



RLW NAVIGATOR PROJECT

Fixture Layout Analyser & Optimiser



Benefits

- Improved interaction between product and process engineering
- Reduced engineering implementation cost
- Reduced fixture design time and engineering design changes
- Reduction of installation, commissioning and launch time
- Improved strength and dimensional quality of assemblies

Summary

The tool offers the possibility to evaluate and optimise product performances for given joint layout and to optimise clamp layout for given joint requirements (i.e., max gap per stitch). Tool's integration capabilities are: (i) optimised product design loop to generate a feasible assembly process; (ii) optimum locator/clamp layout; (iii) joining process parameters' loop; (iv) work-station optimisation loop with robot simulation and path planning.

The Fixture Layout Analyser & Optimiser can be used as interactive/collaborative framework among process and product design engineers. The developed GUI offers interactive tools to facilitate user's data input and visualisation of results

Features

- *Variation Simulation Analysis* for deformable parts
- Assembly process simulation with compliant sheet-metal parts
- Capability to be used for fixture optimisation with multi-parts
- Capability to be used for multi-fixture assembly process optimisation
- Applications: automotive, aerospace, ship building

Business Value

The tool has demonstrated the following benefits: (i) reduction in engineering changes necessary in today's industrial practice; (ii) fixture optimisation, not only for a single part, but also for a batch of parts. This allows obtaining optimised fixture layout which is designed for a volume of production ("non-ideal") parts, rather than single ideal part

