

RAPID DESIGN OF FABRICATED STRUCTURES



Challenge

PLM Hive takes on engineering design projects across a range of industries incl. defence, water, mining & automotive. A recent project required detailed design optimisation of a mobile working platform used in aircraft maintenance. The existing steel structure in use was heavy and required regular scheduled corrosion protection repairs, so a new aluminium structural frame was developed as a replacement. Conflicting requirements, including assessment of economic viability, required careful design optimisation in a very short time frame.

Solution

Ansys Workbench and SpaceClaim were used to rapidly consider several design concepts involving changes of geometry, beam sections, plate thickness, variable loads. The resulting design was **45% lighter than the previous design** and now provides a corrosion resistant structure that is suitable for outdoor storage and **meets the complex requirements of Australian Standard AS 1657**.

ANSYS Advantage

“Comparison of our results from Ansys with procedural calculation from Australian Standard for structural aluminium AS 1664 created a need for a non-linear buckling investigation of one particular joint and several members. The streamlined workflow allowed for quick design experimentation and the **powerful non-linear capability in Ansys** allowed for precise identification of critical buckling loads. ”

Simo Saletic, CPEng, Managing Director, PLM HIVE

