

# Operational Energy Impact Analysis on Mission and Sustainment Effectiveness

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## With Mr. Brian Ernst

Project Manager, Joint Operational Energy Initiative (JOEI), TARDEC

### Abstract:

The Operational Energy (OE) Analysis Task Force (OEATF) was initiated in 2012 to establish a foundational OE analytic capability leading to an OE analysis architecture capable of informing Army decisions related to OE impacts on organization, materiel, and/or operations. The OEATF leveraged existing Army analytic methods, models, and tools (MMT) to develop this OE foundational analytic capability and leverages extensive Army analytic community experience to assess impacts that changes to equipment, organizational structure and/or doctrine have on operational energy requirements and their subsequent impact to sustainment and mission effectiveness. These presentations will provide information on the OEATF, its OE modeling and simulation (M&S) capabilities and the application of those capabilities in support of Army acquisition and modernization.



Mr. Brian Ernst

### Biography:

Mr. Ernst has been the Project Manager for the Joint Operational Energy Initiative (JOEI) since 2013 under Tank Automotive Research, Development and Engineering Center's (TARDEC) Emerging Capabilities Office (ECO). In this position he developed an operational analysis capability that supports S&T investment, acquisition, and requirements development decisions by quantifying 2nd and 3rd order impacts of materiel/non-materiel changes. In this capacity, he also serves as one of the co-leads for the Operational Energy Analysis Task Force (OEATF).

Mr. Ernst's prior assignments include Lead Systems Engineer for the JOEI concept when it began under Program Executive Office Combat Service and Combat Service Support (PEO CS&CSS). He was the key technical force behind the realization of modeling an area of operations as a large system-of-systems. Mr. Ernst was hired into to U.S. Army as a civilian in 2009 as a Systems Engineer in support of the Joint Program Office, Mine Resistant Ambush Protected (JPO MRAP) program office. In this role his key responsibility was managing and executing the Requirements Management Process which identified capability gaps and/or theater needs of fielded platforms, captured solutions, associated costs, schedule, and prioritized the list of upgrades required for the entire MRAP Fleet of vehicles (accounting for ~\$3B annually).

Mr. Ernst's earlier assignments were within the automotive industry working for ZF. Here he began his career as a Manufacturing Engineer launching new robotic manufacturing work cells and developing new and innovative processes. He was then promoted to a key Program Manager (corporate) launching multiple product lines in 3 different countries, in 5 different plants, for varying key OEM customers. Mr. Ernst has a bachelor's degree in mechanical engineering from Kettering University (formerly GMI) and a master's degree in Program Management from the Naval Postgraduate School.



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