



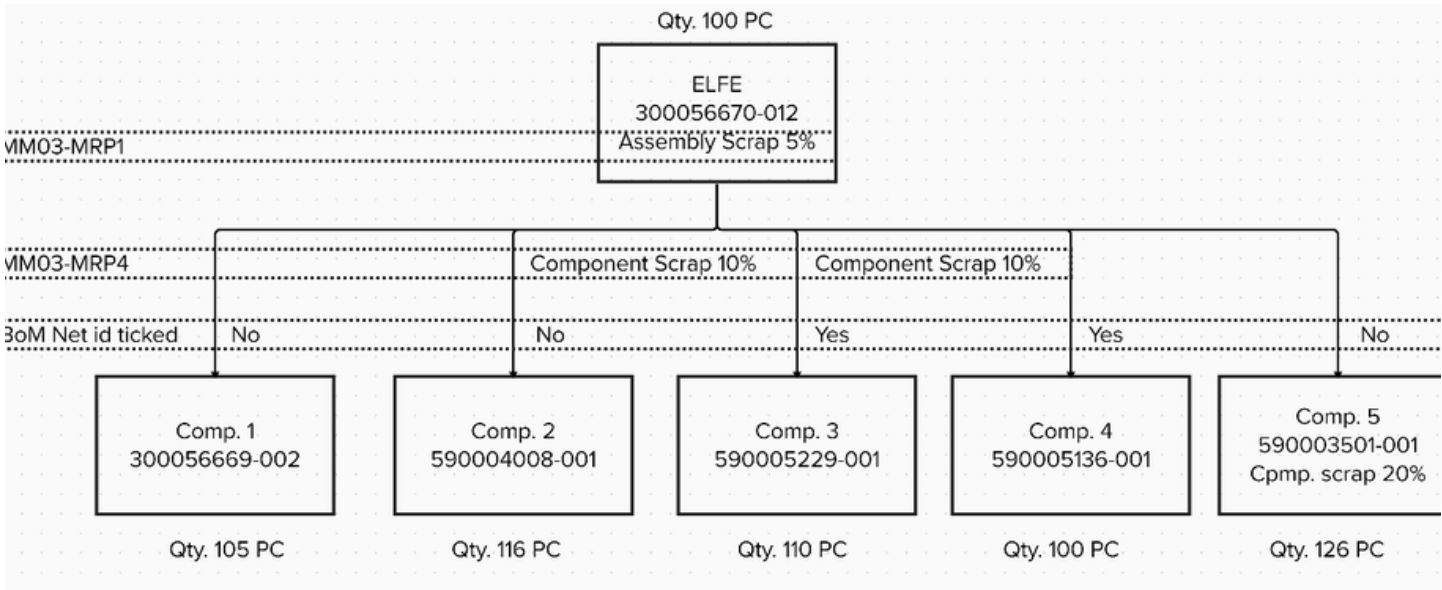
PP Production Planning

Scrap (GER Ausschuss) - **Note: Currently not applicable**

SAP contains 3 kinds of scrap types:

- Assembly scrap (GER Baugruppenausschuss)
- Component scrap (GER Komponentenausschuss)
- Operation scrap (GER Vorgangsausschuss)

Following graphic shows, the impact on an example production order with all the options in Standard SAP:



Material	300056670-012	All scrap options in SAP in one order:			
Description	CD2400				
Product. Plant	1178	Order Start	26.04.2023		
Order Quantity	105	PC	Order End Date	26.04.2023	
Component Overview					
Material	Description	Requirement Qty	U...	Q Plant	F
300056669-002	2275_BR214_EKE_White.PrjPc...	105	PC	1178	
590004008-001	10nF_50V	116	PC	1178	
590005229-001	CON_AMB_PIN_HEADER_2pol	110	PC	1178	
590005136-001	NSSW146AT-Cd2400Cd3440-H...	100	PC	1178	
590003501-001	680R_500mW	126	PC	1178	

a) Assembly Scrap (GER BaugrAusschuss (%))

Assembly scrap represents the scrap created during the production of an assembly or finished product at the level of the finished product. A common case could be an ELFE product where the quality inspection detects scrap on a final step during the half-automated production. In this case all included components as well as the assembled part will be scrap.

The assembly scrap-% is maintained in MM03-MRP 1 of the (half)-finished material number. Consequently the demand will be increased for all components:

Material	
Material	300056670-012
CD2400	Validity

Purchase order text	MRP 1	MRP 2	MRP 3	MRP 4	Work sche...
---------------------	-------	-------	-------	-------	--------------

General Data				
Base Unit of Measure	PC	Piece	MRP Group	
Purchasing Group	593		ABC Indicator	
Plant-Sp.Matl Status	50		Valid From	
		NF Struct. Weights		

MRP procedure			
MRP Type	PD	MRP	
Reorder Point	0	Planning time fence	0
Planning Cycle		MRP Controller	A64

Lot size data			
Lot Sizing Procedure	Z1	Lot-for-lot order qty, last lot exact	
Minimum Lot Size	0	Maximum Lot Size	0
		Maximum Stock Level	0
Assembly scrap (%)	5,00	Takt time	0
Rounding Profile		Rounding value	100

The result looks as follows in MD04. A new column "Scrap" being showed and planned orders being created with the respective rounding value (e.g.,5 multiple 100 pcs.) incl. planned scrap qty.:

Material	300056670-012	
Description	CD2400	
MRP Area	1178	DAR Timisoara Production
Plant	1178	MRP type PD Material type ZMAT Unit PC

A.	Date	MRP ...	MRP element data	Rescheduli...	E..	Receipt/Reqmt	Available Qty	Scrap	Pr...	St...
	17.04.2023	Stock					10.890	0		
	11.08.2022	Delvry	0010099699/000010/0...			221-	10.669	0		4010
	27.04.2023	PldOrd	0008383483/STCK			190	10.859	10	0001	4000

EA1(4)/500 Additional Data for MRP Element

Pld Order	0008383483	Make-to-stock	Order End Date	26.04.2023	GR pr.time	1
Order Qty.	200	PC	Order Start	25.04.2023	Proc. Type	E
Scrap	10		Opening Date	25.04.2023	Order Type	LA

Rounding Value considered!

-> Prod.Ord.	-> PartConvProdOrder	-> Proc.Ord.	-> SubProcOrd	-> Pur Req.
--------------	----------------------	--------------	---------------	-------------

On the component level the respective scrap cannot be seen since the qty. are being calculated from the order qty. of the planned order. Of course, the needed pre-material for the planned assembly scrap being ordered.

Please note: Teamcenter automatically ticks the Net Id in the BoM. Unfortunately, this leads that the assembly scrap being ignored (Net Id must NOT be ticked!)

Material	300056669-002	
Description	2275_BR214_EKE_White.PrjPcbPWB	
MRP Area	1178	DAR Timisoara Production
Plant	1178	MRP type P1 Material type ZMAT Unit PC

Individual List Cross-Plant View

A.	Date	MRP ...	MRP element data	Rescheduli...	E..	Receipt/Reqmt	Available Qty	Su...	St...
	17.04.2023	Stock					253.919		
	17.08.2022	ShpgNt	0100219803/55000073...			20	253.929	1077	4000
	12.09.2022	Delvry	0500001373/000010/0...			50-	253.879		4010
	12.09.2022	ScAgDS	5500007281/00010			11.000-	242.879	1077	
	30.09.2022	ShpgNt	0100233393/55000073...			20	253.929	1077	4000
	20.04.2023	----	END OF PLANNING TIM...						
	25.04.2023	DepReq	300056670-012			200-	253.729		5011

EA1(4)/500 Additional Data for MRP Element

Dependent reqmt	0008521726	000004
Requirement Qty	200	PC
Pegged Reqmt	300056670-012	Reqmts date 25.04.2023
Planned order	0008383483	

Normal Assembly Scrap on comp. leve

Material 300056670-012 CD2400
Plant 1178 DAR Timisoara Production
Alternative BOM 1

Basic Data Status/Long Text Administration Document Assignment

BOM item

Item Number 0010
Component 300056669-002
2275_BR214_EKE_White.PrjPcbPWB
Item category L Stock item
Item ID 00000007
Sort String
Sub-item ID
Seg. maintained ☐ Seg. Value

Quantity Data

Quantity 100 PC Fixed Quantity
Operation scrap in % 0,00 Component Scrap (%) 0,00
Net ID ☐ **Must NOT be ticked!**

Now we switch planned order to production order. The scrap portion is shown and calculated as:

Total Qty. with rounding value = $200 / 100 = 2$

Net value: $200 \cdot 0.95 = 190$

--> 5% of net value $190 \cdot 0.05 = 9.5$ Scrap

Components qty. are being taken from planned order accordingly:

Production Order 10039264 being created:

Consequently, the cost calculation is based on planned production qty. incl. scrap of 200 pcs. with an output of "only" 190 pcs. finished goods:

Here the logic how the values being calculated. The difference of MM1000/ PM1000 in clarification:

56670-012 **MM03**

RON	QTY
397,25 RSD	1.000
265,48 RSD	190

Material: 300056670-012
CD2400

Quality Management: Accounting

Plant: 1178 DAR Timisoara Pr

Period 004.2023 Period 003.2023

General Valuation Data

Total Stock: 10.8

Division: 10

Valuation Class: 7900

VC: Sale Ord. Stk

Project Stock VC

Prices and Values

Currency Type: Company Code Curre

Ledger: 0L

Currency: Company Code Curre

Valuation View: Legal

Currency Key **RON**

Standard Price: 1.397,25

Price Unit **1.000**

Price Control: S

MM1000 **KP27**

RON	MIN	QTY.	MIN
2.720,10 €	1.000	100	1,13
6,15 €	2,260	200	2,260
1,00 €	5,05 RSD		
31,04 RSD	2,260		1

Version: 0 DRX Plan/Actual

Period: 4 To: 4

Fiscal Year: 2023

Cost Center: 1178044950 SMT 1 TEM

€ 2.720,10 per 1.000 min.

PM1000 **KP27**

RON	MIN	QTY.	MIN
6.976,33 €	10.000	100	2
3,15 €	4,520	200	4,520
1,00 €	5,05 RSD		
15,92 RSD	4,520		

Version: 0 DRX Plan/Actual

Period: 4 To: 4

Fiscal Year: 2023

Cost Center: 1178044950 SMT 1 TEM

€ 6.976,33 per 10.000 min.

Group: 10045522 Group Counter: 1 BOP_CD2400_Pr01_Pc01_MB_W214_049

Material: 300056670-012 CD2400

Sequence: 0 Sequence Desc:

Operation Overview

Op...	SOp	Work C...	Plant Co...	Standar...	Description	L...	P...	Cl...	O...	P...	C...	S...	Base Quantity	U...	Labor	U...	Activ...	Machine	U...	Activ...
0005	10000001	1178	Z002	30104	check-Quality Inspection-white color								100	PC						
0010	40007701	1178	ZP01	30555	lasering-SMT lasering-plate								100	PC	2,260	MIN	PK1000	6,130	MIN	PK1000

300056669-002	MM03		590003501-001	MM03	
RON	QTY		RON	QTY	
144,28 RSD	1.000		31,43 RSD	1.000	
28,86 RSD	200		7,54 RSD	240	
Prices and Values			Prices and Values		
Currency Type	Company Code	Currency	Currency Type	Company Code	Currency
Ledger	0L		Ledger	0L	
Currency	Company Code	Currency	Currency	Company Code	Currency
Valuation View	Legal		Valuation View	Legal	
Currency Key	RON		Currency Key	RON	
Standard Price	144,28		Standard Price	31,43	
Price Unit	1.000		Price Unit	1.000	
Price Control	S		Price Control	S	

Overhead cost calculation:

- MOH: MOH% * material costs = 1,8% * RON 125,65 = **RON 2,26**
- POH: POH% * (MM1000 + PM1000) = 104,7% * RON (31,4 + 15,92) = **RON 49,17**

Simulation with manual feedbacks (CO11N) done. Production Order #10039264 on
Teco:

der

10039264

Type

ZP09

terial

300056670-012

CD2400

Plant

1178

quence

0

0 Standard sequence



Components



PRT



Trigger points

CO11N

Operation Overv.

Op.	Operation Short Text	Co...	StdText	Work C...	SysStatus	Start	Start	Operation Qty	Confirme...	Confirmed Sc...	Processin...	U
0005	check-Quality Inspection-	ZQ02	30104	10000001	ICHA REL...	25.04.2023	23:57:19	200	0	00,0		
0010	lasering-SMT lasering-plate	ZP01	30555	40007701	CNF ICH...	25.04.2023	23:57:19	200	200	02,3	M	
0020	soldering-imprint SMT sol...	ZP01	30560	40007701	CNF ICH...	25.04.2023	24:00:00	200	200	00,0		
0030	check-inspection-solder p...	ZP01	30570	40007701	CNF ICH...	25.04.2023	24:00:00	200	200	00,0		
0040	equip-SMT 1. side-	ZP01	30468	40007701	CNF ICH...	25.04.2023	24:00:00	200	200	00,0		
0045	check-Quality Inspection-	ZQ02	30104	10000001	CNF REL...	25.04.2023	24:00:00	200	170	300,0		
0050	process time-reflow oven-	ZP01	30558	40007701	CNF REL...	25.04.2023	24:00:00	200	170	00,0		
0060	check-AOI optical inspec...	ZP01	30557	40007701	CNF ICH...	25.04.2023	24:00:00	200	170	00,0		
0330	check-Quality Inspection-	ZQ02	30104	10000001	REL TECO	25.04.2023	24:00:00	200	0	00,0		
0340	testing-packaging-Check ...	ZP01	30464	40008901	CNF ICH...	25.04.2023	24:00:00	200	170	00,0		

Work-Around BR214 Project in TEM (Melexis/ Elmos)

Alert: Currently not released for other projects - how to apply this in future under clarification

Due to the critical market on Electronic Components an alternative supplier for the 565865 Melexis controller needed to be developed. The decision was done for a controller from 553861 Elmos.

Due to the several systems breaks e.g., Altium, Teamcenter, SAP, MES2 and ASM a complicated manual process needed to be implemented. This chapter will show you the solution.

A manual test file being created on high-level. Details see below:

Here the timeline how this request being addressed:

Here you can see the situation and the problem how to be solved with manual efforts against current DRX standard release:

50% : 50 %

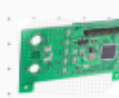
300056655-013 ELFE MELEXIS
300077907-001 ELFE (ELMOS)



Different SYE Platines

50% : 50 %

300056684-013 ELFE MELEXIS
300077899-001 ELFE (ELMOS)



Different SYE Platines

50% : 50 %

300056688-013 ELFE MELEXIS
300076874-001 ELFE (ELMOS)



Different SYE Platines

Component No.	Description	Melexis	Elmos	Supplier
300056653-004	2274_BR214_EKE_LIN_RGB.PrjPc	1		SYE
590005680-001	1uF_50V_ST5	2		RM Components
590001129-001	220pF_50V	1		Rutronik
590005636-001	S-SOD4004-SH	1		Beck
590005910-001	MLX81113KDC-BBB-008-RE	1		Melexis
590005232-002	CON_AMB_PIN_HEADER_4pol	1	1	Kenta
590005362-001	LRTBGVSR-V1V2-MW+BABB-DR-	1	1	Rutronik
300077905-001	2274_BR214_EKE_LIN_RGB.PrjPc			1 SYE
590005826-001	1uF_50V_ST5			2 Beck
590004499-001	220pF_50V			1 Beck
590005253-001	S1GLWHRQG			1 Arrow
590006036-001	E52139B80D650			1 Elmos

Alt to 5680

Alt to 1129

Alt to 5636

Component No.	Description	Melexis	Elmos	Supplier
300056683-004	2276_BR214_UL_LIN_RGBW.PrjPcbPW	1		SYE
590005680-001	1uF_50V_ST5	2		RM Comp.
590001129-001	220pF_50V	1		Rutronik
590005636-001	S-SOD4004-SH	1		Beck
590005910-001	MLX81113KDC-BBB-008-RE	1		Melexis
590005232-002	CON_AMB_PIN_HEADER_4pol	1	1	Kenta
590005362-001	LRTBGVSR-V1V2-MW+BABB-DR+S2T	1	1	Rutronik
590005221-001	STW8E12YE-S0T0-G22G43-Y0Z0	1	1	Amet
300077897-001	2276_BR214_UL_LIN_RGBW.PrjPcbPW			1 SYE
590005826-001	1uF_50V_ST5			2 Murata
590004499-001	220pF_50V			1 Beck
590005253-001	S1GLWHRQG			1 Arrow
590006036-001	E52139B80D650			1 Elmos

Alt to 5680

Alt to 1129

Alt to 5636

Component No.	Description	Melexis	Elmos	Supplier
300056687-003	2303_BR214_EKE_LIN_RGB_H.PrjP	1		SYE
590005680-001	1uF_50V_ST5	2		RM Comp.
590001129-001	220pF_50V	1		Rutronik
590005636-001	S-SOD4004-SH	1		Beck
590005910-001	MLX81113KDC-BBB-008-RE	1		Melexis
590005362-001	LRTBGVSR-V1V2-MW+BABB-DR+S	1	1	Rutronik
300076872-001	2303_BR214_EKE_LIN_RGB_H.PrjP			1 SYE
590005826-001	1uF_50V_ST5			2 Murata
590004499-001	220pF_50V			1 Beck
590005253-001	S1GLWHRQG			1 Arrow
590006036-001	E52139B80D650			1 Elmos

Alt to 5680

Alt to 1129

Alt to 5636

Altium has created an alternative ELFE part number with the Elmos controller 590006036-001. But no linkage to any upper material for Burn-In, Milling to final AMB assembly. You can only retrieve the materials (e.g., 300070039-012/ 300070038-012) for ELFE Melexis (e.g., 300056655-013). Meanwhile the upper materials for Burn-In and Milling for the Elmos being created in Teamcenter and shown as red material numbers in the above screenshot.

Furthermore, Daimler insists that certain Lasering incl. DMC Code and Q-Level being applied on the plastic lid on the final assembly level, **EVEN** only one part per variant exists. MES2 can only laser the correct data if in the final production order (FAUF) a different BOP and/ or BOM Alternative No. will be transmitted.

Furthermore, in the BOM of the Elmos alternative three more alternatives for other components are being listed as well:

- 590005680-001 1uF_50V_ST5 from RM Components can be exchanged by 590005826-001 1uF_50V_ST5 from Murata
- 590001129-001 220pF_50V from Rutronik can be exchanged by 590004499-001 from Beck
- 590005636-001 S-SOD4004-SH can be exchanged by 590005253-001 S1GLWHRQG from Arrow



Xu Tianyi TC12

An Alupoaie Bianca-Alina OC3111; Becker Werner OG11

Cc Cristolovean Livia TI-RO15; Blidariu Andreea-Georgiana OC-TEM32; Vlaga Paul OC-TEM621; Vlaga Denis-Mihai OC231

Internal

Beginnen Sie alle Ihre Antworten mit:

Ok, thank you.

Ok, thanks for letting me know.

Ok, thanks for the update.

Feedback

Hi Alina,

I had a call with Werner.

Yes, unfortunately we have to adjust the BOM manually.

BR

Tianyi

Workarounds:

1. Roughly a split between Melexis and Elmos of 50%:50% to be achieved
2. Additional demand against existing call-off to be reflected (list of ALK Marschall)
3. The 3 alternative components in the Elmos BOM should not be ordered since those were already ordered / forecasted by the Melexix BOM
4. Correct Lasering via MES2 to be secured
5. Leadtime for first production to Elmos controller approxm. 6 weeks

Solution 1: Split Melexis and Elmos 50%:50%

Parallel a new ECR being started by BOM Manager to create the missing upper materials for Elmos Aging/ Milling. Until "old" phase-out versions being used instead. In the following only one example for 106237115-014 BR214_EKE_LIN_RGB being showed. This solution needed to be done for the other 24 materials as well:

CS02 on 106237115-014:

Include another item with the same Item number 0050:

Then double-click on both Item "0050" to maintain **AltItemGroup** as follows:
Here Elmos:

Here Melexis:

BOM item	
Item Number	0050
Component	300070038-012
	ZSB Platine EKE_LIN_RGB_Milling
Item category	L Stock item
Item ID	00000002
Sort String	
Sub-item ID	
Seg. ma	
Quantity Data	
Quantity	100 PC Fixed Quantit
Operation scrap in %	0,00 Component :
Net ID	☒
PS4(1)/500 Alternative Item Data	
General Data	
Co-product	☐
AltItemGroup	01
Discontin. data	
AltItemGroup	p1
Priority	1
Strategy	2 100% check
Usage Prob.	50

In consequence, the MRP will split the demand into 2 supply chains (a) Melexis and (b) Elmos. Here an example of a Planned Order:

Material	106237115-014				
Description	BR214_EKE_LIN_RGB				
Product. Plant	1178	Order Start	07.06.2023		
Order Quantity	1.350	PC	Order End Date	08.06.2023	
Component Overview					
	Material	Description	Requirement Qty	U...	Q Plant Req. Segment
	106237121-004	BR214_EKE_Deckel_m_Stecker...	1.350	PC	1178
	106237120-005	BR214_EKE_Unterteil_m_Steck...	1.350	PC	1178
	300070038-012	ZSB Platine EKE_LIN_RGB_Milling	675	PC	1178
	300070038-011	ZSB Platine EKE_LIN_RGB_Milling	675	PC	1178

Melexis

Elmos

Melexis
Elmos

Of course, a manual adjustment of the Aging/Burn-In BOM needed to be done as well to reflect the Elmos Elfe:

Material	300070039-011	ZSB Platine EKE_LIN_RGB_Aging		
Plant	1178	DAR Timisoara Production		
Alternative BOM	1			
Position	Effectivity Initial Screen			
Material	Document	General		
Item	ICt	Component	Component description	Quantity
0010	L	300077907-001	EKE_LIN_RGB_A1	100

Manual Adjustment

Remarks: Since I used phase-out material BOP-Id and BOM-Id in the production version did not need to be adjusted. Otherwise C223 would have been applied!

Material 300070039-011

PS4(1)/500 Production Version Overview

Ve...	Production Version T	Valid from	Valid To	R...
0001	BOP_ZSB Platine EKE_LIN_RGB_Aging_Pr01_P	22.02.2022	31.12.9999	

PS4(1)/500 Production Version Details

Production Version 0001 BOP_ZSB Platine EKE_LIN_RGB_Aging_Pr01_P Check

Production Version Description

Basic data

Prod. Vers. locked	Not locked		
Minimum Lot Size	1,000	Maximum Lot Size	999.999.999,000
Valid from	22.02.2022	Valid To	31.12.9999

Planning data

	Task List Type	Group	Group Counter	Check stat
Detailed planning	N Routing	10053483	1	ok

Bill of material

Alternative BOM	1	BOM Usage	1	ok
Apportionment Struct				

Solution 2: Additional demand

From the ALK we received a list for the demands in 2023 from Melexis and Elmos. After comparison the current call-off a substantial additional demand was missing. Therefore, we applied $PIR = ZVSF$

The Excel shows only the separate demand for Melexis and Elmos Controller but not the details on finished good level (25 assemblies). Therefore, only the direct maintenance per MD61 could be done on ELFE part number level to achieve correct offsets:

Following offset being achieved:
590005910-001 Melexis:

Material	590005910-001						
Description	MLX81113KDC-BBB-008-RE						
MRP Area	1178	DAR Timisoara Production				Ex. manuf.	
Plant	1178	MRP type	P1	Material type	ZMAT	Unit	PC

Individual List

Cross-Plant View

Days

Weeks

Months

Date

GR

ST...

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A..	Period/Segment	Plnd ind.re...	Requirement	Receipts	Avail. Quan...	ATP quan...	Actual...
	Stock	PIR			1.080.395	15.591	48,4
	M 03/2023	ZVSF	31-	0	1.080.364	0	80,4
	M 04/2023		221-	0	1.080.143	0	63,4
	M 05/2023		216.440-	228.000	1.091.703	0	47,1
	17.05.23 End of Planni						
	M 06/2023		395.721-	0	695.982	0	28,1
	M 07/2023		554.961-	0	141.021	0	8,1
	M 08/2023		680.933-	691.000	151.088	0	1,9
	M 09/2023	Offset	627.684-	556.000	79.404	17.851	4,6
	M 10/2023		494.226-	509.000	94.178	60.736	4,8
	M 11/2023		650.285-	1.168.000	258.661	814.768	3,6
	M 12/2023		288.832-	480.000	93.607	15.271	4,6

590006036-001 Elmos:

Material

590006036-001

Description

E52139B80D650

MRP Area

1178

DAR Timisoara Production

Ex. manuf.

Plant

1178

MRP type

P1

Material type

ZMAT

Unit

PC

Individual List

Cross-Plant View

Days

Weeks

Months

Date

GR

ST...

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A..	Period/Segment	Plnd ind.re...	Requirement	Receipts	Avail. Qua...	ATP quan...	Actual...
	Stock	PIR			1.000	1.000	1,0
	M 03/2023	ZVSF	0	1.000	2.000	1.000	35,0
	M 05/2023		0	309.000	96.140	35.189	6,0
	18.05.23 End of Planni						
	M 06/2023		0	573.000	258.926	81.898	8,0
	M 07/2023		187.876-	771.000	225.970	264.618	6,9
	M 08/2023		136.674-	906.000	262.829	203.674	5,0
	M 09/2023	Offset	607.944-	1.167.000	329.561	632.592	6,0
	M 10/2023		471.610-	876.000	245.242	398.847	7,6
	M 11/2023		476.523-	807.000	196.829	301.124	9,1
	M 12/2023		48.675-	321.000	119.542	0	5,9

Remark: As written in the Deep Dive on a weekly basis the MD74 need to be applied to delete the manual-maintained PIR = ZVSF for the upcoming 6 weeks. The assumption is that real call-offs are available min. 6 weeks ahead from customer Daimler. Exceeding PIR = ZVSF being deleted and next MRP will reduce ordering outside the firm zone so risk of scrap and exceeding materials being avoided!

Solution 3: Three alternative components in the Elmos BOM

Before this manual procedure described here the regular demand was ordering all the components via the Melexis BOM structure. Since all E/E parts have long lead-times a new ordering of the alternatives made no sense. Hence the BOM of the Elmos ELFE parts needed to be adjusted as well:

Material: 300077907-001 EKE_LIN_RGB_A1

Plant: 1178 DAR Timisoara Production

Alternative BOM: 1

Position: Effectivity Initial Screen

Material Document General

Item	ICt	Component	Component description	Quantity	U...	A...	SI	Valid From	Valid to	Change No.
0010	L	300077905-001	2274_BR214_EKE_LIN_RGB.PrjPcbPWB	100	PC			01.03.2023	31.12.9999	10001158768
0020	L	590005680-001	1uF_50V_ST5	100	PC			11.05.2023	31.12.9999	
0030	L	590005680-001	1uF_50V_ST5	100	PC			11.05.2023	31.12.9999	
0040	L	590001129-001	220pF_50V	100	PC			11.05.2023	31.12.9999	
0050	L	590005232-002	CON_AMB_PIN_HEADER_4pol	100	PC			01.03.2023	31.12.9999	10001158768
0060	L	590005636-001	S-SOD4004-SH	100	PC			11.05.2023	31.12.9999	
0070	L	590006036-001	E52139B80D650	100	PC			01.03.2023	31.12.9999	10001158768
0080	L	590005362-001	LRTBGVSR-V1V2-MW+BABB-DR+S2T	100	PC			01.03.2023	31.12.9999	10001158768
0090	L	108465572-001	HILFSSTOFF - Lötpaste - S3X58-M500 (Gebi	0,005	KG			01.03.2023	31.12.9999	10001158768
0100	L	108465572-001	HILFSSTOFF - Lötpaste - S3X58-M500 (Gebi	0,005	KG			01.03.2023	31.12.9999	10001158768

In addition, the Action needs to be assigned in the BOP:
Before:

After Activity Assignment:

Material: 300077907-001 EKE_LIN_RGB_A1

Plant: 1178

Sup: 10063619 Sequence: 0 HafabOP_EKE_LIN_RGB_A1_MBW214-049

M: 00005563 Alt. BOM: 1

Item Overview

P..	L...	Path	Ite...	Component	Quantity	Sort String	U...	I...	B...	Acti...	Seq.	C	Material Description
	0	0	0010	300077905-001	100		PC	L		0010	0		2274_BR214_EKE_LIN_RGB.PrjPcbPWB
	0	0	0020	590005680-001	100		PC	L		0100	0		1uF_50V_ST5
	0	0	0030	590005680-001	100		PC	L		0100	0		1uF_50V_ST5
	0	0	0040	590001129-001	100		PC	L		0040	0		220pF_50V
	0	0	0050	590005232-002	100		PC	L		0100	0		CON_AMB_PIN_HEADER_4pol
	0	0	0060	590005636-001	100		PC	L		0040	0		S-SOD4004-SH
	0	0	0070	590006036-001	100		PC	L		0040	0		E52139B80D650
	0	0	0080	590005362-001	100		PC	L		0100	0		LRTBGVSR-V1V2-MW+BABB-DR+S2T
	0	0	0090	108465572-001	0,005		KG	L		0080	0		HILFSSTOFF - Lötpaste - S3X58-M500 (Gebi
	0	0	0100	108465572-001	0,005		KG	L		0020	0		HILFSSTOFF - Lötpaste - S3X58-M500 (Gebi

Remark: Please make the assignment on all BOP's where manual BOM adjustments being made!

Solution 4: Correct Lasering

Production Planner

With the above-mentioned steps, we have achieved a correct ordering. Certain manual steps need to be made by the production planner to address the right content either Melexis ELFE or Elmos components on assembly part level.

Before another Production version needs to be maintained via C223:

Ver...	Production Version T	Valid from	Valid To
0001	MELEXIS	11.07.2022	31.12.9999
0002	Needed for VAM6; Req. by Mr. Hebenstreit	12.08.2022	28.02.2024
0003	ELMOS	09.05.2023	31.12.9999

Since min. 2 versions are valid on the same time the leading version must be on Pos. 1. In our case the regular one from Teamcenter Version 0001. Here the BOP-Id is 10045485 and the BOM-Id is Alternative BOM 1.

Production Version		0001 MELEXIS	Check
Basic data			
Prod. Vers. locked	Not locked		
Minimum Lot Size	1,000	Maximum Lot Size	999.999.999,000
Valid from	11.07.2022	Valid To	31.12.9999
Planning data			
	Task List Type	Group	Group Counter
Detailed planning	N Routing	10045485	1
			Check stat
			○▲○
Bill of material			
Alternative BOM	1	BOM Usage	1
			○▲○
Apportionment Struct			

In this BOM 1 the manual maintenance of the AltItemGroup "Melexis/ Elmos" being reflected to achieve the correct MRP 50% : 50%.

The Production Version 03 reflects a new manual created Alternative BOM 3:

Production Version	0003	ELMOS	Check	
09.05.2023				
Basic data				
Prod. Vers. locked	Not locked			
Minimum Lot Size	1,000	Maximum Lot Size	999.999.999,000	
Valid from	09.05.2023	Valid To	31.12.9999	
Planning data				
	Task List Type	Group	Group Counter	Check stat
Detailed planning	N Routing	10045485	1	00■
Bill of material				
Alternative BOM	3	BOM Usage	1	00■
Apportionment Struct				

This version 3 has only the relevant Elmos Milling part number so the respective production orders give MES2 the correct information via the BOP-BOM-Id:

When now the production planner is converting the Planned Order (PLAUF) to the Production Order (FAUF) the system checks the current stock of the 2 alternatives 300070038-012 Melexis Milling and Elmos Milling 300070038-011. AltItemGroup priority is 300070038-012 Melexis:

If MES2 has no problem with the item Elmos 300070038-011 with 0 qty. no further adjustment by the production planner is necessary. The FAUF being created with production version 0001:

Only in the case if no further stock of Melexis Milling parts but Elmos Milling parts exist the production planner needs to change the production version **manually**:

Material: 106237115-014 BR214_EKE_LIN_RGB Plant: 1178

Status: CRTD BCRQ MACM SETC

General Assignment Goods Receipt Control Dates/Quantities **Master Data** Long Text Administration

QA1(1)/500 Read PP master data QA1(1)/500 Select Production Version for Material 106237115-014 Plant 1178

Production Version: 0001

Basic Dates:

Product...	Plant	Valid from	Valid To	Minimum Lot Size	Maximum Lot Size
0001	1178	11.07.2022	31.12.9999	1,000	999.999
0002	1178	12.08.2022	28.02.2024	1,000	999.999
0003	1178	09.05.2023	31.12.9999	1,000	999.999

Basic Finish: 08.06.2023
Basic Start: 07.06.2023

Routing: New Routing ☒
Explosion Date: 07.06.2023

Bill of Material: New BOM ☒
BOM Explosion Date: 07.06.2023

Choose Versions: Overview Cancel Selection

Then the components are changed to a single item 300070038-11 Elmos Milling:

Material: 106237115-014 BR214_EKE_LIN_RGB Plant: 1178

Type: ZP01

Production Version 0003 Elmos

Component Overview

Item	Component	Description	Reqmt Qty	U...	I...	Op...	Se...	Plant	St
0010	106237121-004	BR214_EKE_Deckel_m_Steckerkragen	1.350	PC	L	0010	0	1178	40
0020	106237120-005	BR214_EKE_Unterteil_m_Steckerkrag...	1.350	PC	L	0010	0	1178	40
0030	300070038-011	ZSB Platine EKE_LIN_RGB_Milling	1.350	PC	L	0010	0	1178	40

Material	106237115-014									
Description	BR214_EKE_LIN_RGB									
MRP Area	1178	DAR Timisoara Production								
Plant	1178	MRP type	PD	Material type	ZMAT	Unit	PC			

Individual List										
Cross-Plant View										

A..	Date	MRP ...	MRP element data	Rescheduli...	E..	Receipt/Reqmt	Available Qty	Pr...	St...	Page
	16.05.2023	Stock					860			
	16.05.2023	CustSt	0600024188/000120				0			
	05.05.2023	SchAgr	0600024188/000120/0...			1.350-	1.350-			
	15.05.2023	PrdOrd	000010051010/ZP01	20.04.2023	10	1.350	0	0003	4000	
	31.05.2023	PrdOrd	000010051013/ZP01			1.350	1.350	0001	4000	
	09.06.2023	PrdOrd	000010051014/ZP01			1.350	2.700	0003	4000	
	14.06.2023	PldOrd	0009750730/SO			1.350	4.050	0001	4000	

Screenshots from MES2 - Elmos has a different BOM Alternative e.g. 2:

MTO I Order Control Center											
orders											
Batchnr	PPS Ident	Article	Description	Status	Task List Gr...	BOM ID	Group Counter	BOM Usage	BOM Alterna...	Is valid?	Finis
P010056168	10056168	106237117-015	BR214_UL_LI...	CREATED	10045516	00005173	1	1	2	☒	

cles [Main orders: 20230522 P010056168 106237117-015]									
Articl...	Work...	Workcenter...	Qty (gr...	Calculated Q...	Qty net	Article nr	Original FPNR	Description	
1	10	3041900	900	1		106237055-005	DBMG935105	BR214_UL_Gehaeuse	
2	10	3041900	900	1		106237076-003	DBMG936103	BR214_UL_Streuscheibe	
3	10	3041900	900	1		300088994-001		ZSB Platine UL_LIN_RGBW_Milling_EL	

Next step is to involve respective specialists to adjust manually the ELFE Pick-and-Place for the ASM Manager file since 3 components being adjusted manually for the Elmos ELFE parts:

- 300077907-001
- 300076874-001
- 300077899-001

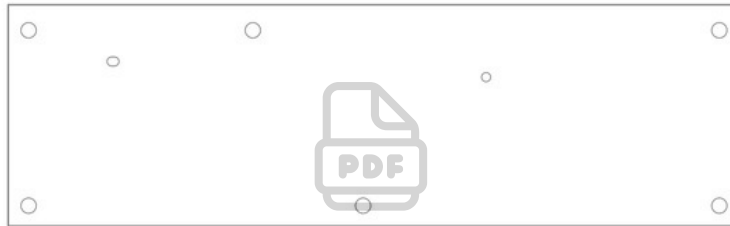
Following files being needed (here samples):

- Pick-and-Place

- Raw PCB Platine drawing

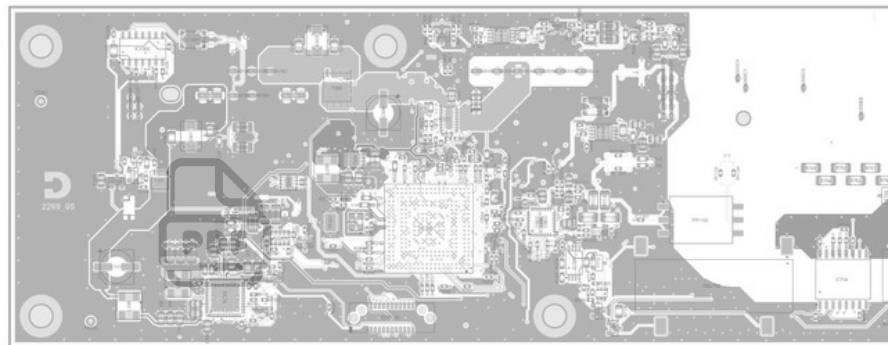


6	Dielectric2	FR-4	0,800mm	4,2	
7	Pre-Layer_2	Copper	0,025mm		
8	Dielectric3	FR-4	0,150mm	4,2	
9	Bottom Layer	Copper	0,043mm		
10	Bottom Solder	Solder Resist	0,010mm	3,5	
11	Bottom Over Lay				

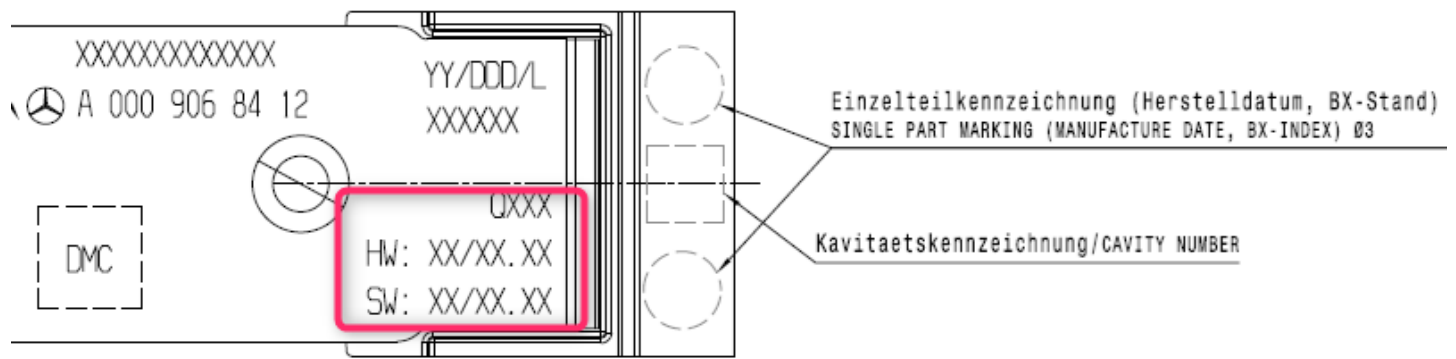


 DRAXLMAIER			Substrate Lead	Document Type
	Layer	Date	Name	Author/Designer
	Customer	27.08.2022	Woodner Ulrich	Project Name
	Approval	05.05.2022	M. Gaudy	BMC Entry
	Fabrication	04.05.2022	A. Biedermann	Material

- Final ELFE Assembly drawing



Next step is to involve respective MES2 specialists to implement the special lasering on the assembly parts:



Top view

DMC nach/ACC. TO MBN 10007-1

DMC Inhalt/CONTENT (nach/ACC. TO QEV111AIQE9I)	
Stellen/ POSITION	Inhalt/ CONTENT
01	1 statt A/ 1 INSTEAD OF A
02-11	MB LU/ZB Sachnummer MB SCOPE OF DELIVERY/ASSEMBLY NUMBER
12-14	E/Q Stand
15-16	Jahr/ YEAR
17-19	Tag des Jahres/ DAY OF THE YEAR
20	Nummer der Montagelinie/ ASSEMBLY LINE NUMBER
21-26	Laufende Nummer/ SERIAL NUMBER
27-32	HW Nummer/ HW NUMBER

Current logic based on the Engineer in line with Daimler:

Melexis:

- M (not applicable since it cost too much cycle time) / Q002 (based on 16.05.2023) and after PPAP release M / Q003
- HW: 21/44.00
- SW: 22/05.00

Elmos:

- E (not applicable since it cost too much cycle time) / Q003
- HW: 22/55.00
- SW: 23/11.00

Remarks:

This 100% description is not yet final released but under clarification. Furthermore, a software bug was found in the Elmos controller 590006036-001. Therefore, a new version will be released soon (590006036-002). Unfortunately, all parts need to be revised as well even up to Electric parts in ZRE to manage a Q-release Q004. PPAP parts need to be produced and green release by Daimler to be expected in August. The transition scenario until needs to be further discussed.

In addition sampling tests needs to be done to check if this scenario works out well as described above.

Solution 5: Leadtime for first production to Elmos controller approxm. 6 weeks

Since the switch from 100% Melexis to 50% Melexis and 50% Elmos being planned in approxm. 6 weeks the MRP planning must be set via additional production versions as well validity dates. Overall, 78 production versions being created:

78 Production Version necessary



VAM5

VAM6

Material	PV	Text Productionversion	Valid from	Valid until	StuckiAlter native	BOP No.	BOP Counter	Production Line	FST	MES
106237115-014	0001	EKE_LIN_RGB_Melexis	11.07.2022	16.07.2023	1	10045485	1	40009301	Melexis-Auto	Melexis
106237115-014	0002	EKE_LIN_VAM6_Melexis	12.08.2022	16.07.2023	2	10045485	3-VAM6	40009801	Melexis-VAM6-Manual	Melexis
106237115-014	0003	EKE_LIN_RGB_Melexis_Elmos	17.07.2023	31.12.9999	3	10045485	1	40009301	MRP-Quote: Melexis-Auto to be checked	Melexis
106237115-014	0004	EKE_LIN_RGB_Elmos	17.07.2023	31.12.9999	4	10045485	1	40009301	Elmos-Manual	Elmos
106237115-014	0005	EKE_LIN_VAM6_Melexis	17.07.2023	31.12.9999	2	10045485	3-VAM6	40009801	Melexis-VAM6-Manual	Melexis
106237115-014	0006	EKE_LIN_VAM6_Elmos	17.07.2023	31.12.9999	4	10045485	3-VAM6	40009801	Elmos-VAM6-manual	Elmos
106237117-015	0001	UL_LIN_RGBW_schwarz_Melexis	03.10.2022	16.07.2023	1	10045516	1	40010201	Melexis-Auto	Melexis
106237117-015	0002	UL_LIN_RGBW_schwarz_Melexis_Elmos	17.07.2023	31.12.9999	2	10045516	1	40010201	MRP-Quote: Melexis-Auto to be checked	Melexis
106237117-015	0003	UL_LIN_RGBW_schwarz_Elmos	17.07.2023	31.12.9999	3	10045516	1	40010201	Elmos-Manual	Elmos
201027774-003	0001	EKE MODUL RGB_Melexis	21.02.2023	16.07.2023	1	10052647	1	40009701	Melexis-Auto	Melexis
201027774-003	0002	EKE MODUL RGB_Melexis_Elmos	17.07.2023	31.12.9999	2	10052647	1	40009701	MRP-Quote: Melexis-Auto to be checked	Melexis
201027774-003	0003	EKE MODUL RGB_Elmos	17.07.2023	31.12.9999	3	10052647	1	40009701	Elmos-Manual	Elmos
201027777-003	0001	EKE MODUL RGB_Melexis	21.02.2023	16.07.2023	1	10052648	1	40009701	Melexis-Auto	Melexis
201027777-003	0002	EKE MODUL RGB_Melexis_Elmos	17.07.2023	31.12.9999	2	10052648	1	40009701	MRP-Quote: Melexis-Auto to be checked	Melexis
201027777-003	0003	EKE MODUL RGB_Elmos	17.07.2023	31.12.9999	3	10052648	1	40009701	Elmos-Manual	Elmos

Melexis until
July

Elmos manually
from Aug

Melexis/ Elmos
from Aug

8.05.2022 214 AMB Melexis_Elmos | Becker Werner OG11

Here an example how the production versions being set:

Material

Material

106237117-015

PS4(1)/500 Production Version Overview

Production Version Overview

Ve...	Production Version T	Valid from	Valid To	R...
0001	UL_LIN_RGBW_schwarz_Melexis	03.10.2022	16.07.2023	☐
0002	UL_LIN_RGBW_schwarz_Melexis_Elmos	17.07.2023	31.12.9999	☐
0003	UL_LIN_RGBW_schwarz_Elmos	17.07.2023	31.12.9999	☐

When PLAUF to FAUF being set and no Melexis sub-component available the production planer needs to switch master data manually to production version 0003 Elmos.

Here the file as an overview for all production versions:

Knowledge Transfer CRP HV - Solution Design & Build - Ses...



HV manufacturing control – system demo

Illustration of the Digital Core approach future handling in synopsis

November 22nd and 23rd 2022, M. Arnold, D. Pichlmaier, K. Dimitrov, A. Ajmeri, M. Huber, J. Thum

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