

Part Monitoring and Control



EPSRC

Pioneering research and skills

Benefits

- Facilitate Statistical Process Control (SPC) for surface measurements used in stamping process and assembly: (i) mean shift detection; (ii) local deformation detection
- Extract significant deformation patterns from high dense cloud of points
- Facilitate die try-out process – identification of stamping process faults through root cause analysis

Summary

The tool has been developed to detect dimensional and geometrical faults of manufactured parts or assemblies. Quality practitioners can perform statistical process control (SPC) utilising cloud of points data. It has the capability: (i) to develop monitoring chart using correlated and multi-dimensional parameters; (ii) for in-process quality improvement through closed-loop feedback.

Features

- Capabilities to detect dimensional failure using production data
- Extract functional information from high dimensional and high volume data (cloud of points) captured through 3D non-contact scanners
- Applications: automotive, aerospace, ship building, home appliances
- Capability to identify, isolate and correct product quality related faults

Business Value

- Enable quality engineers to take decisions on the product quality and potential in-process adjustments
- Facilitate use of non-contact scanners for quality monitoring and control of stamping and assembly process

