Electrolux

HW development

Process overview Electrolux
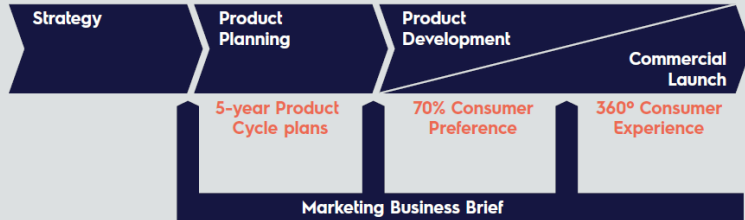**Leif Vikström**

9/23/2019

- Electrolux development process, Innovation Activation

- Product development

- Embedded development

- Hardware development

- Case study 1

- Case study 2

Innovation Activation

Our process

Strategy	**Product Planning**	**Product Development**
	5-year Product Cycle plans	70% Consumer Preference

Commercial Launch

360° Consumer Experience

Marketing Business Brief

IA

IPP

MBB

i2i

AD

PD

CL

Process

Project feasibility	Product concept definition & validation	Engineering solution & verification	Process engineering	Product reliability & process verification	Production start-up	Project evaluation

DS   CPPF   CP00   CP0   CP1   CP2   CP3   CPFB
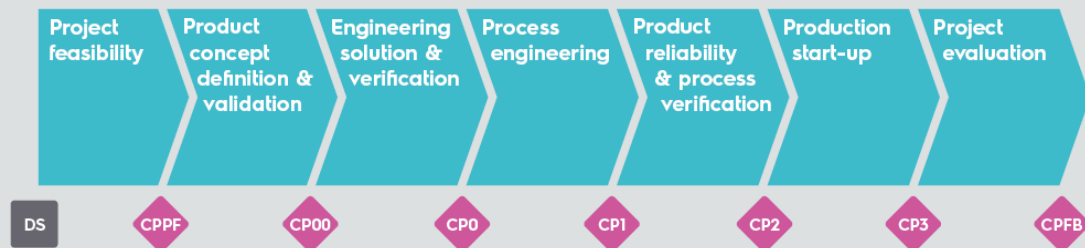
The Electronic project phases
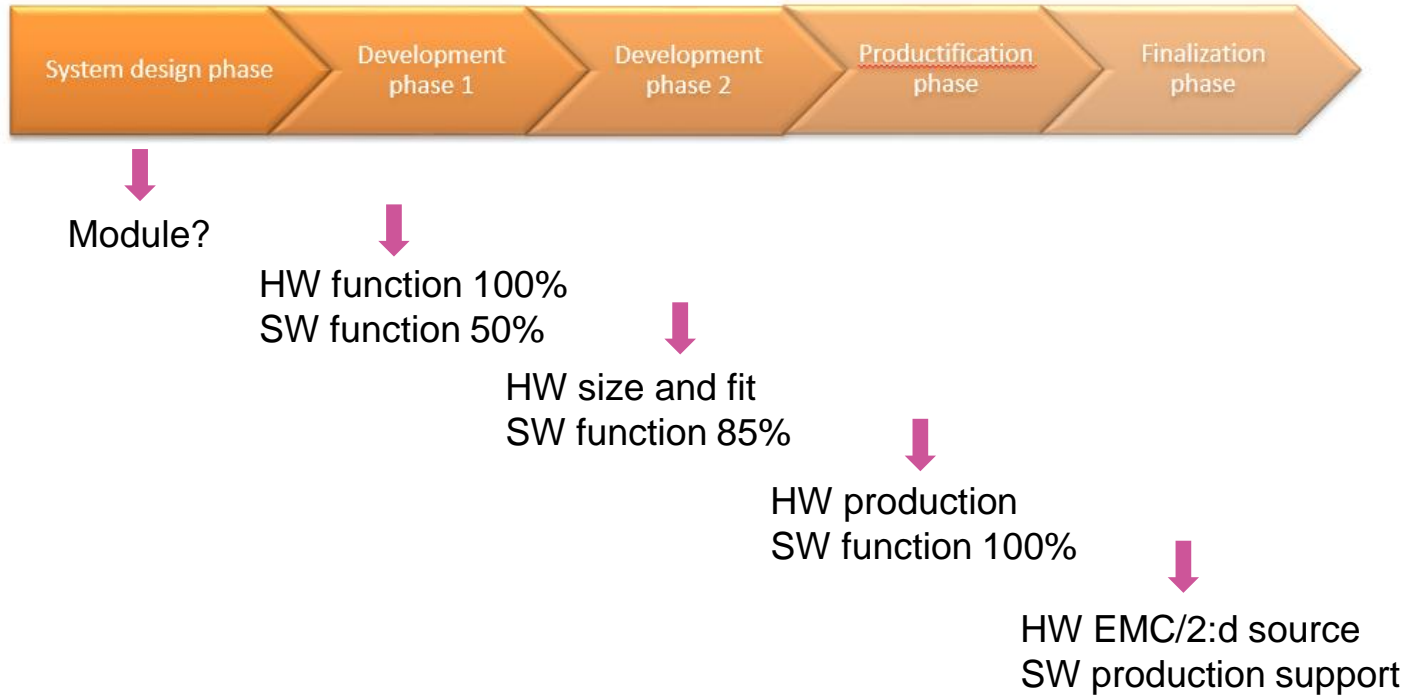
System design phase	Development phase 1	Development phase 2	Productification phase	Finalization phase

DS   CPPF   CP00   CP0   CP1   CP2

Embedded Development

| System design phase | Development phase 1 | Development phase 2 | Productification phase | Finalization phase |

Module?

HW function 100%
SW function 50%

HW size and fit
SW function 85%

HW production
SW function 100%

HW EMC/2:d source
SW production support
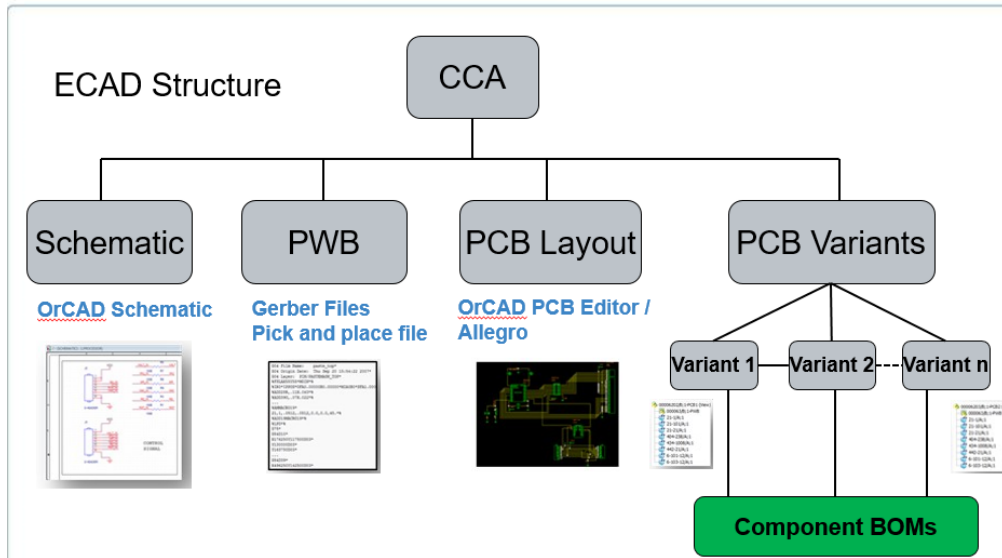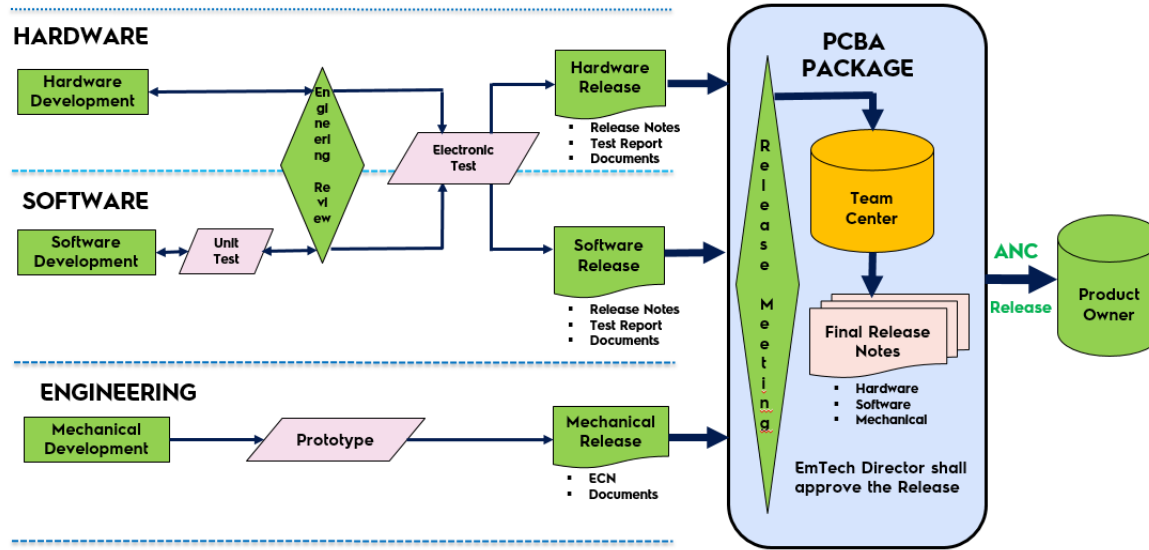
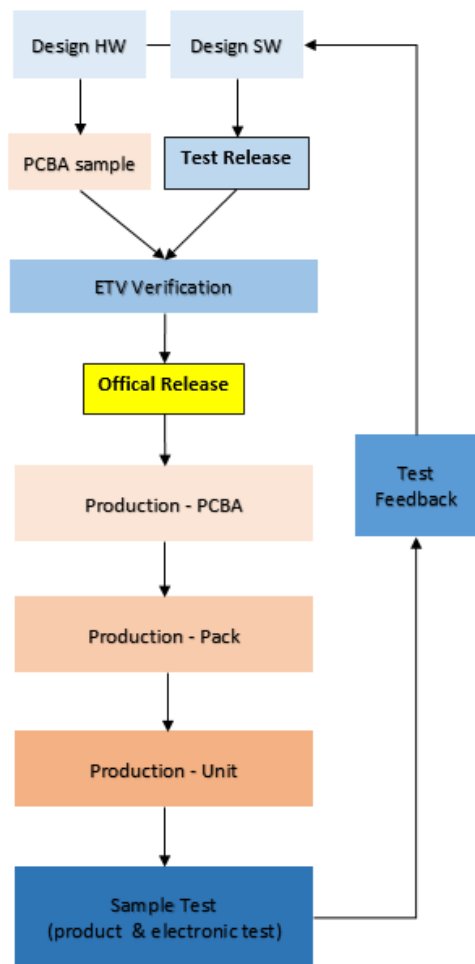Problem: We need to release non-verified designs

Question: What is the proper way to handle this deviation from CM point of view?

Process clearly say we need to test before release but this does not always work because of …

Flowchart

Design HW → PCBA sample

Design SW → Test Release

PCBA sample + Test Release → ETV Verification → Offical Release → Production - PCBA → Production - Pack → Production - Unit → Sample Test (product & electronic test) → Test Feedback → Design SW

Schedule

	Holiday	EmTech HW	EmTech SW	ETV	HeT	BMZ	Chunju
		Shanghai	Shanghai	Shanghai	Shenzhen	Shenzhen	Suzhou
W31						FOT	
W32		Design HW update -based on PCBA FOT -w/o FOT Test Feedback	Design SW Update w/o FOT Test Feedback				
W33							
W34							
W35		Offical Release – PS1 BOM Release					
W36		Offical Release – PS1 Gerber Release					
W37			Test Release – PS1 SW	Verification – PS1 SW			FOT
W38					PS1		
W39			Offical Release – PS1 SW @ W39.5		SMT		
W40	National Day						
W41					Test	Preperation	
W42		HW update -based on PCBA PS1 -w/o PS1 Test Feedback				PS1	
W43						Transport	
W44							PS1
W45		Offical Release – PS2 BOM Release		Sample Test – PS1			
W46		Offical Release – PS2 Gerber Release	Design SW Update based on PS1 Test				
W47			Test Release – PS2 SW	Verification – PS2 SW			
W48					PS2		
W49					SMT		
W50			Offical Release – PS2 SW		Test		
W51						PS2	
W52	Christmas day					PS2	
W1	New year						
W2							PS2
W3							

Problem:

- Rev D is in production (released in Teamcenter), Rev E under update (not released)

- Difference D->E is updated Layout (PCB) and updated component values (BOM) – HW update only

- Alternative components requested for Rev D by supplier but Teamcenter does not allow update until Rev E is released

- Rev E is blocked by pending prototype build, pre-series and long test time until it can be released.

Question:

What is the best way to handle this kind of deviation that is not supported by PLM system, from a CM perspective?

Input – We cannot change Teamcenter setup, Supplier request BOM to be updated or production will stop, All alternative components are verified and approved by Electrolux. MASA audit will look at this…