

SECTOR:
AEROSPACE SYSTEMS

OFFERINGS:
ENGINEERING SIMULATION
SERVICES

TECHNOLOGY:
STRUCTURES

STRUCTURAL ANALYSIS OF LRU INSTALLATIONS ON MILITARY HELICOPTER

Our customer is one of the pioneering companies in the space for Maintenance Repair and Operations for Civil and Military Aircraft and their modification to suit selective missions or requirements. They were required to install an external payload in the belly of the helicopter. Since the installation is external and significant in size, the customer wished to engage Zeus Numerix to undertake Structural Analysis due to aerodynamics and vibration loads. The study reports were to be submitted to CEMILAC for Certification of installation of payload.

Zeus Numerix carried out static FEM analysis in Ansys® Mechanical against inertial loads in all the six directions. Modal Analysis was also carried out to find the natural frequency of the mounting arrangement. The static analysis also extended to calculations for fasteners to ascertain if the choice of fastener was correct. Zeus also performed buckling analysis to check the safety of LRU's under buckling loads. In all the cases, aerodynamic loads were added to the simulations. Two more LRUs that were mounted internally were simulated and detailed reports were submitted.

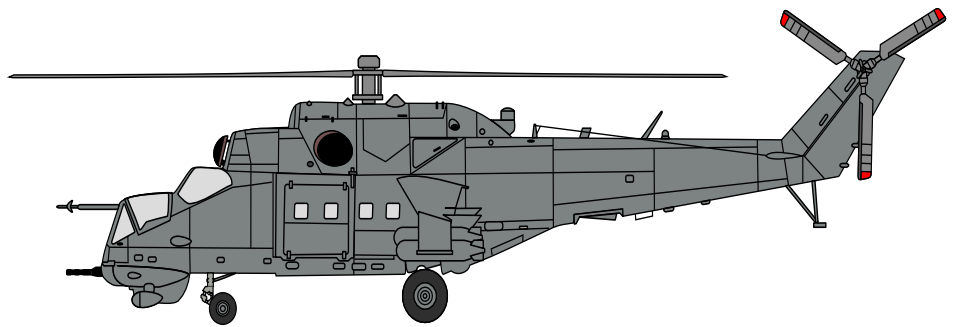


Figure 1: Generic image of helicopter with external and internal LRUs

The customer was provided with the structural analysis reports for each LRU. The analysis reports proved that the LRUs were safe for installation on the helicopter. Zeus Numerix also provided the customer with certain structural modifications in all the LRUs to reduce weight. At present all the LRUs are successfully installed on the helicopter and are working safely.