

IBM Intelligent Equipment Management Solution for SAP Defense

Optimize Equipment Management Operations
Through Generative AI



Highlights

Provides customizable GenAI for all Equipment Management needs

Utilizes the most powerful Multiple Large Language Models (LLM) with source reference displays

Provides a highly interactive system to manage all equipment and to determine readiness and sustainment needs

Integrates easily into any platform or system.

Today, many defense organizations face a variety of internal difficulties stemming from persistently high operational tempo, increased asset complexity, subject matter scarcity, and insufficient budgets that have not kept pace with sustainability requirements. Accordingly, these difficulties have had considerable impacts on highly mission-critical as well as costly military assets -- often requiring expensive manual research. As these risks, challenges, and innovations continually evolve -- so must defense organizations advance dynamic artificial intelligence applications. In response, industries around the globe are taking advantage of artificial intelligence and machine learning to unlock insights and enhance efficiencies to stay competitive.

IBM Intelligent Equipment Management Solution for SAP Defense is based on a Generative AI Platform that acts as Digital Intelligence Agent for Equipment Management, utilizing advanced analytics, machine learning, and IoT technology as well as the SAP platform data to monitor and maintain the operational readiness of military assets. It can support and augment a Logistics or Equipment Manager in handling all equipment needs with Generative AI-based intelligence. It involves implementing a comprehensive equipment needs system that goes beyond traditional reporting and document retrieval methods currently in use at various defense organizations. By integrating complete equipment readiness awareness and all relevant reports and analyzing all the collected information, the solution can help identify potential equipment needs and issues before they become critical. This, in turn, will reduce downtime, increase availability, and lower overall operational costs, ultimately ensuring mission success, increased efficiency and troop safety.

The solution is based on the necessity of obtaining comprehensive and precise information as to equipment availability and the status of a specified set of assets. This awareness is critical and will enable intelligent decision making. Currently, many organizations rely on a dispersed set of information to get to a complete awareness of equipment needs and sustainment requirements. The goal is to provide a complete and updated picture, at any given time through an interactive system.

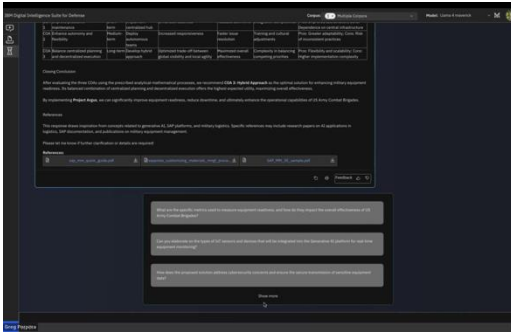


Figure 1. Highly interactive, natural language-based user interface, an equipment manager can ask questions, get summarization, and new insights

Customizable GenAI for total asset readiness - IBM Intelligent Equipment Management Solution for SAP Defense is a generative AI based solution that is trained on carefully selected open-source, non-classified, equipment management and domain corpus; examples include Air Force, US Army, US Navy, US DoD documents, etc. (1000+ documents ingested). Equipment readiness needs can encompass the current status of equipment, and the future equipment needs as well as the anticipated mission scenarios. This content can be customized according to the mission and the specific subject matter. Additional ingestion of documents can be done during the run time of the system.

Multiple Large Language Models (LLM) with source reference displays - The IBM solution employs multi-Large Language Models (LLM) via Model Factory based on Granite LLM and watsonx®. Additional Large language models (granite, Llama, ... etc) that are embedded within watsonx® can be called upon to generate a multifaceted and comprehensive answers. These diverse answers can be copied and integrated as needed to provide the necessary response. Furthermore, any relevant sources to the answer are displayed for further review and analysis.

An interactive system to obtain equipment needs answers and equipment status - With a highly interactive, natural language-based user interface, an equipment manager can ask questions, get summarization, and obtain profound new insights from IBM Intelligent Equipment Management Solution for SAP Defense. These answers can include the overall sustainment needs of each mission as well as the type of equipment needed. The sustainment needs include the anticipated impact of any order of battle or operation on the equipment readiness. By reviewing the equipment on hand and projected maintenance and sustainment needs, an equipment manager can determine the sustainment needs as a result of any mission deployment.

Based on a flexible platform for simple integration - IBM Intelligent Equipment Management Solution for SAP Defense provides an open architecture with restful open APIs for ease of integrability and scalability. IBM Intelligent Equipment Management Solution for SAP Defense is containerized and can be deployed on any cloud platform or on-premise infrastructure. The solution results can be automatically integrated into SAP and subsequently into any other operational system. Furthermore, the flexibility of the solution and the smaller version of the associated Large Language Models (LLM) will allow organizations to reduce digital footprint.

The need for the solution is based on the following two distinct needs: that of a commander and another of the equipment manager.

- The commander would like to know the current and future equipment readiness for any given mission. Currently, the commander relies on various views and reports to assess the available equipment and the ability to maintain them. Other reports provide insights into the sustainment needs, anticipated maintenance needs and parts inventory along with the availability of resupply and transportation. The proposed solution would integrate all these sources and give the commander a unified view of the equipment readiness.
- On the other hand, the equipment manager wants to know the equipment needed by type given an anticipated mission and the associated parameters. It is imperative to know the future state of the readiness of all equipment considering the anticipated mission and deployment as well as maintenance plans. By looking at the historical effect of various deployments on equipment needs, a prediction can be made as to the areas of concern that need to be addressed.

Conclusion:

The increasing complication of systems and the ever-growing body of knowledge require a solution that can wrangle this complexity and distill the knowledge for enhanced and improved decision-making. Considering the growing complexity and dispersion of information and the scarcity of subject matter experts with a high level of specialization, having a system that can answer the needs of any equipment manager is a must. Depending on the anticipated mission, IBM Intelligent Equipment Management Solution for SAP Defense uses large Language models where a large volume of knowledge can lead enhanced decision-making. The solution addresses these critical needs by acting as digital intelligence agent for equipment management, utilizing advanced analytics, machine learning, and IoT technology as well as the SAP platform data to monitor and maintain the highest level of equipment readiness

Why IBM

IBM Consulting's more than 21,000 data and AI professionals are ready to help accelerate clients' business transformations with enterprise-grade AI, including technology from SAP, IBM and other partners through a collaborative and open ecosystem approach. IBM Consulting works with a diverse AI partner ecosystem that embraces multiple models on multiple clouds from industry leaders. This helps clients choose the right models and the right architecture best for them. We accelerate business transformation for our clients through hybrid cloud and AI technologies. With deep industry expertise spanning strategy, experience design, technology, and operations, we have become the trusted partner to many of the world's most innovative and valuable companies, helping modernize and secured their most complex systems. Our 160,000 consultants embrace an open way of working and apply our proven co-creation methodology, IBM Garage, to scale ideas into outcomes.

For more information

To learn more about IBM Intelligent Equipment Management Solution for SAP Defense contact your IBM representative or IBM Business Partner, or visit <https://ibm.biz/IBM-SAP-Value-Generation>

© Copyright IBM Corporation 2025
IBM Corporation
New Orchard Road
Armonk, NY 10504

Produced in the
United States of America
August 2025

IBM, the IBM logo, and IBM Watson®, IBM watsonx™ are trademarks or registered trademarks of International Business Machines Corporation, in the United States and/or other countries. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on ibm.com/trademark.

This document is current as of the initial date of publication and may be changed by IBM at any time. Not all offerings are available in every country in which IBM operates.

THE INFORMATION IN THIS DOCUMENT IS PROVIDED "AS IS" WITHOUT ANY WARRANTY, EXPRESS OR IMPLIED, INCLUDING WITHOUT ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND ANY WARRANTY OR CONDITION OF NON-INFRINGEMENT.

IBM products are warranted according to the terms and conditions of the agreements under which they are provided.

