

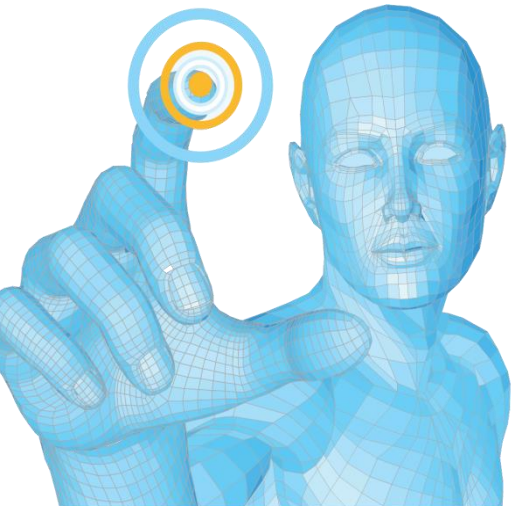
Vibration and Shock spectrum study for Defense Communication Unit

About the Client

The client is one of the premier Defense Electronics Design and Manufacturing organizations.



Read more online at
www.depusa.com



The Challenge

The client called for a detailed virtual validation build of the complex communication rack considering the MIL standard vibration and shock requirements. The investigation included coming up with structural countermeasures, including mounts and their configurations that would safeguard the operations of all critical internal electronic units that form the communication.

The Solution

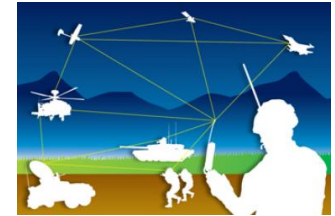
MeshWorks along with state of the art engineering tools from DEP was used to build a detailed virtual validation model of the entire communication system. DEP's team considered all critical electronics to be lumped into mass & shell model at

printed circuit board level. The detailed model of the communication rack frame included capturing all the bolted joints, gussets and slider mechanisms. Data connection points were modeled in a precise method so that we could evaluate the loads at those critical points during the excitation as per MIL standard.

The communication rack had a certain set of mounts that were being planned for vibration and shock load isolation purposes. The DEP team investigated the effect of various mounts and laid out their merits and demerits through virtual validation, which otherwise would have demanded prototype based time consuming and costly physical tests. Virtual validation model created from best practices

provided a platform to study various "what if" scenarios and the product moved to physical testing phase, providing options to find countermeasures.

Tactical Communication System – Generic Illustration



The Result

DEP team expertise and domain knowledge helped customer realize the benefit that virtual validation would bring to table to reduce testing cost and time, study more "what if" scenarios and gain more insight into structural performance.