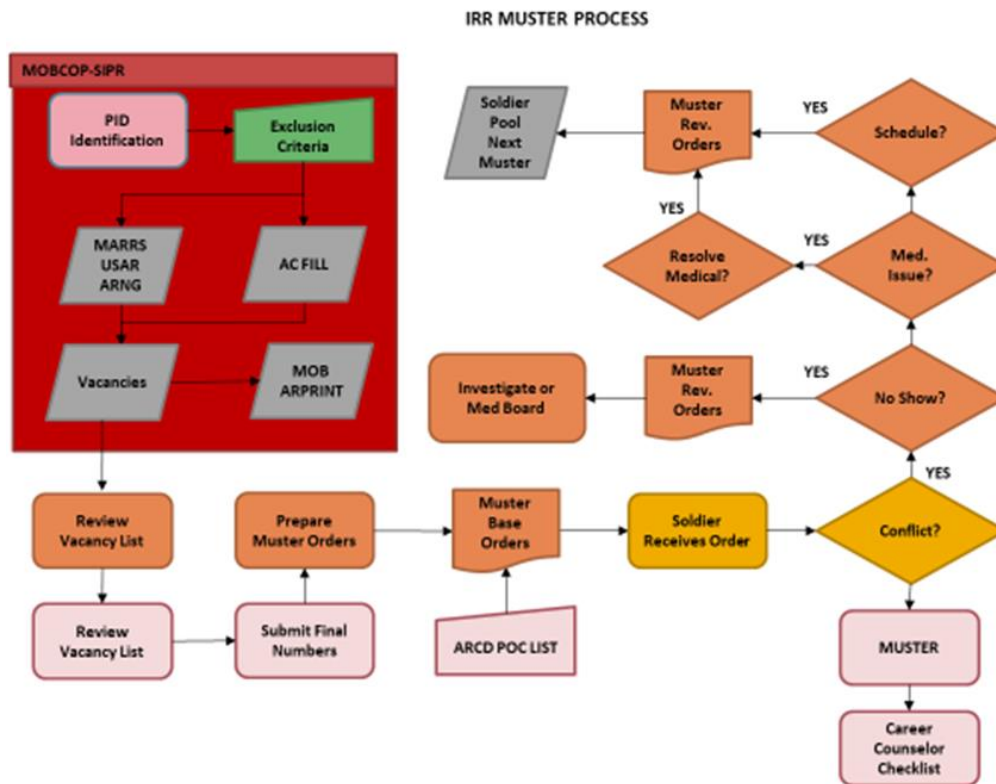


Figure 4. IRR Muster Process

3.3 Design Step

In a series of design workshops led by MKGCS LLC, subject matter experts mapped the data elements in the MOBCOP and MARRS solutions required to automate the IRR functions:

- Identify resources required to meet the task
- Identify budget requirements
- Identify appropriate resources to meet the requirement

- Direct/synchronize movement of assets
- Enable visibility of fill requirements in a single location

The team developed system process maps such as Figure 3 IRR System Process, mapping potential data inputs to actions and expected outcomes.

Combined with functional process diagrams such as Figures 5 – 8 IRR Functional Process Diagrams, this provided the design framework for software algorithms to be developed in the next project step.

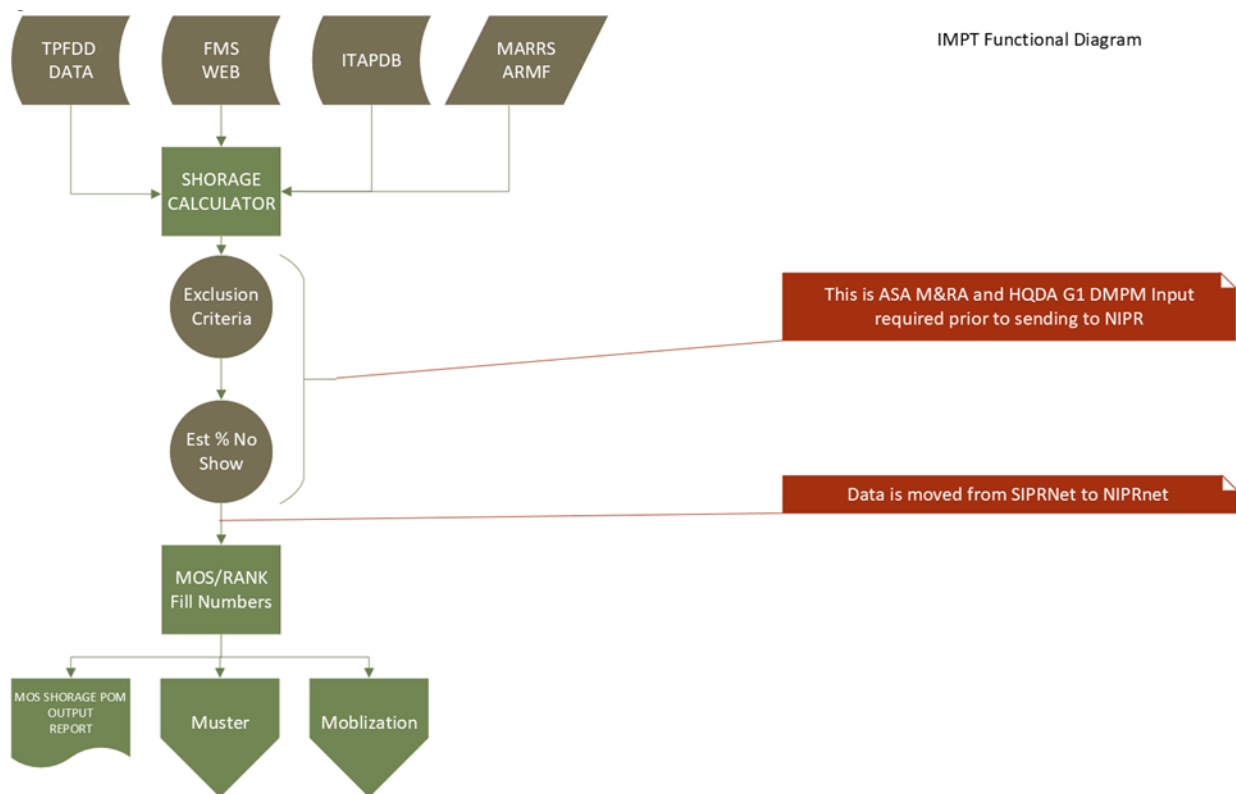


Figure 5. IRR Functional Process Diagram – Shortage Calculation on SIPRNet

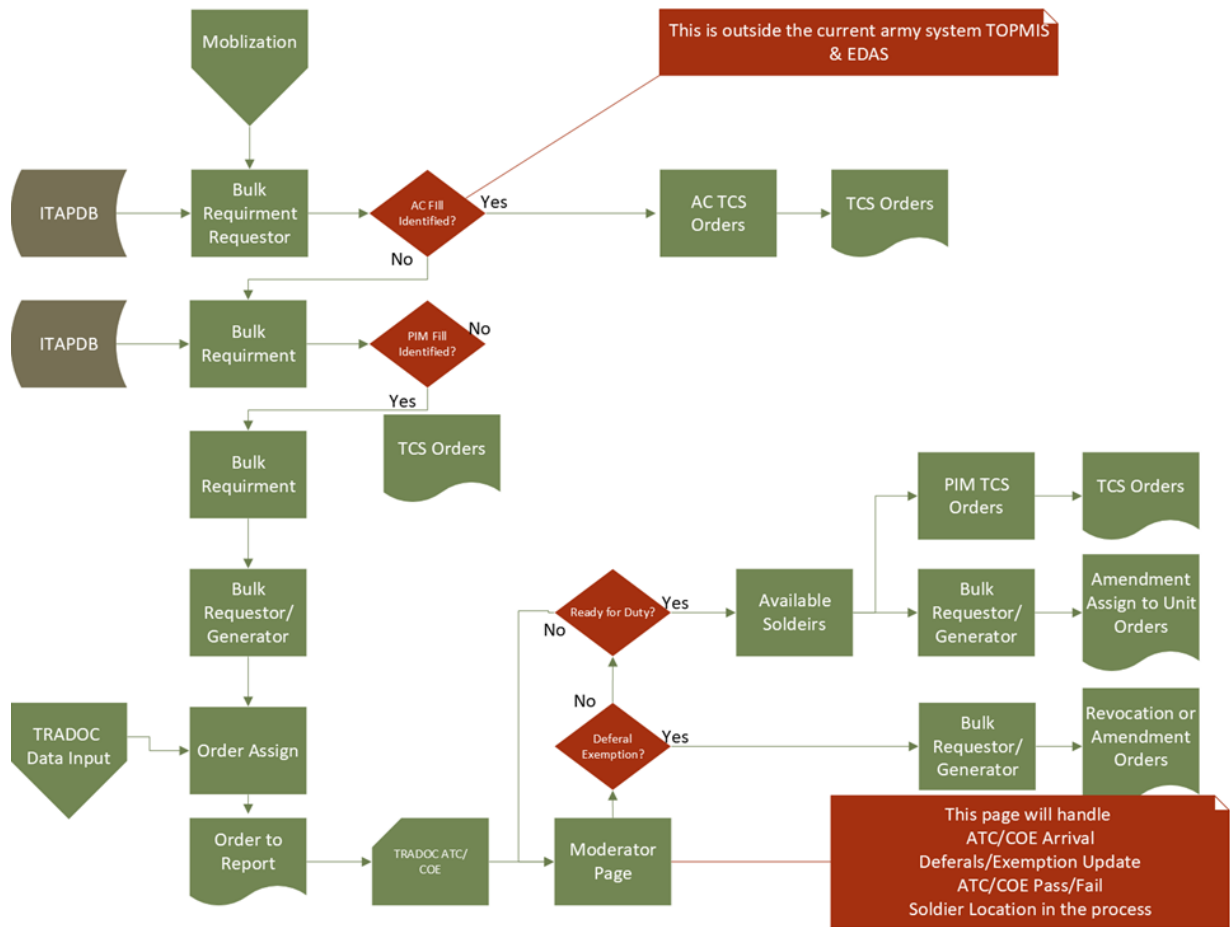


Figure 6. IRR Functional Process Diagram – Mobilization Process

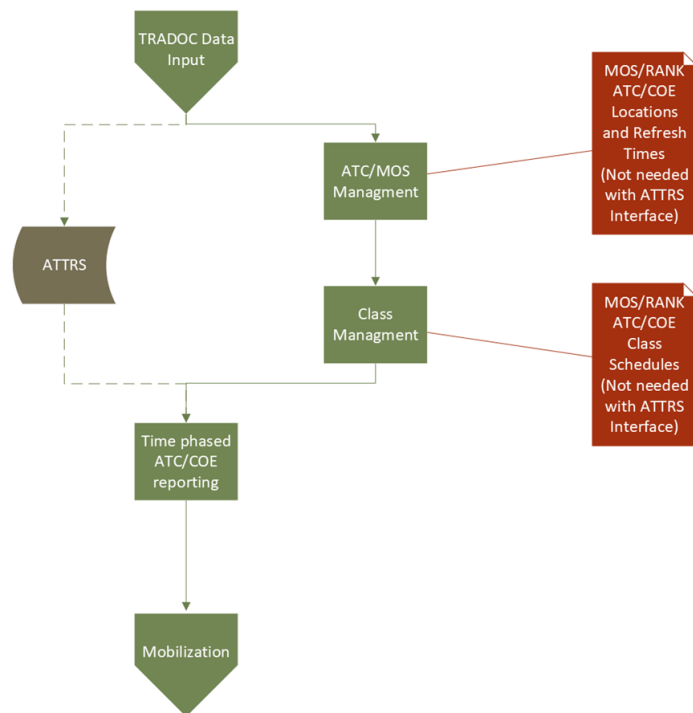


Figure 7. IRR Functional Process Diagram – TRADOC Data Input

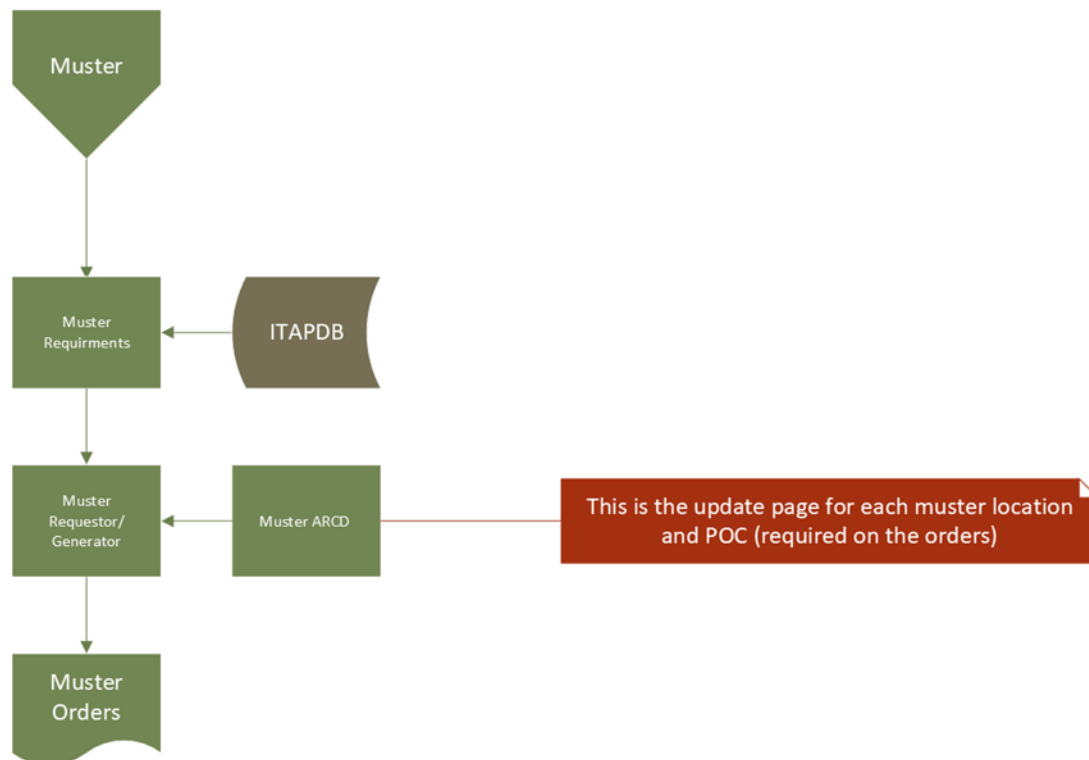


Figure 8. IRR Functional Process Diagram – Muster Orders

3.4 Development Step

Throughout the design step of the process, the project participants conducted review sessions as required to further define and refine the required design artifacts.

The team created software algorithms that perform each of the defined IRR processes of the project.

Overall, visibility was improved with reports that identified various PIM in various steps in the process. Specifically, the team delivered the following:

- Meetings with Army Reserve Careers Group (ARCG) and HRC were held to streamline the muster process. The team created a page for ARCG to keep contact information required on the orders to be updated on the regular; validation was added to prevent soldiers on orders from getting an additional active-duty order; and a template page was

created to update the letterhead for the appropriate headquarters.

- Meetings with TRADOC and HQDA G1 provided some guidance on how the algorithms could be produced to ensure that TRADOC ATC and Centers of Excellence (COEs) could be informed of the mobilization process to ensure there was just-in-time production of active-duty orders. This ensures the ATCs and COEs are not overtaxed and there is an even distribution across all ATC and COE requirements based on MOS and Area of Concentration (AOC).
- Additionally, meetings with FORSCOM, IMCOM, and HRC elaborated on the need to have a centralized page to track each mobilization asset through the process and the potential need to cross-level soldiers to different units based on the needs of the Army.
- Finally, a binning process was created based on the exclusion criteria provided by HQDA G1. This enables HRC to filter the available

population and produce orders in a timely fashion.

3.5 Test Setup

In this project step, extensive testing of the developed software algorithms was undertaken.

The User Acceptance Criteria, listed below, were applied throughout the testing step to ensure that the functionality met the requirements as defined by the project partners.

Objective 1 – Enable HRC to identify PIM and issue orders to those who require scheduling for muster formations.

- User Acceptance Criteria 1.1 – Provide the capability within MOBCOP to accurately schedule Pre-Trained Individual Manpower for Muster formations.
- User Acceptance Criteria 1.2 – Provide capability for appropriate headquarters to publish muster duty orders for PIM personnel.

Objective 2 – Establish interfaces with existing Army training systems like ATRRS as required to allow TRADOC to schedule PIM/soldiers for Army re-integration training. Identify data discrepancies originating from legacy systems.

- User Acceptance Criteria 2.1 – Provide capability to identify soldiers who are missing critical data elements provided by legacy systems which are required for MOBCOP to accurately associate them with a Plan Identification Number (PID).

Objective 3 – Provide the capability within MOBCOP to accurately schedule PIM for training based on the capacity and expected throughput of ATCs, the training duration required for the MOS, and a distribution model

linking the soldier to the appropriate ATC based on both the soldiers current MOS and projected new MOS, as required.

- User Acceptance Criteria 3.1 – Provide capability to coordinate with TRADOC to provide and refine official address and Unit Identification Code (UIC) of the four primary ATCs assigned to initially receive and train RT 13+ IRR soldiers¹.
- User Acceptance Criteria 3.2 – Provide capability to accurately capture capacity and expected throughput at the primary ATCs and follow-on MOS/AOC refresher training locations.
- User Acceptance Criteria 3.3 – Provide capability to capture the distribution model of what MOS/AOCs report to what primary ATC and follow-on MOS/AOC refresher training locations.
- User Acceptance Criteria 3.4 – Provide capability to capture training duration for each phase by MOS.
- User Acceptance Criteria 3.5 – Synchronize MOS Notification of Changes if necessary to crosswalk Integrated Total Army Personnel Database (ITAPDB) MOS information.

Objective 4 – Enable HQDA, FORSCOM, HRC, IMCOM, TRADOC and ATCs to track PIM/soldiers from recall through re-integration training and onward movement to unit of attachment.

- User Acceptance Criteria 4.1 – Provide the capability within MOBCOP to accurately schedule PIM for training.
- User Acceptance Criteria 4.2 – Provide the capability within MOBCOP to monitor and share information between responsible Army elements on soldier progression until arrival at deploying

¹ Ready Train 13. If the soldier is in the IRR for 13 months or more, they may require refresher training. RT 12 would be 12 months or less.

unit or intended mobilization destination.

Objective 5 – Enable appropriate headquarters to identify a pool of available PIM, bin them based on likelihood of activation, cross-level into vacancies in deploying units, and issue TCS orders directing them to report to and deploy with their newly assigned units.

- User Acceptance Criteria 5.1 – Provide the capability within MOBCOP to identify PIM in Army data systems from a pool of individuals including IRR, Inactive National Guard, Retired Active and Reserve, Standby Reserve, soldiers in the TTHS accounts, or others as identified.
- User Acceptance Criteria 5.2 – Provide capability to perform quality review of PIM soldiers who are not mobilization assets in accordance with ITAPDB data.
- User Acceptance Criteria 5.3 – Provide the capability within MOBCOP to cross-level existing PIM to vacancies within each unit scheduled to deploy in support of contingency operations.
- User Acceptance Criteria 5.4 – Provide the capability to identify and bin IRR

member’s potential activation based upon available MOBCOP information.

- User Acceptance Criteria 5.5 – Provide the capability within MOBCOP to accurately publish TCS orders of PIM personnel by appropriate headquarters.

3.6 Results – IRR Software Functions

Screenshot examples of the developed and tested IRR software functions are shown below in Figures 9 – 19.

The Bulk IRR Shortage page on the Secret Internet Protocol Router Network (SIPRNet) (figure not provided) will determine unit shortfalls by Rank and MOS that are not filled by the active component and cannot be filled by deployment manning documents in MARRS. This output can be used to fulfill the HRC POM requirements or can be passed to the Non-Classified Internet Protocol Router Network (NIPRNet) for HRC to determine a fill.

Bulk Requirement Requestor requirement page (Figure 9) would allow HRC to identify active-duty resources who have already been slotted

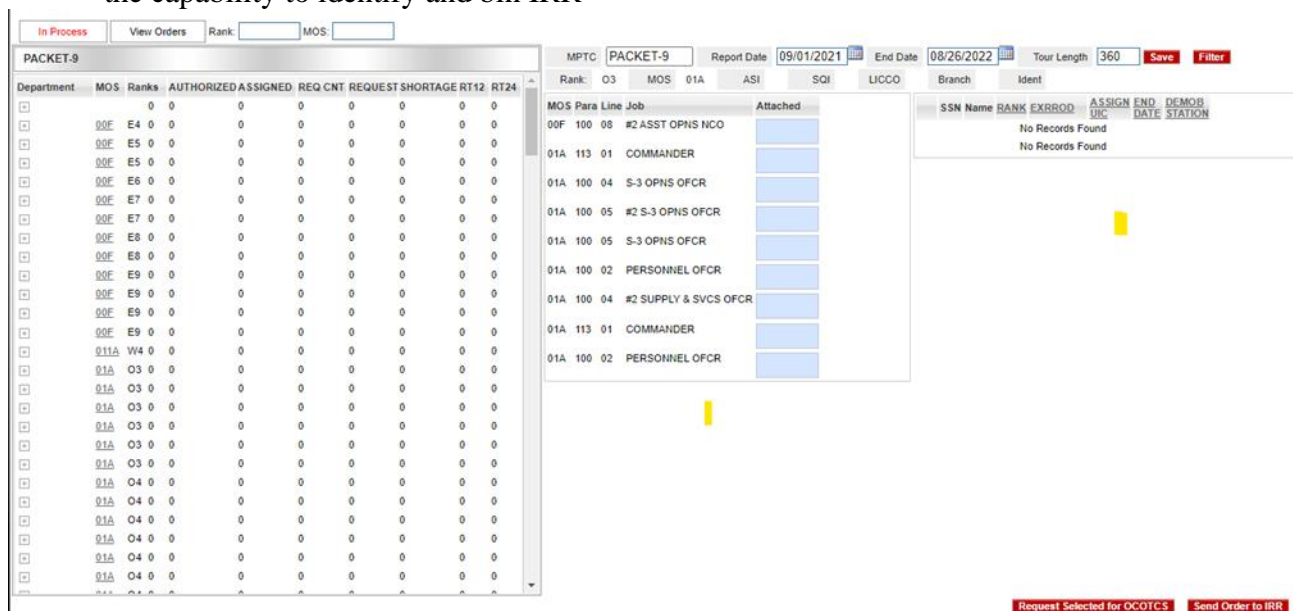


Figure 9. Bulk Requirement Requestor Page

into positions identified in E-Total Officer Personnel Management Information System (eTOPMIS) and Enlisted Distribution and Assignment Systems (EDAS). This would be the last chance for HRC to reduce the total required positions.

Bulk Requirement page (Figure 10) will enable the appropriate Army headquarters to identify PIM anonymously and slot the best candidate for the unfilled requirement passed from IRR

Shortage page on SIPRNet. This page uses exclusion criteria provided by HQDA Deputy Chief of Staff G1 to filter out personnel who cannot be mobilized due to admin concerns, non-deployable criteria, legally non-deployable, medical issues, or a conflict with dates. This page also connects with the Bulk Binning feature (Figure 11) to allow Army personnel to select from pre-identified bins derived from various applied filters.

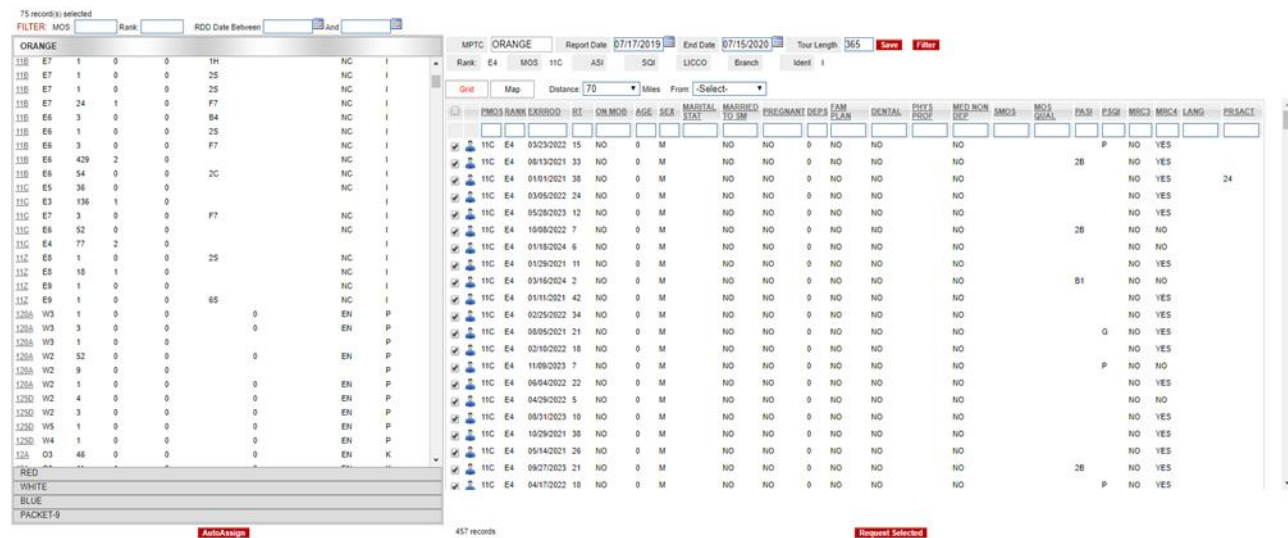


Figure 10. Bulk Requirements Page

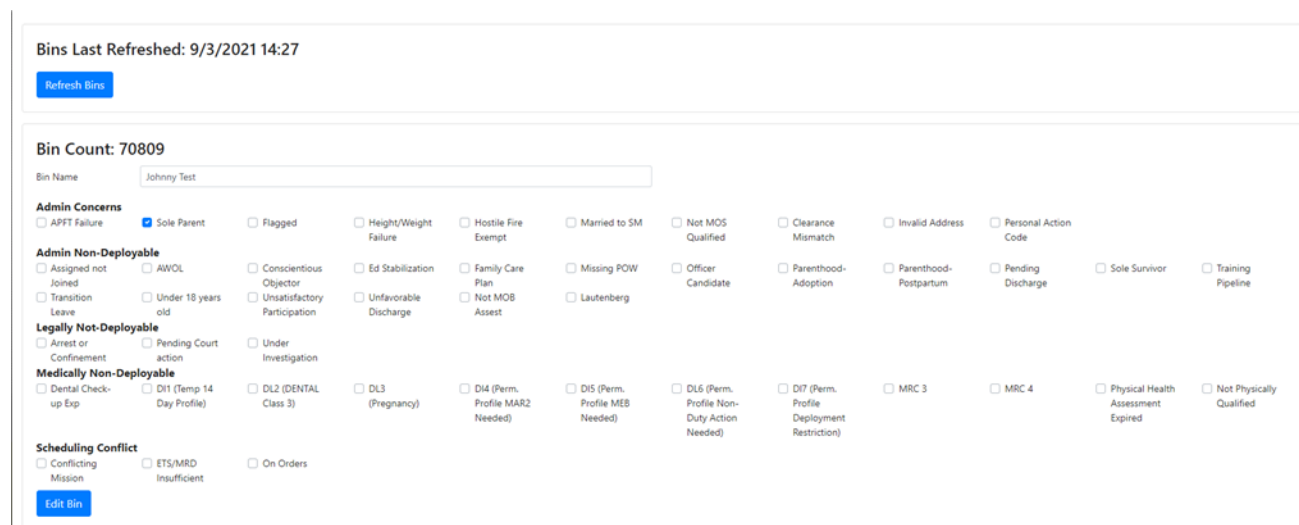


Figure 11. Bulk Binning Feature

Bulk Order Assign page (Figure 12) allows TRADOC personnel to identify resources out of the Army active population and assign them to ATC, Warrior Task and Battle Drills (WTBD), and MOS follow on training based on a time-phased approach. This ensures each ATC and COE gets the adequate personal attendance without exceeding weekly caps. The class load data and ATC/COE information on this page are managed by TRADOC personnel via the ATC MOS Management page (Figure 13) and Class Management page (Figure 14).

Bulk Requestor page (Figure 15) allows the appropriate Army Headquarters to produce orders for the selected resource. Validation on this page will ensure SSN, Rank, Name, Report to UIC/Location, Report Date, and tour length

are visible on all orders generated. Should information be missing, it can be updated individually or against the entire group. This page is also utilized late in the process for amendment and revocations of orders. This page produces orders in bulk, meaning one button click can validate thousands of orders and generate them if no validation errors are found.

The Bulk Generator page is the second set of eyes from the HRC Orders Team before digitally generating orders for the PIM selection. From here, orders are sent via Electronic Service Bus (ESB) to ITAPDB and Integrated Personnel Electronic Records Management Systems (iPERMS).

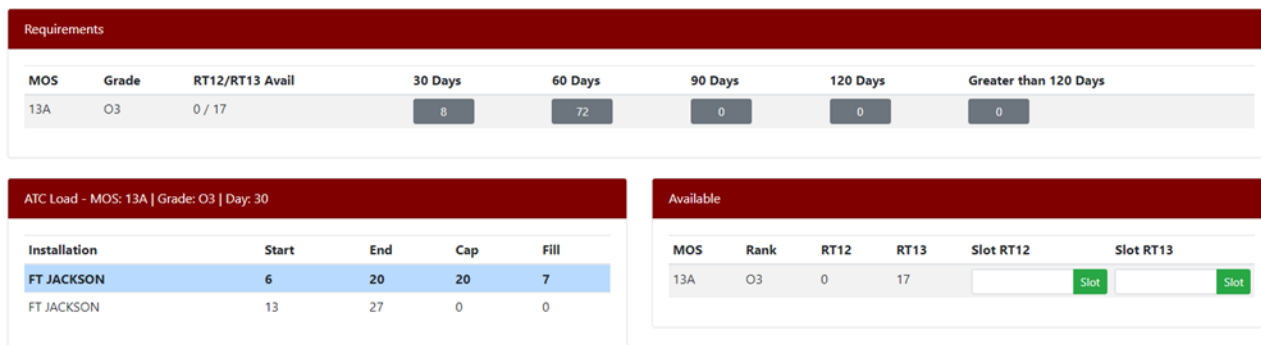


Figure 12. Bulk Order Assign Page

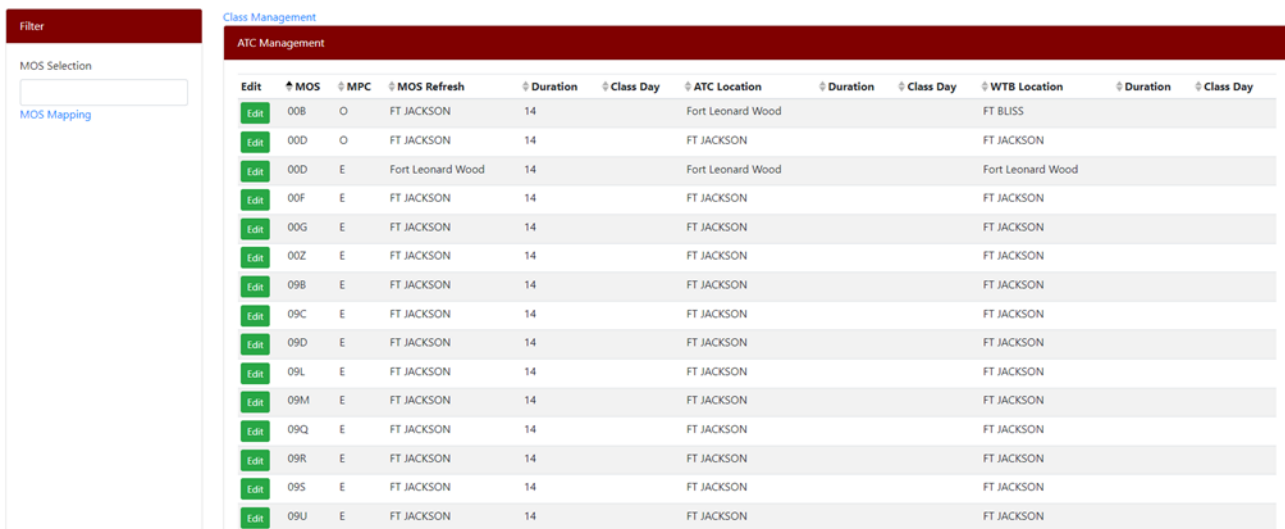


Figure 13. ATC MOS Management Page

The screenshot shows a web interface for class management. On the left, there are filter options for Training Type (ATC, WTBD, Follow On), ATC Selection (FT BLISS), and MOS Selection (00B). Below these are date pickers for 'Date' (9/30/2021) and 'End Date' (9/30/2022), with an 'Execute' button. The main area is titled 'Follow On Training Class Dates' and contains a table with columns: Edit, Mos, Start, End, Min, Cap, Fill, Start Date, and End Date. The table lists 12 rows of training classes, each with an 'Edit' button and specific dates and times.

Figure 14. Class Management Page

The screenshot displays the Bulk Requestor Page. On the left, a 'PACKET-9' table lists requestors with columns for MOS, RANK, REQ CNT, and REQUEST. The main area shows a detailed profile for SSN: 397010503, Name: WYAU DEMOOO R. The profile is divided into 'Personal' and 'OPS' sections. The 'Personal' section includes fields for Sex, Email, Current Org, Clearance Date, Clearance, Personnel Action, Order Format, HIV Test Date, Phys Prof, ETS/MRD, PMOS, Date of Rank, Rank, PEBD, PPN, Basic Branch, PPA, Perm. Address, Perm. Address 2, City/State/Zip, and Country. The 'OPS' section includes Report Date, End Date, Tour Length, Current UIC, Current Aname, Current Address, Curr. City/State/Zip, Report UIC, Report Aname, Report Address, Rpt City/State/Zip, Mission UIC, Mission Aname, Mission Address, Miss City/State/Zip, Tour Type, and VIAS. At the bottom, there are buttons for 'Validate All', 'Request All', 'Update', 'View Draft', and 'Show PDF'.

Figure 15. Bulk Requestor Page

A Moderator page (Figure 16) is a single tracking location to determine the last known location of the resource and to update the status of the resource to the given TRADOC ATC, TRADOC COE locations, and if required, the ability for HRC to mark the system in the event of a resource deferment or exemption.

Depending on permission granted, a person may update the resource's location and track status from orders generation to deploying unit. This also provides the ability for other Army elements like HQDA, FORCCOM, and IMCOM, to track the progress of each resource/requirement.

The screenshot shows the Moderator Page with a table of resource status. The table has columns: SSN, NAME, STATUS, UNIT, ORDER NUM, PMOS, START DT, END DT, TOUR LENGTH, MISSION UIC, and REPORT UIC. The first row shows SSN: 339299246, NAME: PKBLAH DEMOY N, STATUS: Awaiting Arrival, UNIT: 2-1246-10010, PMOS: 13A, START DT: 03/15/2021, END DT: 03/29/2021, TOUR LENGTH: 0, MISSION UIC: 261CZZ. The page includes a search bar, a 'Show 25 entries' dropdown, and navigation buttons for 'Previous' and 'Next'.

Figure 16. Moderator Page

Once a resource has completed training requirements and is marked as available, the Bulk Available Soldier page (Figure 17) will allow the appropriate headquarters to attach the resource to the unit requiring the fill and send the order for amendment. This delayed approach to assigning the resource to the unit will ensure fewer erroneous orders due to resources not showing up for duty, not being physically fit for

duty, or not passing MOS refresh training. In short, the resource is not married to the unit until identified as a viable resource. This step is also the point in the process the resources can obtain an IMCOM TCS order via the PIM Requestor page (Figure 18) in the Department of the Army Mobilization Processing System – Overseas Contingency Operations Temporary Change of System (DAMPS-OCOTCS).

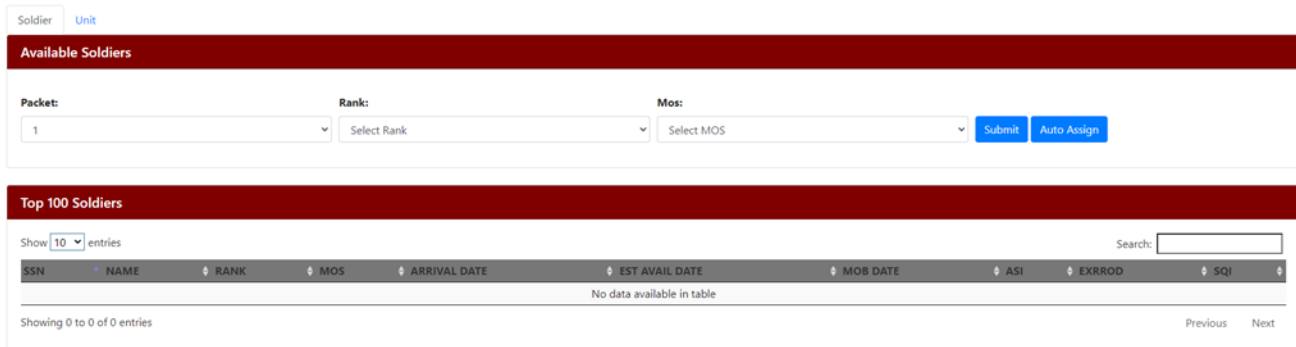


Figure 17. Bulk Available Soldiers Page

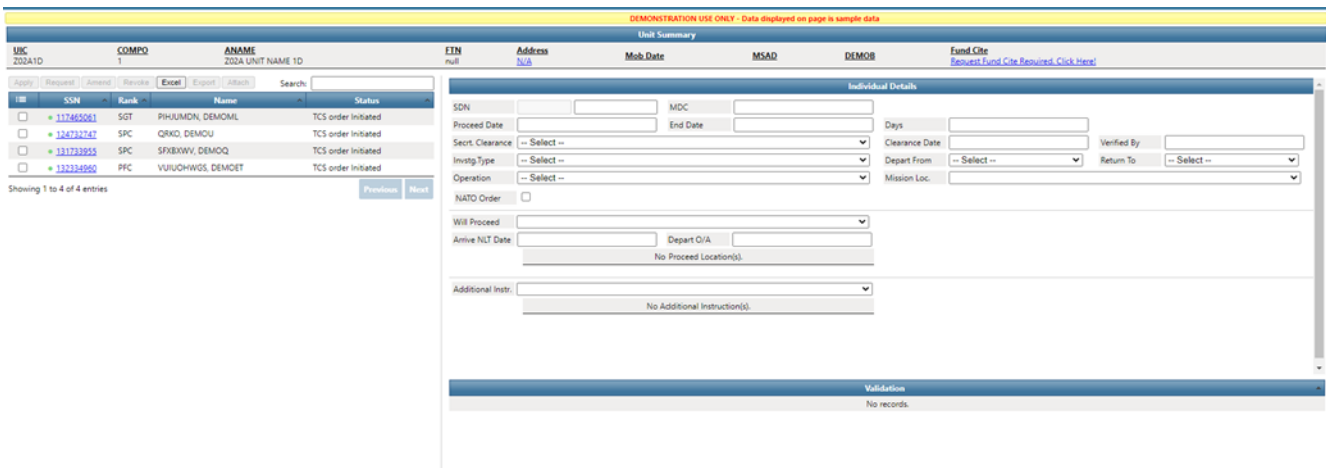


Figure 18. PIM Requestor Page

To accommodate the Bulk Muster requirement, the Muster Army Reserve Careers Division (ARCD) (Figure 19), Muster Requirement (Figure 20), Muster Requestor (Figures 21 – 22), and Muster Generator (Figures 23 – 24) pages were created. Each page breaks the required workflow into chunks.

The Muster ARCD page allows the Muster Point of Contact (POC) information to be

updated before being placed on the order. Validation was put in place, requiring a review of each POC before orders generation.

The Bulk Requirement page allows HRC to identify resources for muster by appropriate filters as well as the distance to muster location.

The Bulk Requestor page allows HRC personal to mass validate each order for missing data

before base order generation. In addition, this page can be used for amendment and revocation if it is required.

The Bulk Generator page is the last set of eyes before generating and sending the order to the required interfaces.

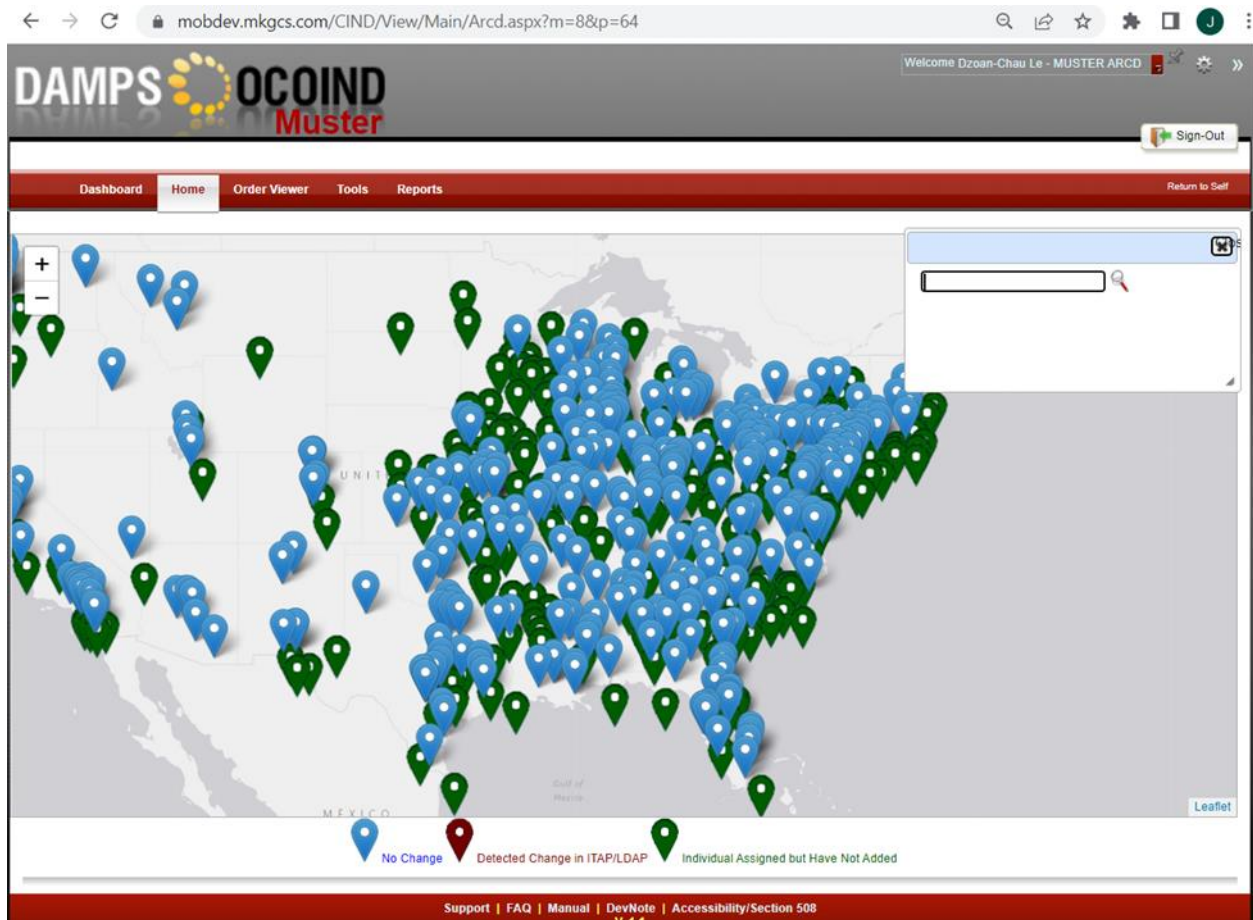


Figure 19. Muster Army Reserve Careers Division Page

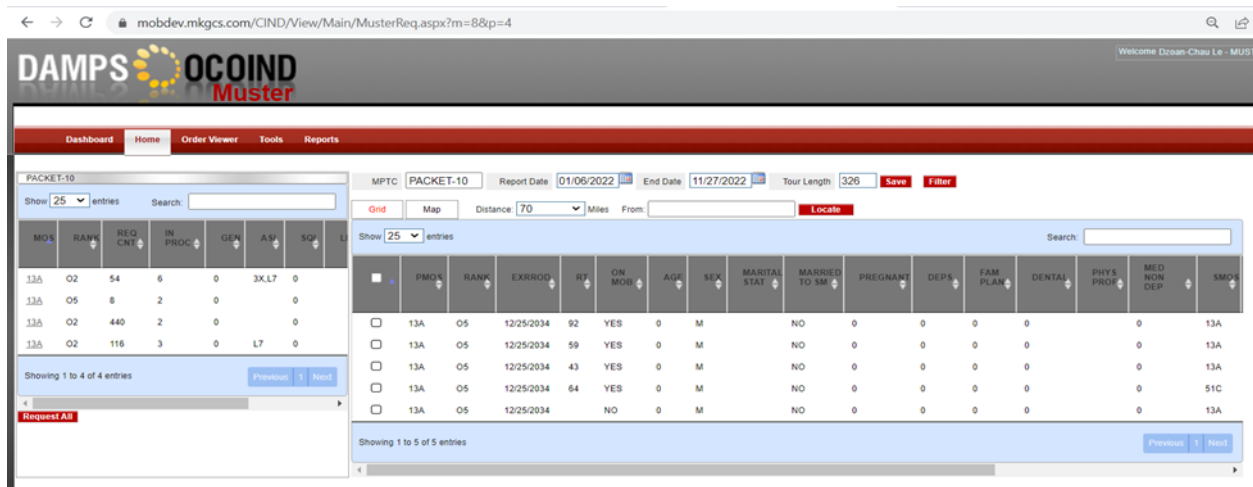


Figure 20. Muster Requirements Page

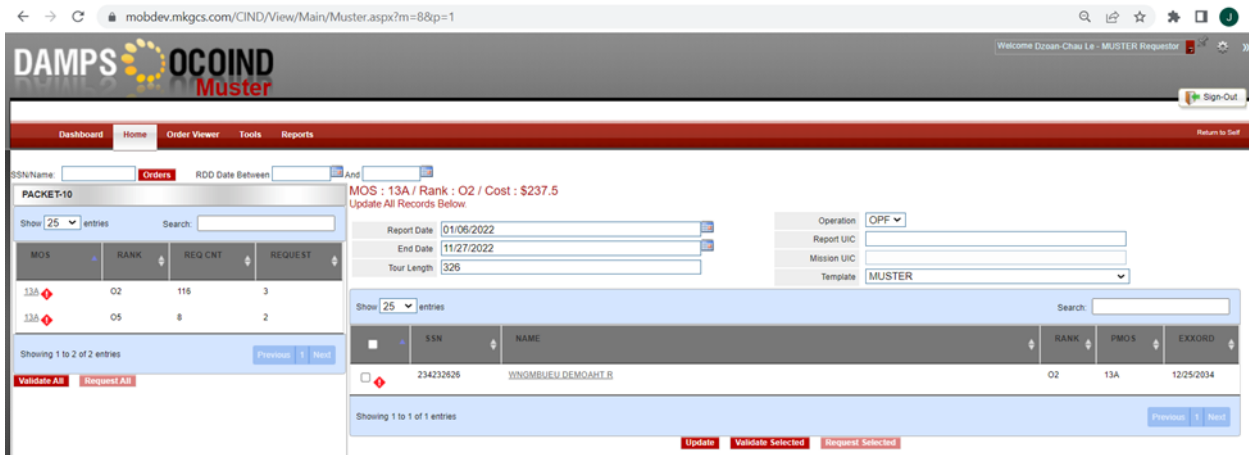


Figure 21. Muster Requestor Page

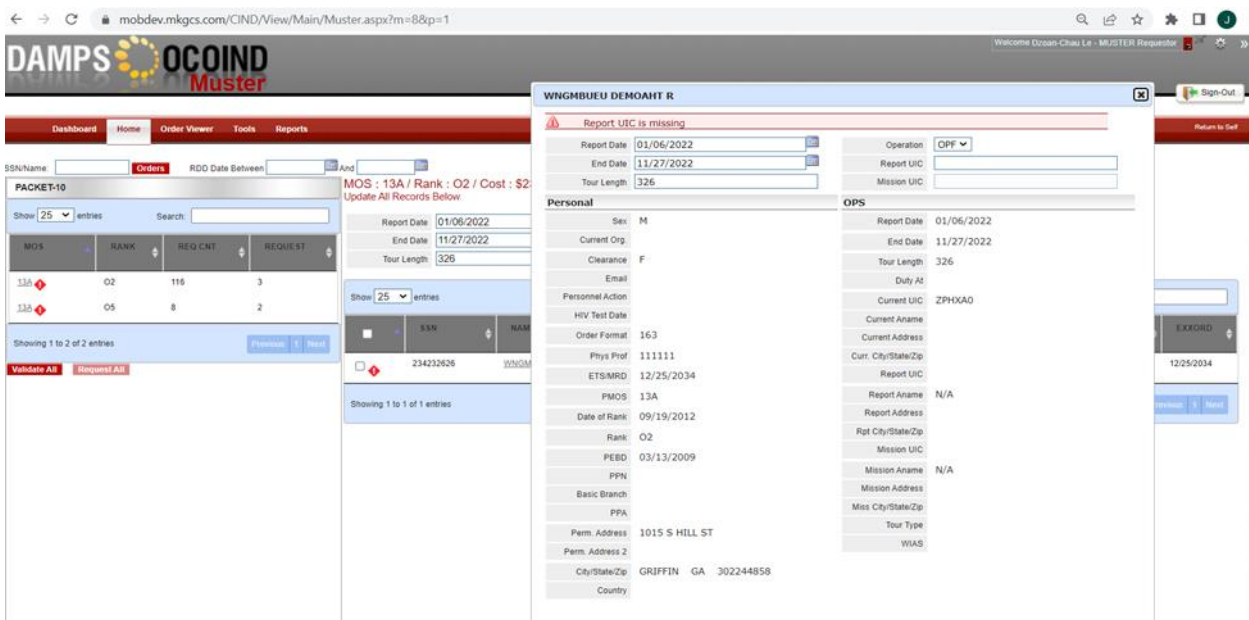


Figure 22. Muster Requestor Page – Soldier Information

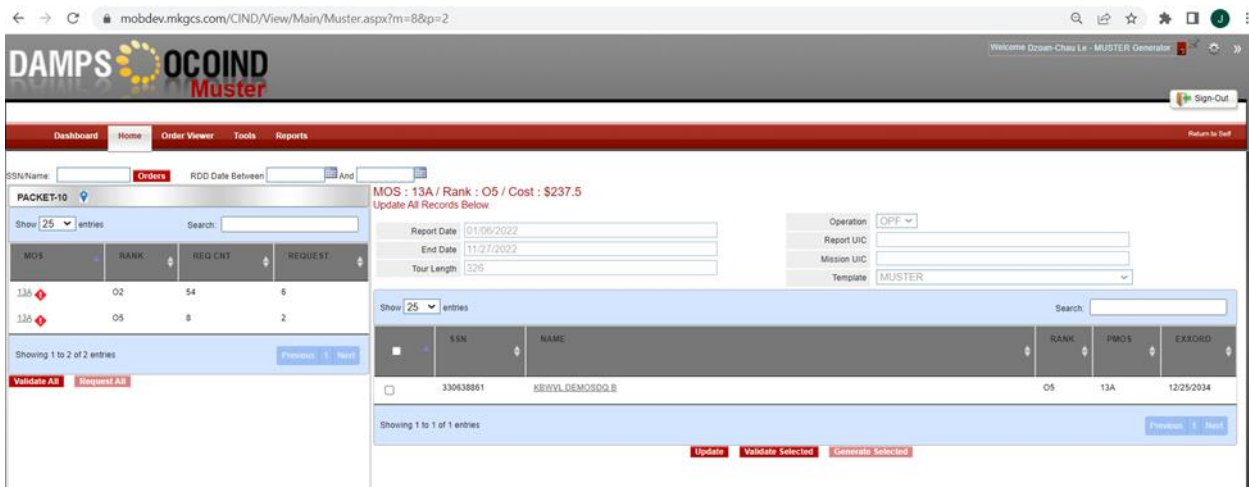


Figure 23. Muster Generator Page

mobdev.mkgcs.com/CIND/View/Main/Muster.aspx?m=88p=2

DAMPS **OCOIND**
Muster

Dashboard Home Order Viewer Tools Reports

SSN Name: Orders RDO Date Between: And

PACKET-10

Show 25 entries

| MOS | RANK | REQ CNT | REQUEST |
|-----|------|---------|---------|
| 13A | O2 | 54 | 6 |
| 13A | O5 | 8 | 2 |

MOS : 13A / Rank : O5 / Cost
Update All Records Below

Report Date: 01/06/2022
End Date: 11/27/2022
Tour Length: 326

SSN: 330838861

Showing 1 to 1 of 1 entries

KBWVL DEMOSDQ B

Report Date: 01/06/2022
End Date: 11/27/2022
Tour Length: 326

Operation: OFF
Report UIC: Z79UAAA
Mission UIC: Z79UAAA

Personal

Sex: M
Current Org: A
Clearance: A
Email:
Personnel Action:
HV Test Date:
Order Format: 260
Phys Prof: 111111
ETS/MRD: 12/25/2034
PMOS: 13A
Date of Rank: 10/18/2019
Rank: O5
PEBD: 08/23/2001
PPN:
Basic Branch:
PPA:
Perm. Address:
Perm. Address 2:
City/State/Zip:
Country: JA

OPS

Report Date: 01/06/2022
End Date: 11/27/2022
Tour Length: 326
Duty At:
Current UIC:
Current Aname:
Current Address:
Cur. City/State/Zip:
Report UIC: Z79UAAA
Report Aname: Z79U UNIT NAME AA
Report Address: 1402 E CARROLL ST
Rot City/State/Zip: TULLAHOMA TN 373880190
Mission UIC:
Mission Aname:
Mission Address:
Miss City/State/Zip:
Tour Type:
WAS

Return to Self

Sign-Out

12/25/2034

Showing 1 to 2 of 2 entries

Showing 1 to 1 of 1 entries

Figure 24. Muster Generator Page – Soldier Information

4. Conclusions

Through this Phase I & II Total Army Operational Mobilization – Replacements Integration, Sustainment, and Synchronization project, the project partners and stakeholders established the following findings and deliverables:

- Utilizing the established government data architecture and industry partner subject matter expertise, the team enabled rapid development of new, complex resource synchronization technology.
- Based on a thorough analysis of the PIM process, the team created software functions to automate key steps in the process.
- Creating new technology utilizing the MOBCOP “Big Data” platform resulted in substantial time to delivery reduction and cost avoidance.
- The data elements required to automate IRR functions existed within the MOBCOP and MARRS government platforms.
- The team successfully developed algorithms to undertake the complex load balancing and synchronization required to ensure effective allocation of IRR resources to meet contingency operations.
- The newly developed IRR technology was successfully transferred into the existing government toolset. Automation of the entire IRR process through this and subsequent project phases will result in substantive improvements in deploying and sustaining a viable Total Army force.
- Automation of the entire IRR process will result in substantial improvements in efficiency and speed of execution and will eliminate error-prone manual processes, significantly improving Total Army readiness.
- The knowledge gained and software functions created will benefit the DOD significantly and are transferrable to the private sector, where the ability to undertake complex load balancing and asset synchronization will result in substantial efficiency gains.
- Based on these findings, the project stakeholders proceeded with the implementation of this core set of new resource synchronization technologies.

5. Project Benefits

This initiative resulted in the following overall benefits.

- Creation of new, complex resource synchronization technology, which significantly improves overall Total Army contingency planning and readiness.
- The use of industry partner subject matter expertise, existing government software tools combined with rapid prototyping, and development techniques resulted in a minimum of \$13M in cost avoidance when compared to creating a new, stand-alone enterprise solution.
- Improvements made in an organization's visibility of resource constraints earlier in the planning cycle, enabling appropriate action to be taken to mitigate these situations.
- Reduced cost of service delivery which can be passed on directly to the consumer, as a result of industrial efficiencies in resource utilization.
- Reduction in wait times for service delivery as a result of improved industrial resource utilization planning.
- Improved quality of service delivery as a result of the correct resource with the required attributes available at the correct time to perform the service.
- Increased availability of required services as a result of more effective industrial resource planning and utilization.

5.1 Benefits to Industry and the General Public

Timely and efficient resource allocation matching the requirements of the organization will lead to significant business efficiencies in areas such as:

- The reduction of operational costs was derived from more efficient resource utilization.
- Resources with the required skillset matched effectively to the business requirement, reducing ongoing operational costs.
- Significant improvements in timeliness – a great example of this would be the time-phase approach to have the appropriate resource at the right place at the right time.
- Agility, enabling the organization to react effectively to changing business circumstances; for example, during peak demand times, there were documented wait times resulting in an unsatisfactory review of the process. The ability to change inventory requests based on storage capabilities and needs results in fewer wait times.
- Improvements in customer satisfaction are derived from the more efficient delivery of services.
- Improvements in the government's ability to respond more effectively to national emergencies due to improved readiness and resource utilization.

5.2 Benefits to DOD

- Rapid activation and integration of the Army PIM pool capability in the event of a large-scale contingency operation.
- The readiness of the Total Army at any point in time to respond effectively to multiple scenarios is significantly enhanced through effective critical resource synchronization.
- The time taken to respond to changing global circumstances is reduced significantly, improving the speed of

execution and preparedness as a result of automated resource synchronization capability.

- Rapid mobilization, training, and integration of a critical resource pool, the PIM, in times of war, contingency, or national emergency.
- The ability to utilize existing government solutions that are fully deployed and in use by the Army today significantly reduces the time needed to provide this critical capability as a result of PIM process automation.
- Utilizing the existing MOBCOP platform significantly reduces the time

taken and the cost of training as the platform is widely deployed and in use today by the Army.

- National security is improved as a result of significant improvements in Total Army readiness to meet ever-changing global circumstances.
- Overall, because of this project, the DOD, private industry, and general public will realize significant benefits from the adoption of the automated resource synchronization capabilities.

6. Recommendations

Based on the successful completion of Phases I & II of the Total Army Operational Mobilization – Replacement Integration, Sustainment, and Synchronization project, the project partners make the following recommendations:

- A method should be produced to evaluate the data provided on each PIM. The current data set provided lacks accuracy depending on the amount of time since last active-duty segment. The team does not believe this will be addressed in the Army’s current efforts to migrate to the Integrated Personnel and Pay System – Army (IPPSA), the Army’s online human resources solution, but it should be of greater focus.
- TRICARE, both enclosure 8 and 9, should be leveraged during this portion of the process. With the current Army focus being on accurate and timely TRICARE management, this should be extended to the PIM population at the same time.
- A bilateral interface should be established between the Army’s current delays and exemptions application to prevent the manual input required in the current process.
- With current Army modernization being moved toward the cloud environment this process should move with it.
- A Phase III project should be launched for the deployment of PID for non-TPFDD requirements. World events like coronavirus could have leveraged this process better outside of TPFDD requirements.
- Reenergizing the Army National Guard (ARNG) and U.S. Army Reserve (USAR) leadership in the implementation and utilization of MARRS to manage Army Reserve Mission Force (ARMF) is the best way to inform this process. A centralized visual report could be produced to inform all stakeholders of potential shortfalls.
- Leverage Soldier Readiness Processing (SRP) data to identify unfulfilled positions at mobilization station that can be filled by PIM based on current exclusion criteria provided by HQDA G1 and distance to mobilization station.
- Interface with DOD to ensure that utilization of a PIM cannot produce shortfalls in other DOD entities.
- Interface with Medical Planner Toolkit to better inform the mobilization process on what the potential PIM requirements may be by Rank and MOS.
- A tool should be created to perform analysis of Army plans based on current PIM, ARNG, and USAR personal data to better inform leadership of the potential outcomes based on when decisions are made and the current deployment rate of the PIM population. Each possible scenario should be investigated.
- The application software should be modified to inform MARRS SRP when PIM has been identified and will attend SRP with the unit.