
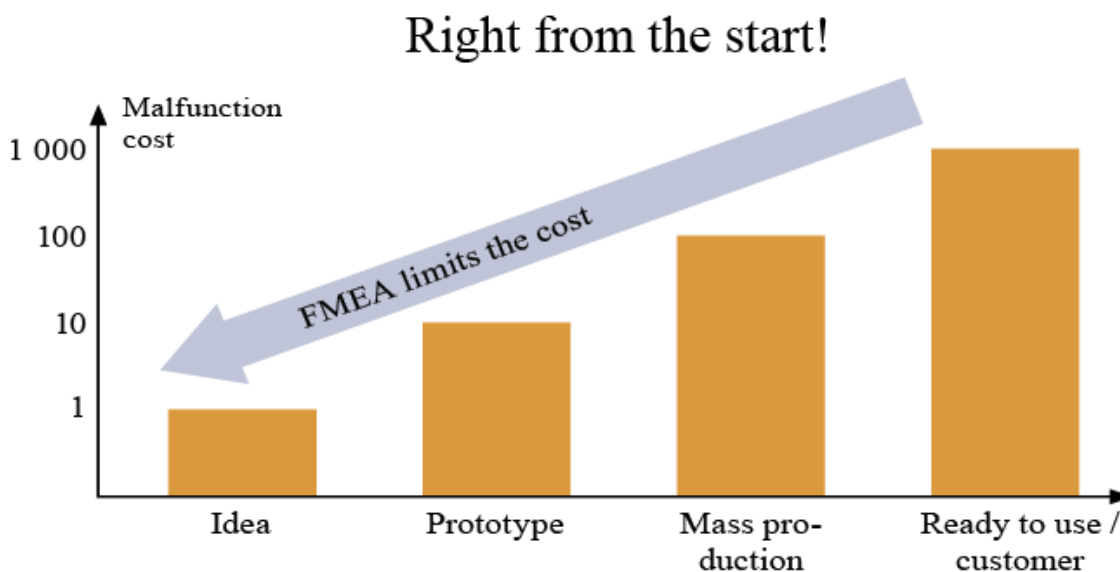


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	Product FMEA – Product brochure			FM050001-UK	
Datum/Date	Upprättad av	Granskad av	Godkänd av	Utgåva	Sida/Page
2005-01-24	ÅL		ÅL	1	1 (5)

Rektron FMEA – a way to safer products

Experience has shown that use of computer-based aid helps you to do FMEA analyzes in half the time compared to manual methods.



Rektron FMEA

Flexible tool for following FMEA analyses

- Design
- Development
- Process
- Environment
- Contract review
- Follow-up
- Product review
- General risk analyses

Start from existing projects or use parts from Component archive

Is this useful for me? Let's say that you create a project that you know will contain parts of information that you have already entered into an earlier project. Why enter it all again? Instead, get those projects that you know are involved, and use the commands that exist for copying/moving information.

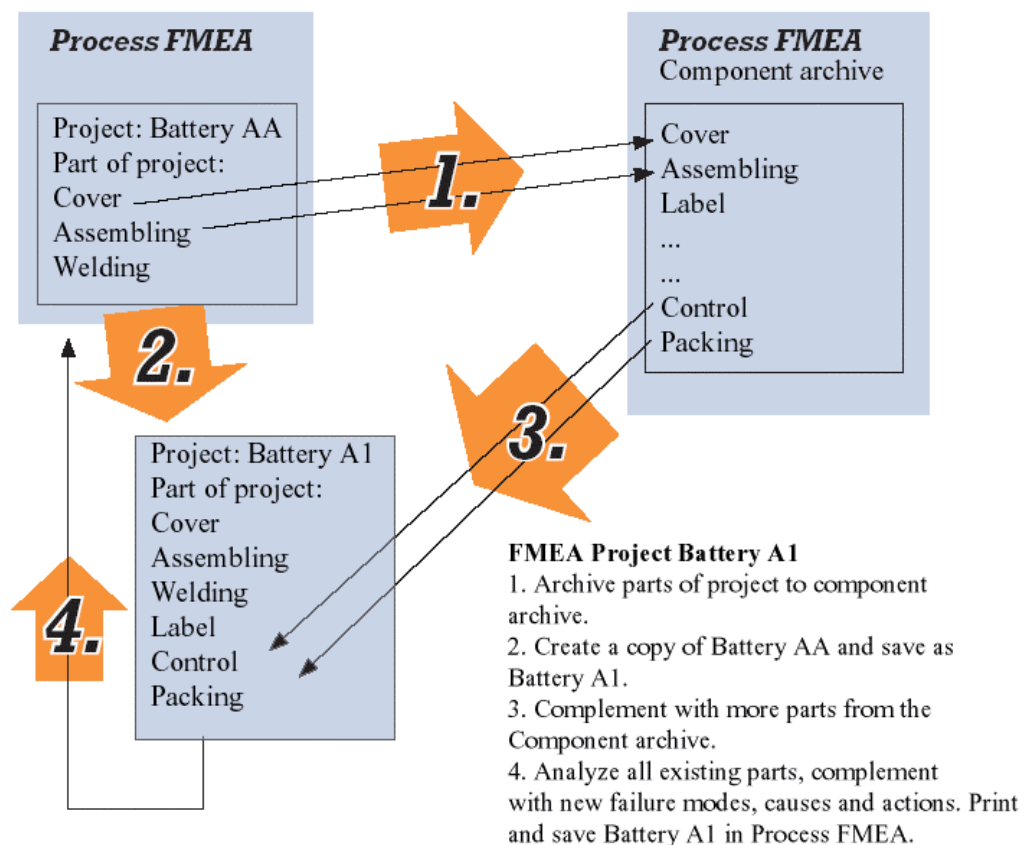
- Don't forget that you have to complement, analyze, risk estimate and evaluate your new parts of project.
- It's the time-demanding handling that you make more efficient.

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	Datum/Date 2005-01-24	Upprättad av ÅL	Granskad av	Godkänd av ÅL	Utgåva 1	Sida/Page 2 (5)

Rektron FMEA – use recycling to make your work more efficient

Alternative ways of working

- Create an FMEA project by using information from similar projects. Combine, delete and add information to create the new project.
- Create an FMEA project, by using an already existing project. Change and complement the project using parts of projects from a Component archive.
- Examples of parts of projects that can be moved to a Component archive are already carried out analyzes of incoming inspection of material, feeding, soldering, drilling, milling, packing, etc.
- You can use Rektron FMEA in a network, where only authorization and the number of simultaneous users are limiting the availability within the company.



Store parts of project in the Component archive



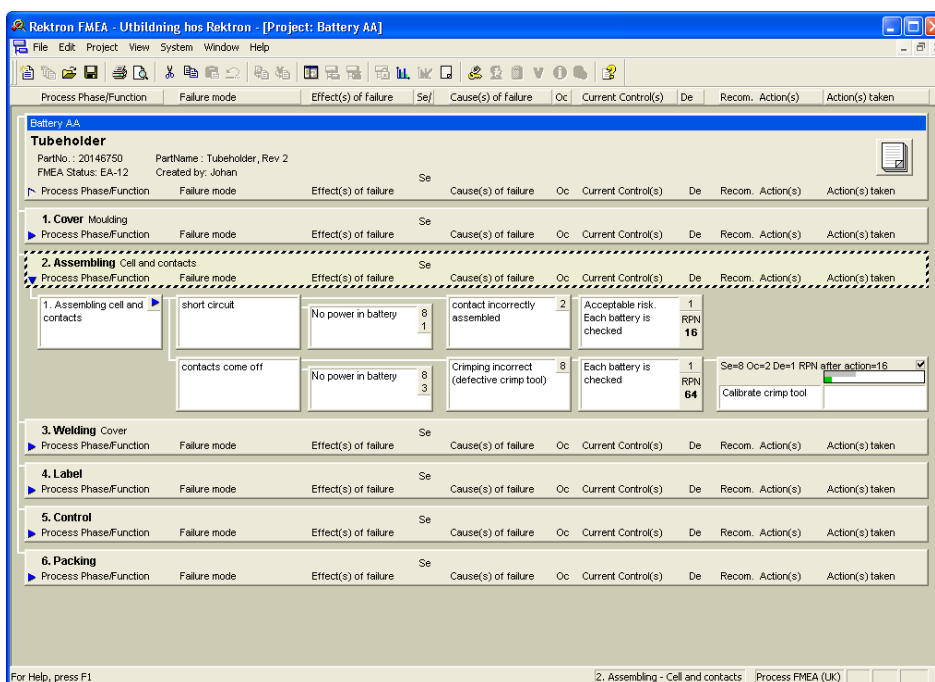
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Rektron FMEA

An FMEA analysis contains important information that can cause considerable damage if it falls into the wrong hands. Therefor Rektron FMEA is equipped with several security levels controlling authorizations and accessibility.

The Administrator always has full access and can change existing FMEA variants and create new FMEA variants. Naturally, Rektron FMEA can also be used in networks with full security.

- If FMEA analysis is new to you - contact us. We have valuable information.



Divide the project and use headings

Tree structure

The structure is according to the family tree which makes it easy to see the connections between process phase, failure modes, causes of failure, effects of failure, classifications, etc. *With two severity scales, (Customer Effect and Assembly effect) according to QS9000 Third Edition.*

Headings

Headings and subprojects are used to get a total overview. All process phases belonging to a heading can be “hidden” when the focus is not on this particular part of the project.

Numbering process phases

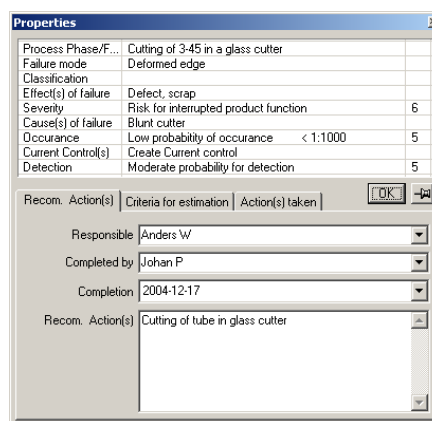
Each process phase is given a serial number to make it easier to orientate oneself in parts of processes and selections.

Printouts

Printouts are regulated by QS/ISO9000 standard formats with texts and logotypes custom made for each company. It is also possible to select print formats suited for distribution via Internet/Web.

Selections and risk profiles


To make it easy to see relations and priorities it is possible to create selections. Selections can be based on severity, personal injury, actions, RPN, actions taken by, date for action, etc.



Well structured dialog boxes

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	Datum/Date 2005-01-24	Upprättad av ÅL	Granskad av	Godkänd av ÅL	Utgåva 1	Sida/Page 4 (5)

Printouts

Tubeholder										Process FMEA (UK)						
FMEA Reg. No.: Battery AA		PartNo.: 20146750			PartName: Tubeholder, Rev 2											
Function: Hold tube in position/Not a visual item		DrawingNo.: 41 59 846			FMEA Status: EA-12											
Cust./Supplier: SAAB		Created by: Johan			Created: 2004-09-10											
CoreTeam:		Confirmed by:			Confirmed											
Completion:																
Process Phase/Function	Failure mode	Effect(s) of failure	Se	CI	Cause(s) of failure	OC	Current Control(s)	De	RPN	Recom. Action(s)	Responsible & Completion	Actions taken & Completed	Se	OC	De	RPN
1. Cover Moulding																
1. cover moulding	Dimensions outside tolerance range	Battery does not fit to holder	8		Tools defective/worn out	5	Manual check with caliper, random sample 1 / 500	5	200	Initiate SPS to improve detection (also affects F)	TS 2008-12-08	1998-04-15	8	3	2	48
					Material defect properties / contaminated	2	Manual check with caliper, random sample 1 / 500	5	80	New gauges / fixtures for SPS. Start product revision with independent gauges.	TS 2008-12-08	1998-04-15	8	2	2	32
					Wrong moulding parameters set by operator	3	Manual check with caliper, random sample 1 / 500	5	120	Initiate SPS to improve detection	TS 2008-12-08	1998-04-15	8	3	2	48
	Irregularities	Assembling equipment disturbed, injury on users fingers	9		Tools defective/worn out	5	Visual check 100% when assembling	2	90	Change tool	TS 2008-12-08	1998-04-15	9	2	2	36
					Gauge error (not calibrated, damaged, used incorrectly)	2	Manual check with caliper, random sample 1 / 500	5	80	New gauges / fixtures for SPS. Initiate product revision with independent gauges	TS 2008-12-08	1998-04-15	8	2	2	32
Not sufficiently moulded	Cracks, explosion	10		Tools defective	2	Acceptable risk: Visual check 100% when assembling	1	20								
				Operator sets wrong parameters	2	Acceptable risk: Visual check 100% i samtyd med monitoring	1	20								
2. Assembling Cell and contacts																
1. Assembling cell and contacts	short circuit	No power in battery	8		contact incorrectly assembled	2	Acceptable risk: Each battery is checked	1	16							
	contacts come off	No power in battery	8		Crimping incorrect (defective crimp tool)	8	Each battery is checked	1	64	Calibrate crimp tool	TS 2008-12-11	1998-04-15	8	2	1	16
3. Welding Cover																
1. Welding of cover	Cracks	Explosion	9		Insufficient material for welding	7	Visual at the electric control	3	189	Reconstruction of the weld part (more material/space for welded material) New control.	TS 2008-12-08	1998-04-15	9	2	2	36
					wrongly adjusted welding unit	2	Visual at the electric control	3	54	New control.	TS 2008-12-08	1998-04-15	9	2	2	36
	Irregular weld	User reacts on look, injury on fingers	9		wrongly adjusted welding unit	2	Visual at the electric control	3	54	New control	TS 2008-12-08	1998-04-15	9	2	2	36
4. Label																
1. application of label	wrong label	User gets wrong battery, can't read warning text	9		Operator picks wrong label	2	Check at the final inspection	3	54	New control	TS 2008-12-08	1998-04-15	9	2	2	36
					Supplier delivered wrong label	2	Check at final inspection	3	54	New control	TS 2008-12-08	1998-04-15	9	2	2	36
	Label upside down	No effect	1		Operator	2	Acceptable risk. Controlled at the electric control	3	6							
5. Control																

Rektron FMEA

UTBILDNING-3, Utbildning hos Rektron

2005-02-24, page 1 of 2


FMEA Reg. No.: Battery AA		PartNo.: 20146750			PartName: Tubeholder, Rev 2											
Process Phase/Function	Failure mode	Effect(s) of failure	Se	CI	Cause(s) of failure	OC	Current Control(s)	De	RPN	Recom. Action(s)	Responsible & Completion	Actions taken & Completed	Se	OC	De	RPN
1. Control	Wrong size, wrong voltage, short circuit, wrong label	wrong battery, cracks, explosion	9		Person responsible for control misses the control	1	None	9	81	Product revision	TS 2008-12-08	1998-04-15	9	1	3	27
					Wrong equipment	1	None	7	63	Inspection of equipment, include inspection in the instructions.	TS 2008-12-08	1998-04-15	9	1	2	18
6. Packing																
1. Packet	wrong packet	Customer reacts negative	3		Operator error	2	No control. Acceptable risk.	3	18							

Rektron FMEA

UTBILDNING-3, Utbildning hos Rektron

2005-02-24, page 2 of 2

Printouts according to QS9000 Standards, easy to overview

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	2005-01-24	ÅL		ÅL	1	5 (5)

Rektron FMEA – Network installation

- *Rektron FMEA – according to QS9000, Third Edition*

Fixed number of licenses

- Install the software on as many workstations as the number of licenses permits.

		1off	2-4off	5-9off	10-15off
65401430-/1	Rektron FMEA, v3.4, <u>Single user version</u> database version, including installation CD and manual				
65401431-/n	Rektron FMEA, v3.4, <u>Professional Edition</u> database version, including installation CD and manuals. Multiple users.				

System requirements (minimum): Windows 2000/XP, 200 MHz, 128 MB RAM, 200 MB HD, SVGA (1024x768 is recommended).

Floating number of licenses

- Install the software on as many workstations needed. The simultaneous number of users is limited to the number of licences. Permit the whole company to use the software for a minimum cost!

		1off	2-4off	5-9off	10-15off
65401431-/F	Rektron FMEA, v3.4, <u>Professional Edition</u> database version, including installation CD and manuals. Multiple users.		At least 2		
FU65401431	Rektron FMEA, v3.4, <u>Professional Edition</u> (Evaluation version)				

System requirements (minimum): Windows 2000/XP, 200 MHz, 128 MB RAM, 200 MB HD, SVGA (1024x768 is recommended).

Support and Program Upgrading Agreement

- A Program Upgrading Agreement includes free support and free program upgrades.

u-agreement	Free phone/Internet support and free program updates. Payment/year <ul style="list-style-type: none"> • <i>Considering the fast computer development an upgrade agreement is an important link between you, as users and us, as product developers.. It automatically gives you new program versions and adjustments to new computer environments.</i> • <i>Phone support/u-agreements do NOT include education in how to use the program (this is described in the documentation)</i> 	10% of license costs 12 months from delivery Extended yearly
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Installation and education

- Our experience shows that a good start is necessary to achieve quality, efficiency and to reduce costs.

Installation	Network installation, Start-up, and general information, for managing the system	costs/day
Education	FMEA Method, education and software training, QS9000, education material.	costs/day
Travels	Travel costs, expenses and hotel costs will be invoiced for actual costs.	Actual



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