

Automated Efficiency for Technical Security Spare Parts

SPONSORING ORGANIZATION

U.S. Department of State Bureau of Diplomatic Security

CHALLENGE

Logistics Specialists within Diplomatic Security need an automated inventory management system that integrates with their systems of record (CMMS) in order to more efficiently address equipment disposition, reduce cumbersome manual processes, and ensure that Security Technology maintains a minimum but viable number of spare parts.

CHALLENGE SKILLSETS

Engineering (Software, Process and Automation), Computer Science, Data Analytics, Business Intelligence, Enterprise Resource Planning Systems, Supply Chain Management, Logistics, Security and Compliance, Policy, Information Technology Infrastructure, Project Management

RELEVANT CONTEXT

- Technical Security Systems (TSS) equipment used to protect personnel, property, and information at U.S. diplomatic facilities around the world has a finite lifecycle (around 10 years of use), which can be shortened or extended depending on a variety of factors (e.g., system reliability, environmental factors and engineering tolerances, and market forces).
- As older systems reach their end of life, not every instance can be replaced immediately due to economic and resource limitations. Logistic specialists based domestically and overseas must balance the number of spare parts on hand, and available within the global inventory system, with the number of active instances of a system being used. Space constraints and the logistical burdens require that they minimize the number of spares on hand, which is continually changing as new systems replace old systems.
- As TSS equipment reaches an end of life (determined by the manufacturer), the availability of spare parts becomes increasingly limited and damaged systems may be required to be repaired and re-fielded. Logistics specialists overseas need to understand whether to return spare units and damaged equipment for repair or dispose of it locally. Domestic inventory management specialists and repair center personnel need to understand how many systems deployed worldwide might need spare parts and whether a damaged part being returned is economically and physically viable to repair.
- As the numbers of systems installed overseas change due to equipment upgrades and new facilities being constructed, the needs for spare parts are changing as well. A dynamic algorithm is needed to help predict current and future spare parts needs which will help guide logistics specialists on the disposition of equipment under their care. In addition, the algorithm should help identify situations when it is becoming no longer viable to maintain a system due to economic or parts availability factors. This will help focus the development and evaluation process to bring new systems online ahead of reaching a critical point.



IMPACT

Solving this problem would provide logistics specialists within Diplomatic Security with an intuitive process to determine how to address equipment disposition and ensure that Security Technology maintains a minimum, but viable, number of spare parts available to ensure system reliability and viability. There would be an immediate economic impact by reducing unnecessary shipments of equipment as well as space needed to store excessive amounts of spare parts. Long term impacts would include reducing the number of repairs made to equipment that is not needed, and the ability to better plan for and implement system replacement at end-of-life required by a shortage in spare parts.

POTENTIAL BENEFICIARIES

Logisticians, Security Engineering Officers (SEOs), Security Technical Specialists (STs), Navy Seabees, Repair Maintenance Center (RMC) Personnel

RESOURCES *(Must review with sponsor, uses internal DoS servers)*

1. [FSB SharePoint Site](#)
2. [Repair Maintenance Center \(RMC\) SOP Workflow](#)

PROBLEM SPONSOR

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CLEARED CONTACTS (*PENDING as of Aug 27*)