

## **Correlation of numerical and experimental analysis for dynamic behaviour of a body-in-white (BIW) structure**

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In order to determine the reliability of data gathered using computational version of finite element analysis, experimental data is often used for validation. In case of finite element analysis, it can sometimes be considered as inaccurate especially when subjected to complex and large structure such as body-in-white. This is due to difficulties that might occur in modelling of joints, boundary conditions and damping of the structure. In this study, a process of comparison and validation of model based test design with modal testing results was conducted. Modal properties (natural frequencies, mode shapes, and damping ratio) of a body-in-white (BIW) structure were determined using both experimental modal analysis (EMA) and finite element analysis (FEA). Correlation of both sets of data was performed for validation. It appeared that there was significant value of error between those two sets of data. The discrepancies that appear after correlation was then reduced by performing model updating procedure. The results presented here may demonstrate the effectiveness of model updating technique on improving the complex structure such as BIW structure.