OUR AMBITION

SOX as the leading Safety & Security **Engineering Workbench BOM / FMEDA SEMICONDUCTOR ANALYSIS**





RIVIAN



















\sim

Founded 2008
Munich / Site in Bremen
Japan, South Korea, China and North USA
SOX / C-SOX (Cloud Based SOX, first modules available in Q3 2019)
Consulting, Training, Training on the job (e.g. pilot projects and SOX migration)
TWT Engineering, (ITK Engineering)
A-Spice level 1 and ISO 26262 tool qualification in cooperation with Bosch

SYSTEM-ORIENTED & COLLABORATIVE ENGINEERING

CENTRAL COMPANY DATA STORAGE & KNOWLEDGE DATABASE

SAFETY METHODS EMBEDDED INTO YOUR ENGINEERING

IMPROVED PROCESS AND ENGINEERING TOOLS MATURITY

LOWER COSTS BY THE REPLACEMENT OF ISLAND SOLUTIONS





The SOX workbench is an integrated tooling platform with a rich and fast UI that combines a manifold of tools for functional safety analysis.

The upcomming version of SOX 3.2 will provide a new semiconductor feature that allows modelling of semiconductors according to

- ISO26262
- IEC62380
- SN29500

With the possibility for a detailed analysis of failure coverage on lowest level components (Block and Pin)

O SOX	Vorkbend	:h													-		\times
File Edi	Papyru	us Variants	Administration Windo	ow Help													
	🖹 😂 🤇	🎽 😒 🚈 🤻	E 🔶 🔶 📐 🗸 🖉	• 🖉 • 🖲	🖪 Ť	@ 🤉 🖥 🕶 🖬	I • 🛱 🔗 →	- []	🗟 • 🖷 • 🚼	• ≣ • 🕅 • 🖨	$\bullet \bullet \bullet \bullet $	°. ∰ ₩ •	· ~	B I A - &	E	0	d 👶
😤 Semio	onductor	sample2[Maii	n] 🛛 🛄 ISO 26262 I	Part-11 Tabele	29	Standard Mission	Profiles IEC62380	📜 🛄 Stan	dard Temperatur	e Profiles IEC62380			💋 FIT Details 🕱	👃 Temperature profiles 🚊 Missio	n profiles		
Total	DIE. CP	U. SRAM			▼ Filt	ter:	~	1		• * = =	• • · · ·	- 🛛 =				l	1 😂
BOM: Se	micondu	rtor									± //		FIT Calculation for	r FitAnalysis: Hard Error2/Block1, Sof	t Error2/Bloc	k1	
			Component		4	Failure N	Aode 🕨			[SG1] SG1							
	Comp	Total FIT	Failuremode	Туре	Safety r	Failure Mode	Split	SR (SP)	Relevance (SP)	Diagnosis (SP)	FMC (SP)	λ (SP) SR	Catalan	[select catalog]		м	
	Y	V		\forall	Y	Y	Y	V	,	7 7	Y	' Y	Catalog	[select catalog]			<u>~</u>
1.1.1.1	0.058	0.058	Central Processing	Unit (CPU)	×						9 79%		Component Typ	[select catalog to assign type]		× .	×
1.1.1.1.1						✓ CPU_FM1	25%	×	100%	[DG1] DG276 [DG2] DGZ2 (corr=0.5)	87% *	° 0.002	Failure Mode Typ	e			
1.1.1.1.2						✓ CPU_FM2	25%	X	100%	[DG1] DGZ76	80%	0.003	Mission profile	[Motor control (WW)]			×
1.1.1.1.3						✓ CPU_FM3	25%	X	100%	[DG2] DGZ2	70%	0.004	Temperature Prof	ile [Motor control]	~		82
1.1.1.1.4						✓ CPU_FM4	25%	×	100%	[DG1] DGZ76	80%	0.003		ine [meter control]			_
1.1.1.1.1	12	12	S Soft Error1										Effective FIT	NaN			
1.1.1.1.2	12	12	S Soft Error2							_							
< 🚓 Semi	conducto	r 📲 FMEDA	8									>					
🖳 Mode		Catalog	Object L 📃 🗖	вом 🕅		Prope 🗍 🗐 Histor	💐 Task A 🌒 Proje	ec 🗹 Trac	es] 🛃 Trace 🕽 🤇	Suspe 📃 🗖	🔀 Failur	e Rate Catalog	K Failure Mode Ca	talogs 🖄 📕 PSS 🥅 Clipboard		c	
		E 12 🗹								<u>s</u> – F	150.34	262 Dave 1	1 Table 20			_	
> 🖾 🤅	iysML 1.4	model		🖪 Compo	nent ana	lysis 🚺 Soft Erro	or1 Soft Error	2 🖪 Har	d Error2		130 20	5202 Fait-1	T Table 29				
> 🖾 <	EPackage Modell ik	e, ModelLibrar pranvo Ecore Pr	/» UML Primitive Type imitive Types	tuna filtar ta	+						☆ぐ	• =>					
/		any concre	indive types	type filter te	u						type fi	lter text					
				Name	0.411.0		Progress	Total F	IT SPF + RF	SPFm LM ^	>	Central Proce	ssing Unit (CPU)				^
					DATJ OV nassigne	erall system (428) d (0)	428 Open		0 0	0%		CPU Interrupt	Handler circuit (CPU)	a INTH)			
				~ 🗰 🖸	[SE1] D	igitalComponent (2	2) [->1		17 0	100%	5	CPU Memory	Management Unit (CF	PU_MMU)			
✓ ♣ [] [SE2] Total DIE (2) [->2 2->]				17 0	100%	>	Interrupt Con	troller Unit (ICU)									
✓ Image: Search CPU (2) [->2 0->]				17 0	100%	v		- 0.0%									
						Block3			12			DMA_FM2	- 0.0%				
			>		+ N		2 0->		0 0	0%		🛪 DMA_FM3	- 0.0%				
			🖉 🗆 Aa	<					<u> </u>	>		A DMA_FM4	- 0.0%				~
															Administ	rator@) repoay

SOX FMEDA SEMICONDUCTOR ANALYSIS



The new Semiconductor feature of SOX allows modelling of semiconductor devices with new specific module types:

- Device
- DIE
- Package

With the corresponding specific component types

- Block (for DIE)
- PIN (for Package)

Multiple DIE technologies can easily be handled by the **stacked DIE** concept, that introduces a **total DIE** module to encapsulate all λ_{DIE} calculations.

	BOM Modul 🛛 🔲 Properties 🗐 History	🛃 Task Assign 🛛 🛃 Project Tasks 🖬 Traces 🖬 Trace Gra	ph 🗢 Suspect Mar 👘 👘	
Mod	lule viewer to display semic	onductor structure	4 - E	Œ
	Name IBOM11 Overall system (572)	Catalog component type	Total FIT 281.816	ź
	 ✓ IN [SE1] DigitalComr ✓ IN [SE2] Total DIE ✓ IN [SE3] CPU 	ard Circuits; Digital circuits, Micros, I	0 167.363 1.776 DSP 0.29	1
	 ISE4] SRAN ISE5] Package Comment ISE6] Mixed signal example (104) [-> ISE1] Digital component example with the statement of the statem	Alt+H ard Circuits; Read only memory) Ctrl+Shift+C	1.486 165.587 6.791 4.745	1
	> 🧱 💽 [SE16] IEC62380 Microprocessor Exam	 ✓ [] [BOM1] Overall system (428) ↓ unassigned (0) ✓ ∰ N [SE1] DigitalComponent (20 ✓ ∯ N [SE2] Total DIE (15) [->2 ✓ ∯ N [SE3] CPU (5) [->2] 0 	102.917)[->1 2- 2->])->]	1
	<	 ■ Block2 ● Block3 ● Block4 ● Block5 > ★ ■ [SE4] SRAM (10) [->2 	2 0->]	>
		 [SE5] Package (5) [->2] Pin1 Pin2 Pin3 Pin4 Pin5 	0->]	

SOX FMEDA SEMICONDUCTOR ANALYSIS



The simple **device wizard** of SOX guides you through the creation process of a semiconductor device. Collecting all relevant data to build up the complete device structure.

Add device	e			_		×			
Create a new	device		2		- 10				
Please specify	y the device	e parameters and clic	k "Next" to specify Pa	ackage and DIE					
		Add device				—			
Name	Dev1	Create a new Pac	kage				4 1 1		
Description	A new d	Please specify the	package parameters				1		
		Name	Pack						
		Description	Add device						×
Catalog	IEC62380		Create a new DIE	for technology 1					L.
-	🗹 The De	-	Please specify the D	DIE parameters for tecl	nnology 1				τ.
			Name	DIE1					
P		Package Type (λ3)	Description	Technology 1 of new	v device				^
		Anzahl an Pins							
		?							
							-		~
			Anzahl an Blöcken	1					
			?	< <u>B</u> ac	k	<u>N</u> ext >	<u>F</u> inish	Cano	cel

SOX FMEDA SEMICONDUCTOR ANALYSIS



After the creation of the device structure, the powerfull SOX BOM/FMEDA grid gives access to all detailed data and provides sophisticated features to ease the work of capturing new data and giving an overview of existing data.

Features include:

- Powerfull regular expression filters for columns
- Inline editing support
- D&D support for assignemt of component types and failure modes
- Type filtering
- Coloring to indicate diagnostic coverages
- Freeze functionality
- Search

Overa	ll system				 Filter: All 	× .	ê 🔤 👪 🚽	/* 🗉) 🖽 📰 🖊 🗕	N 🔤
					Compo	nent				^
	Status	Name	Description	Factor	Product Code	Module	Basis FIT	FIT %	FIT	Total
	Y	Y	Y	Y	Y	V	Y	Y	Y	
1.1.1.1	Open	🜐 N Block1		1		CPU	0	0 %	0	
1.1.1.2	Open	🔛 N Block2		1		CPU	0	0 %	0	
1.1.1.3	Open	🔛 N Block3		1		CPU	0	0 %	0	
1.1.1.4	Open	🔛 N Block4		1		CPU	0	0 %	0	
1.1.1.5	Open	🔛 N Block5		1		CPU	0	0 %	0	
1.1.2.1	Open	🔛 N Block1		1		SRAM	0	0 %	0	
1.1.2.2	Open	🔛 N Block2		1		SRAM	0	0 %	0	
1.1.2.3	Open	🔛 N Block3		1		SRAM	0	0 %	0	
1.1.2.4	Open	🔛 N Block4		1		SRAM	0	0 %	0	
1.1.2.5	Open	Block5		1		SRAM	0	0 %	0	
1.1.2.6	Open	🔛 N Block6		1		SRAM	0	0 %	0	
1.1.2.7	Open	Block7		1		SRAM	0	0 %	0	
1.1.2.8	Open	🔛 N Block8		1	di la constante de	SRAM	0	0 %	0	
1.1.2.9	Open	Block9		1		SRAM	0	0 %	0	
1.1.2.10	Open	Block10		1		SRAM	0	0 %	0	
1.2.1	Open	T N Pin1		1		Package			33.117	
<										>
🚓 Semio	conductor 🖾									

....

SOX SEMICONDUCTOR RELIABILITY ENHANCEMENTS

 \bigcirc

Calculation of failure rates for semiconductor is performed in a topdown approach which determines fit rates on package and DIE level using the mathematics defined in **ISO26262** together with **IEC62380** or **SN29500**.

Relevant data for fit calculation is captured in a clear and concise UI that recalculates fit values directly on parameter changes.

Calculated λ_{DIE} is distributed to lower level **blocks** by either specifying a **percentage** value for each block or alternatively by specifying a **block size**.

Calculated λ_{DIE} is uniformely distributed to all **pins** of the package.

FIT Calculation for SemiconDevice: DigitalComponent

Catalog	C62380-1		× 🔀									
Component Typ	ype not applicable for s	election]	¥ 🕺									
Failure Mode Type												
Mission profile	Motor control (WW)		~ ×									
Temperature Profile Motor control 🗸 🔀												
Interface (λ overstress)												
Thermal resistance												
Self heating [°C] (ΔT) 26.27											
Area based distrib	oution											
Device FIT composit	ion											
DIE	1.776											
Package	165.587	FIT % (0100)	20.000									
Overstress	þ.000	Effective FIT	0.058									
Total	167.363		*									
		Block area [mm ²]	20.000									
		Effective FIT	0.058									

SOX SEMICONDUCTOR RELIABILITY ENHANCEMENTS

SOX Semicon provides detailed information on **intermediate calculation results** on all levels of the calculation.

Calculation details		
Total DIE FIT		
FITDIE	1.7759501124132444	
calculation schem	ne SUM_LAMBDA2	
CPU		
FIT _{DIE}	0.29032849157128116	
ignore τ_{off}	false	
λ_1	3.4E-6	
λ ₂	1.7	
a	10.0	
de-rating	0.16874322409499942	
base failure rate	1.7205342207271765	
SRAM		
FITDIE	1.4856216208419633	
ignore τ _{off}	false	
λ_1	1.7E-7	
λ ₂	8.8	
a	10.0	
de-rating	0.16874322409499942	
base failure rate	8.80403719206873	

 \sim

SOX SEMICONDUCTOR RELIABILITY ENHANCEMENTS

The powerfull catalog concept of SOX now also encompasses **mission profile** and **temperature profile** catalogs.

Standard mission profiles and temperature profiles as defined by IEC62380 are already available.

Company specific profiles can easily be added using **public catalogs**.

In conjuction with SOX server these profiles can be provided to any engineer working with SOX. Due to SOX sophisticated client/server technology and **relational database** backend all data is available for each engineer at **real time**.







The new SOX mission profile editor for company specific mission profiles.

Mission Profile catalog Standard Mission Profiles IEC62380

Catalog	Mission Profil	e				
type filter text	Name	Motor control (WW)				
Image: Image	Description	As described in IEC62380 Several working phases are considered - The working rates consider three different internal working temperatures for the equipment, and take into account the annual working hours for each of these temperatures. The overall working time is estimated to be 500 h. - Two thermal cycling are considered: Phase 1: 2 night starts; Phase 2: 4 day light starts. - Phase 3: non-used vehicle, dormant mode 30 days per year.				
	Working Ph	ases		4 X		
	Enter filter	text				
	🔔 Nam	e	t_ae	^		
	2 night sta	irts	5.00	6		
	4 day light	t starts	15.00	13		
	Non used	vehicle	14.00	. *		
< >	Count: 3	Selected: 0		7		



The new SOX temperature profile editor for company specific Temperature profiles.

atalog	Temperature	Profile					
type filter text	Name	Motor c	ontrol				
 Image: Image: Im	Description	Description As described in IEC62380 Several working phases are considered - The working rates consider three different internal working temperatures for the equipment, and take into account the annual working hours for each of Factors: Motor control					
	Factors: Mo						
		Factor	Temperature			_	
		0.02	32.00				
		0.015	60.00				
		0.023	85.00				
	Count: 3		Selected: 0				
				∑tau	0.0	058	
< >				T_ac_mean	60.2	259	

SOX SEMICONDUCTOR FMEDA ENHANCEMENTS

 \bigcirc

SOX now provides relevant failure modes catalogs of **ISO26262 Part 5** and **Part 11**. The failure mode definitions can be assigned to components by simple **D&D** operations.

Customer specific catalogs can be added and provided to all engineers just like the mission and temperature profile catalogs.





SOX now supports correlation of diagnostics. A correlation factor can be specified for each occurence of two or more diagostics at failure mode level.

				∇		Y		\forall						
							9 799	6						
Overa	ll system				[DG1] DGZ70 [DG2] DGZ2 (corr=0.5)	5	87%	θ	0.0	111 112 phy 22 1	11		• N -	
BOM: Se	miconductor				[DG1] DGZ7	6	80%		0.0					
	Failure N	1ode 🕨			(DG2) DG72		70%		0.0					4 /
	Failure Mode	Split	SR (SP)	Relevance (SP)	Diagnosis (SP)	FMC (SI	P) λ (SP)	SR (N	/IP)	Relevance (MP)	Diagnosis (MP)	FMC (MP)	λ (MP)	CCF
	Y	∇	V	Y	Y		∇	7	Y	Y	V	Y	Y	∇
1.1.1														
1.1.1.1						9 799	6							
1.1.1.1.1	✓ CPU_FM1	25%	×	100%	[DG1] DGZ76 [DG2] DGZ2 (corr=0.5)	87%	e 0.002	×		100%	[DG1] DGZ76 [DG2] DGZ2 (corr=0.5)	87% 😫	0.002	×
1.1.1.1.2	✓ CPU_FM2	25%	X	100%	[DG1] DGZ76	80%	0.003	X		100%	[DG1] DGZ76	80%	0.002	X
1.1.1.1.3	✓ CPU_FM3	25%	X	100%	[DG2] DGZ2	70%	0.004	X		100%	[DG2] DGZ2	70%	0.003	X
1.1.1.1.4	✓ CPU_FM4	25%	X	100%	[DG1] DGZ76	80%	0.003	X		100%	[DG1] DGZ76	80%	0.002	X
1.1.1.2						829	6							
1.1.1.2.1	✓ CPU_FM1	25%	×	100%	[DG1] DGZ76 [DG2] DGZ2 (corr=0.6)	85.6%	e 0.002	×		100%	[DG1] DGZ76 [DG2] DGZ2 (corr=0.6)	85.6% 😝	0.002	
1.1.1.2.2	✓ CPU_FM2	25%	×	100%	[DG1] DGZ76 [DG2] DGZ2 (corr=00[DG1] DGZ	91.2%	e 0.001	×		100%	[DG1] DGZ76 [DG2] DGZ2 (corr=0.2)	91.2% 😝	0.001	×
1.1.1.2.3	✓ CPU_FM3	25%	X	100%	[DG1] [DG2] DGZ	2 80%	0.003	X		100%	[DG1] DGZ76	80%	0.002	X
1.1.1.2.4	✓ CPU_FM4	25%	X	100%	[DG2] [(corr=0.2)	70%	0.004	X		100%	[DG2] DGZ2	70%	0.003	X
1.1.1.3						100%								

SOX SEMICONDUCTOR FMEDA ENHANCEMENTS

0

 \bigcirc

In order to cover Soft Errors on semiconductor devices SOX now introduces the concept of **FIT Analysis Type**. One or more **Fit Analysis Types** can be added to a SOX BOM document. Each **FIT Analysis Type** can be assigned to any Component or Module.

For each assigned **FIT Analysis Type** the engineer can manually capture FIT data or even use **IEC62380** or **SN29500** calculations to calculate FIT values according to the respective calculation scheme.

An assigned **FIT Analysis Type** behaves similar to the default component FIT analysis. It gives the possibility to model **failure modes** and **diagnostic coverage** and provides FIT Analysis Type **specific metrics**.

Properties for					×				
BOM Document	Semicond	luctor	6	() -	• •				
	Failure Mo	odes Set <	not set>		¥				
	Compone	nt catalog			~				
	Descriptio	n							
	FIT analys	is types	S Soft Error1		4				
			S Soft Error2						
			🚼 Hard Error2		× .				
	Set τ_c	off to zero							
D			Apply and Close	Cancel					
CPU	0.058	0.058	Central Processing Unit (CPU)	×					
	V 12	12	Soft Error						
	V 12	12	Soft Error2						
	V 3	2							

SOX SEMICONDUCTOR FMEDA ENHANCEMENTS



	-													- //					
BOM: Sem	niconductor																		
		(Component	_			Failure N	ode	•				SG1] SG1						
	Assembly group	!Comp	Total FIT		Failuremode Type	Safety r	Failure Mode	Split	SR (SP)	Relevance (SP)	Diagnosis (SP)	FMC (SP)	λ (SP)	SR (MP)	Relevance (MP)	Diagnosis (MP))		
Ø			 0.050	me	· · · · · · · · · · · · · · · · · · ·		× ×	7	' Y	7	7	7 7	7		Y	7	\forall		
1.1.1.1	CPU	0.058	0.058		entral Processing Unit (CPU)	×	ALCOULEM1	259/		1008/	(DC1) DC775	07%	9 0.002		100%	(DC1) DC776			
1.1.1.1.1							A ChoTemu	23%		100%	[DG1] DG276 [DG2] DGZ2 (corr=0.5)	0770	0.002		100%	[DG1] DG276 [DG2] DGZ2 (corr=0.5)			
1.1.1.1.2							✓ CPU_FM2	25%	X	100%	[DG1] DGZ76	80%	0.003	×	100%	[DG1] DGZ76			
1.1.1.3							✓ CPU_FM3	25%	X	100%	[DG2] DGZ2	70%	0.004	X	100%	[DG2] DGZ2			
1.1.1.1.4							✓ CPU_FM4	25%	×	100%	[DG1] DGZ76	80%	0.003	×	100%	[DG1] DGZ76			
1.1.1.1.1		12	12	SS	oft Error1												-		
1.1.1.1							N FM1	60%	×	100%	[DG1] DGZ/6	80%	0	×	100%	[DG1] DG276			
1.1.1.1.2		12	12		🚦 BOM Modules 🖾		Properties 🗐	History									E 🗕		5
1111		12	12	0							_								ľ
1.1.1.1					[Component an	alysis	S Soft Error1	S Soft E	rror2	Hard Error2	2								
1.1.1.3		0.5				-													
		Ø 5	5																
1.1.1.1		00	5	Ð	type filter text		*												
1.1.1.1 1.1.1.1		<i>V</i> 3	5		type filter text		X	Progress	\ 	otal FIT SPI	F + RF S	PFm	MPF	LFm	Total S	PMHF	ASIL	SPF +	
1.1.1.1 1.1.1.1		<i>V</i> 3	5		type filter text		X	Progress	. 1	otal FIT SPI	F + RF S	PFm I		LFm	Total S	PMHF	ASIL	SPF +	
1.1.1.1 1.1.1.1		2	5		type filter text Name (FMED 11) O	verall sys	stem (428)	Progress 428 Ope	n	Total FIT SPI	F + RF S	PFm 1	LMPF 0	LFm 100%	Total S 5	PMHF	ASIL ASILD	SPF +	
1.1.1.1		V 5	5		type filter text Name (FMED 1) On unassign	verall sys ed (0)	stem (428)	Progress 428 Ope	. 1	Total FIT SPI 17 0	F + RF S 0 0	PFm 100% 0%	LMPF 0 0	LFm 100% 0%	Total S 5 0	PMHF	ASIL ASILD QM	SPF +	
1.1.1.1 1.1.1.1		<i>V</i> 3	5		type filter text Name I [FMED 1] Or Unassign I [SE1] [verall sys ed (0) DigitalCo	stem (428)	Progress 428 Ope	n 1	otal FIT SPI	F + RF S 0 0 0	PFm 1 100% 0% 100%	LMPF 0 0 0	LFm 100% 0% 100%	Total S 5 0 5	PMHF	ASIL ASILD QM ASILD	SPF +	
1.1.1.1			5		type filter text Name (FMED 1) O unassign (SE1) I · · · · · · · · · · · · · · · · · · ·	verall sys ed (0) DigitalCo E2] Total	stem (428) omponent (2) [- DIE (2) [->2 2-	Progress 428 Ope >1 ->]	n	Total FIT SPI 17 0 17 17	F + RF S 0 0 0	PFm 1 100% 0% 100%	LMPF 0 0 0	LFm 100% 0% 100% (TSR- (TSR-	Total S 5 0 5 SPF > 0) L	PMHF MPFm = 1 - (ASIL ASILD QM ASILD (MPF / (TSI	SPF + - SPF))	
nalys	sis Type	spec	₅		type filter text Name	verall sys ed (0) DigitalCo E2] Total [SE3] C	stem (428) pmponent (2) [- DIE (2) [->2 2- PU (2) [->2 0-	Progress 428 Ope >1 >] >]		Total FIT SPI 17 0 17 17 17 17	F + RF S 0 0 0 0 0	PFm 1 100% 0% 100% 100%	LMPF 0 0 0 0	LFm 100% 0% 100% (TSR- (TSR-	Total S 5 0 5 SPF > 0) L SPF <= 0) L	PMHF MPFm = 1 - (MPFm = 0	ASIL ASILD QM ASILD (MPF / (TSI	SPF +	
nalys	sis Type	spec	₅ cific		type filter text Name	verall sys ed (0) DigitalCo E2] Total [SE3] C SE3] C Blo	stem (428) omponent (2) [- DIE (2) [->2 2- PU (2) [->2 0- ck1	Progress 428 Ope >1 >] >]	n 1	Total FIT SPI 17 0 17 17 17 17 5	F + RF S 0 0 0 0 0	PFm 1 100% 0% 100% 100%	LMPF 0 0 0 0	LFm 100% 0% 100% (TSR- (TSR-	Total S 5 0 5 SPF > 0) L SPF <= 0) L	PMHF MPFm = 1 - (MPFm = 0	ASIL ASILD QM ASILD (MPF / (TSI	SPF + - SPF))	
nalys	sis Type an be ac	spec	₅ cific ed in		type filter text Name I [FMED 1] Or unassign I unassign I SE1] [I I I I I I I I I I I I I I I I I I I	verall sys ed (0) DigitalCo E2] Total [SE3] C [SE3] C [SE3] C [SE3] Blo	stem (428) pmponent (2) [- DIE (2) [->2 2- PU (2) [->2 0- ck1 ck3	Progress 428 Ope >1 >] >]	n 1	Total FIT SPI 17 0 17 17 17 17 5 12	F + RF S 0 0 0 0 0	PFm 1 100% 0% 100% 100%	LMPF 0 0 0 0	LFm 100% 0% 100% (TSR- (TSR-	Total S 5 0 5 SPF > 0) L SPF <= 0) L	PMHF MPFm = 1 - (MPFm = 0	ASIL ASILD QM ASILD (MPF / (TSI	SPF +	
nalys ics ca	sis Type an be ac	spec	sific ed in		type filter text Name	verall sys ed (0) DigitalCc E2] Total [SE3] C [SE3] C [SE3] Blo [SE4] Sl	stem (428) pmponent (2) [- DIE (2) [->2 2- PU (2) [->2 0- ck1 ck3 RAM (0) [->2 (Progres: 428 Ope >1 >] >]	n 1	Total FIT SPI 17 0 17 17 17 5 12 0	F + RF S 0 0 0 0 0	PFm 1 100% 0% 100% 100% 100%	LMPF 0 0 0 0 0	LFm 100% 0% 100% (TSR- (TSR- (TSR-	Total S 5 0 5 SPF > 0) L SPF <= 0) L 0	PMHF MPFm = 1 - (MPFm = 0	ASIL ASILD QM ASILD (MPF / (TSI	SPF + (- SPF))	
nalys ics ca	sis Type an be ac nced Mo	spec	sific ed in		type filter text Name	verall sys ed (0) DigitalCo E2] Total [SE3] C [SE3] C [SE4] Sl [SE4] Sl E5] Packa	stem (428) pmponent (2) [- DIE (2) [->2 2- PU (2) [->2 0- ck1 ck3 RAM (0) [->2 0- age (0) [->2 0-	Progress 428 Ope >1 >] >]	; 1 n	Total FIT SPI 17 0 17 17 17 5 12 0 0 0	F + RF S 0 0 0 0 0 0	PFm 1 100% 0% 100% 100% 0% 0%	LMPF 0 0 0 0 0 0	LFm 100% 0% 100% (TSR- (TSR- (TSR- 0% 0%	Total S 5 0 SPF > 0) L SPF <= 0) L 0 0	PMHF MPFm = 1 - (MPFm = 0	ASIL ASILD QM ASILD (MPF / (TSI QM QM	SPF +	
nalys ics ca nhar	sis Type an be ac nced Mo	spec	sific ed in		type filter text Name	verall sys ed (0) DigitalCo E2] Total [SE3] C N Blo N Blo [SE4] Sl E5] Packa Mixed sig	stem (428) pmponent (2) [- DIE (2) [->2 2- PU (2) [->2 0- ck1 ck3 RAM (0) [->2 0- gnal example (0)	Progress 428 Ope >1 >] >] >])-> >]	n 1	Total FIT SPI 17 0 17 17 17 5 12 0 0 0 0 0	F + RF S 0 0 0 0 0 0 0 0 0	PFm 1 100% 0% 100% 100% 0% 0% 0%	LMPF 0 0 0 0 0 0 0 0	LFm 100% 0% 100% (TSR- (TSR- (TSR- 0% 0% 0%	Total S 5 0 5 5 5 5 5 5 7 5 7 5 7 0 1 5 7 7 0 0 0 0 0 0	PMHF MPFm = 1 - (MPFm = 0	ASIL ASILD QM ASILD (MPF / (TSI QM QM QM	SPF +	
nalys ics ca nhar er.	sis Type an be ac nced Mo	spec	sific ed in		type filter text Name	verall sys ed (0) DigitalCo E2] Total [SE3] C Blo [SE4] Sl [SE4] S	stem (428) pmponent (2) [- DIE (2) [->2 2- PU (2) [->2 0- ck1 ck3 RAM (0) [->2 0- gnal example (0 component exar	Progress 428 Ope >1 >] >])-> >])[- np	; 1 n	Total FIT SPI 17 0 17 17 17 5 12 0 0 0 0 0 0 0	F + RF S 0 0 0 0 0 0 0 0 0 0 0	PFm 1 100% 0% 100% 100% 100% 0% 0% 0%	LMPF 0 0 0 0 0 0 0 0 0 0	LFm 100% 0% 100% (TSR- (TSR- (TSR- 0% 0% 0%	Total S 5 0 5 5 5 5 5 5 5 5 5 5 7 5 5 5 5 5 5 5	PMHF MPFm = 1 - (MPFm = 0	ASIL QM ASILD (MPF / (TSI QM QM QM QM	SPF +	
nalys ics ca nhar er.	sis Type an be ac nced Mo	spec ccess odule	sific ed in		type filter text Name	verall sys ed (0) DigitalCo E2] Total [SE3] C [SE3] C [SE4] SI [SE4] SI [SE	stem (428) pmponent (2) [- DIE (2) [->2 2- PU (2) [->2 0- ck1 ck3 RAM (0) [->2 0- gnal example (0 component example (0 component example (0 component example (0 component example (0)	Progress 428 Ope >1 >] >])-> >]) [- np or {	n 1	Total FIT SPI 17 0 17 17 17 5 12 0 0 0 0 0 0 0 0 0 0	F + RF S 0 0 0 0 0 0 0 0 0 0 0 0 0 0	PFm 1 100% 0% 100% 100% 100% 0% 0% 0% 0% 0%	LMPF 0 0 0 0 0 0 0 0 0 0 0 0	LFm 100% 0% 100% (TSR- (TSR- 0% 0% 0% 0% 0%	Total S 5 0 5 SPF > 0) L SPF <= 0) L 0 0 0 0 0 0	PMHF MPFm = 1 - (MPFm = 0	ASIL QM ASILD QM (MPF / (TSI QM QM QM QM QM QM QM	SPF + (- SPF))	

CONTACT



www.enco-software.com



info@enco-software.com

+49(0) 89 71 67 75 89 0



EnCo Software GmbH, Lyonel Feininger Straße 26, D-80807 Muenich