

KOTEL 112: SUPPLIER DfR HANDBOOK – GUIDELINES FOR ENSURING RELIABILITY REQUIREMENT FULFILLMENT

1. PROJECT DEFINITION

Project background and present state

Components are used in wide area of applications such as military, industrial and commercial that often need components to be protected against environmental stresses. Various opinions and studies exist of component reliability and how to verify that component or designing fulfill the requirements. Subject is present-day, usefull and interesting for many companies in differents market areas.

2. PROJECT GOAL

Project Goal(s)

1. Requirements for direct services (purchasing components)
 1. Understanding critical points of view for different type of components
 2. Component is considered as supplier designed subassembly/electronic part (e.g. resistor)
 3. Focused reliability action follow-up requirement list (checklist) for suppliers for different component types: Actions that supplier must do to show customer that component reliability fulfill the requirements
 4. How to manage design/component modification, or way of work, that suppliers, or their suppliers, have done without informing customers? How customers should actively follow-up supplier or their suppliers. Traceability of components
 5. Fake components
 6. Field Quality: How to use e.g. FRACAS (Failure Reporting, Analysis and Corrective Action System) to ensure fulfilment of requirements
 7. What quality tools should supplier use and why
 8. To consider also lifecycle costs (and not only short term costs)
2. Requirements for indirect services (purchasing designing and subcontracting)
 - a. Challenges for determine requirements for suppliers
 - b. Technology transfer (*e.g. own company A => own company B... own company => supplier company...supplier country A => supplier country B...*)
 - c. Cultural differences, success stories
 - d. Purchase control challenges
 - e. Ensuring that supplier's component reliability designing management fulfill the customer requirement e.g. in R&D, manufacturing and software quality
 - f. Optimization for every product, e.g. special lifetime requirement
 - g. Important to understand on-site product diagnostics: How the usage environment affects product reliability and what are reliability requirements

h. Manufacturing equipment, equipment maintenance & tools

Project restriction

- This project considers only designing and component reliability requirements.
- This project doesn't consider system level designing and reliability requirements.

Project structure

- See section " project phases and results"

Participants

- Minimum 5 companies. Cost per participants á 4000eur

Project length

- 1 (-2) years

3. PROJECT PHASES AND RESULTS

Project is divided into five phases. Project phases are:

1. State of art

- Know-how
- State of art results are used for more detailed recommended action planning
- Suppliers expert network and studies are used to get information

2. Theory

- Theoretical background
- Available standards

3. Survey

- Method: Interview
- 5-10 simple questions for participating companies (e.g. project participants interview) / other chosen parties, supplier interviews if possible

4. Generic case

- Extended meeting WG5,6 company case (Water filter product) is used as an example for project phases, this removes possible company confidentiality challenges when turning this project theory to practical actions.

5. Recommended actions

- Written by using information gathered to the project

4. UTILIZATION OF THE RESULTS

Utilization from the point of view of work phases:

- State of art
 - o Increases knowhow of what key information already exists
 - o Focuses this project to a right direction
 - o Helps to create a survey and recommended actions
- Theory
 - o Increases basic knowhow of considered subjects
 - o Helps to create survey and recommended actions

- Survey
 - o Focuses this project to a right direction
 - o Anonymous company presentation of data in the handbook
- Generic case
 - o Helps to understand how theory and practice are applicable for (a generic case example) company
- Recommended actions
 - o Easy readable and usable, fast to implement in any company
 - o Rules of thumb / todo / 1a4 / checklist / other easy-to-use documentation
- Handbook
 - o Helpful for training and practical work. In addition, the handbook is helpful for communication in national and international co-operation needed in this field of technology.
 - o Modular handbook construction for easy usage

Utilization from the point of view of short and long term planning:

- *In the short term* participants achieve immediate increase in their knowledge, improved work practices and co-operation, and basis for product development improvement. In addition, the gainful national visibility may be used for marketing and networked co-operation. Participating company can use handbook for benchmarking.
- *In the long term* the participants gain competitive edge. Knowledge of the subjects is critical in the increasingly competitive global markets.
- *If applicable, future national and international research, development and standardization work* are considered as a follow up of the project.

5. RESOURCES AND ORGANISATION

KOTEL workgroups will participate in the project, VTT is responsible of the production of the short handbook.

A management group and a responsible leader are set for the project.

6. TIMETABLE

Project is implemented between Q2 2012 – Q2 2013. More precise timetable will be written after the first project meeting and updated project plan.