

DFSS for Products & Processes using a Universal Methodology: D²QOVC

DFSS Methodologies

- Unlike the DMAICT methodology, the phases of DFSS have not been standardised - different organisations will define the phases, tools and their required outcomes to suit their contextual needs.
- As we have done with **Rolls-Royce**, for example, the Six Sigma Group can work with you to build a DFSS strategy to meet your needs, whether you are using software simulation models or physical hardware to develop your designs.
- The following pages illustrate the phases of the D²QOVC methodology used for both product and process design.



DFSS for Products : D²QOVC

Define

Identification, interpretation and articulation of the customers' requirements (determine **Critical To Quality** requirements)

Design

Generate high-level concepts and select the one that has the best chance of meeting customer requirements. Use **Design of Experiments** to find nominal values of design parameters that deliver acceptable design performance.

Quantify

Predict the **robustness** of the proposed design. Understand and prioritise sensitivities.

Optimise

Optimise the design to achieve required performance and make it insensitive (Robust) to variation; Parameter and/or Tolerance Design

Verify

Verify design solution and any assumptions used to predict design performance in earlier stages.

Capture

Capture learning, data and models to use for future product designs

DFSS for Processes: D²QOVC

Define

Identification, interpretation and articulation of the customers' requirements (determine **Critical To Quality** requirements)

Design

Use process expertise in conjunction with process simulation tools to find a design concept that nominally meets requirements.

Quantify

Predict or measure the **robustness** of the proposed design. Understand and prioritise sensitivities.

Optimise

Use process expertise in conjunction with process simulation tools to optimise the design to achieve required performance and make it insensitive (Robust) to variation.

Verify

Verify design solution and any assumptions used to predict design performance in earlier stages.

Capture

Capture learning, data and models to use for future product designs

The Universal DFSS Methodology for Product & Process Design: D²QOVC

