



Technology with Vision

## Integration Level of Components (ILC)

Detailed description and planning of Integration Level of Components (ILC) for light modules.

27.09.2024, Grutter / Machycek / Sonnenkemper, Lippstadt  
– Mohelnice

AD-01514

Extension of the training for the AD 00801\_GL as the 3rd stage of the training roll out for light modules.



# Integration Level of Components (ILC)

## Integration Level of Components (ILC) – motivation

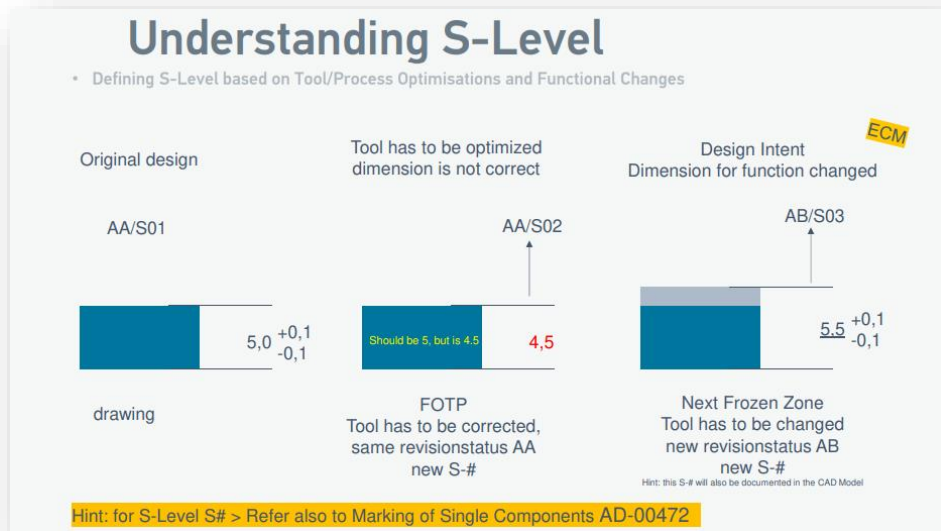
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Purpose of this document:

- This Document explains the handling of the Integration Level of single Components (ILC).  
The ILC defines a planned single piece part maturity with defined date.  
The ILC supports to coordinate the needed single piece part maturity from FOT until ISIR (DV-Phase).

# Integration Level of Components (ILC)

## Integration Level of Components (ILC) – differences between the S – levels and ILC - levels



- Headlamp team is defining the expected maturity related to timing via **ILxxx** (based on AD 00801\_GL).
- Module team is adapting and breaking down the HL request by defining **ILMxxx** on module level (based on AD 00395 with the HF 00742 for modules).
- **Tx, S0x, Ax are not possible to be planned** in RFQ phase related to timing
- The maturity has to be broken down to component level and should be able to track after FOT – **ILCxxx** (based on AD-01514 with the HF 00897 for modules).

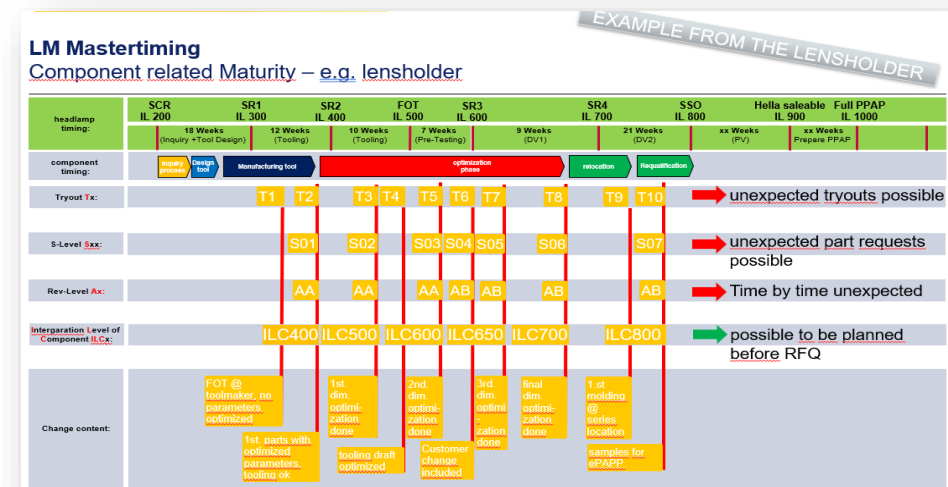
### Differences between the S – levels and ILC levels

#### S - levels

- Planning of maturity of the part beginning of FOT parts with consideration of unexpected changes.
- The S-level type can raise from FOT to SSO.

#### ILC - levels

- Goal for the maturity of the part in defined date on beginning of the project included in project timing.
- The ILC are fixed from the beginning of the project.
- By ILC are defined the milestones.



# Integration Level of Components (ILC)

## Integration Level of Components (ILC) – usage of the ILC

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- How to use ILC`s?
  - Predefine ILC maturity for DV1 and DV2 in concept phase (e.g. DV1: vibration ok, light legal)
  - Break down maturity request to component level for functional relevant components
  - Define ILCx related to timing
  - Update requirement specification with ILCx timing and forward detailed description with RFQ
  - Discuss maturity request with supplier and get commitment in feasibility study.
  - After FOT:
    - Track part maturity related to ILCx within the team and with supplier!
    - Align on deviations within the team, with headlamp and supplier if needed!

# Integration Level of Components (ILC)

## Integration Level of Components (ILC) – usage of the HF-00897\_GL

The working document for the project

Information Classification: Confidential

HF-7761EN\_C (2014-07)

### Integration Level of Components (ILC)

DIS: 1000xxxxxx

DIS number for the project specific usage

Mohelnice, 23.03.2023

HAN-H-MOD

LDE

SQA

METC

CE

LLE

MEA

# Integration Level of Components (ILC)

## Integration Level of Components (ILC) – implementation to requirement specification

### 1.5 Market conditions

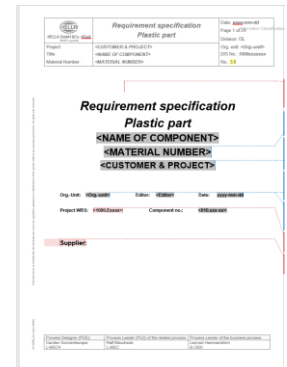
#### 1.5.1 Quantities & due dates

Task, Document	Integration Level of Components (ILC)	Date	Responsible for realization, acceptance
Delivery 3D data		yyyy-mm-dd	LDE / ME TC / part supplier
Delivery drawing		yyyy-mm-dd	LDE / ME TC / part supplier
Release start tool production		yyyy-mm-dd	ME TC / part supplier
Inspection equipment		yyyy-mm-dd	Part supplier / QPD / SQA
Delivery of first C-samples* (starting with FOT)	ILC 500	yyyy-mm-dd	Part supplier / ME TC
First measuring report submitted		yyyy-mm-dd	Part supplier / ME TC
Decorative evaluation HN67025_A		yyyy-mm-dd	QPD / part supplier
Packaging test run with serial packaging		yyyy-mm-dd	Part supplier / Plant logistics dep
Control plan		yyyy-mm-dd	Part supplier / QPD / SQA
Design Validation 1 (DV1)*	ILC 600	yyyy-mm-dd	Part supplier / ME TC
Design Validation 2 (DV2)*	ILC 700	yyyy-mm-dd	Part supplier / ME TC
Full Run AD-PD3-50-15-25-01		yyyy-mm-dd	Part supplier / SQA
ISIR/PSW (released) according to VDA Vol. 2/ AIAG documents*	ILC 800	yyyy-mm-dd	Part supplier / SQA
Process Validation (PV)	ILC 800	yyyy-mm-dd	Info

\* Description of requested part maturity for this milestone the chapter 2.1.2

**Yellow** - intergated in current version of the LAH (HF 82 55 GL).

**Blue** – planned to be integrated in next releasing loop (HF 82 55 GL).



#### 2.1.2 Component related maturity

The following tables describe the from HELLA expected component related maturity for the in chapter 1.4.1 mentioned milestones.

##### FOT – ILC 500

Dimension Requirement	<ul style="list-style-type: none"> <li>- 60% of the dimensional characteristics according to the drawing must be within the specification</li> <li>- Detailed content must be defined in Kickoff meeting between HELLA and Supplier in the document „ Integration Level of Components (ILC) definition based on – AD 01514 (HF 00897) – DIS 1000xxxxxxx Part 00X</li> <li>- First 3D measuring report according to the drawing. If contactless measuring procedure is requested see chapter 2.1.4</li> </ul>
Optical Requirement*	<ul style="list-style-type: none"> <li>- Cut of line must be detectable</li> </ul>
Deco Requirement*	<ul style="list-style-type: none"> <li>- Decorative deviations are allowed</li> </ul>
General Requirement	<ul style="list-style-type: none"> <li>- Production must not be at the series location</li> <li>- Planned automatization equipment must be available, at least a prototype handling</li> <li>- Delivery in series packaging</li> </ul>

# Integration Level of Components (ILC)

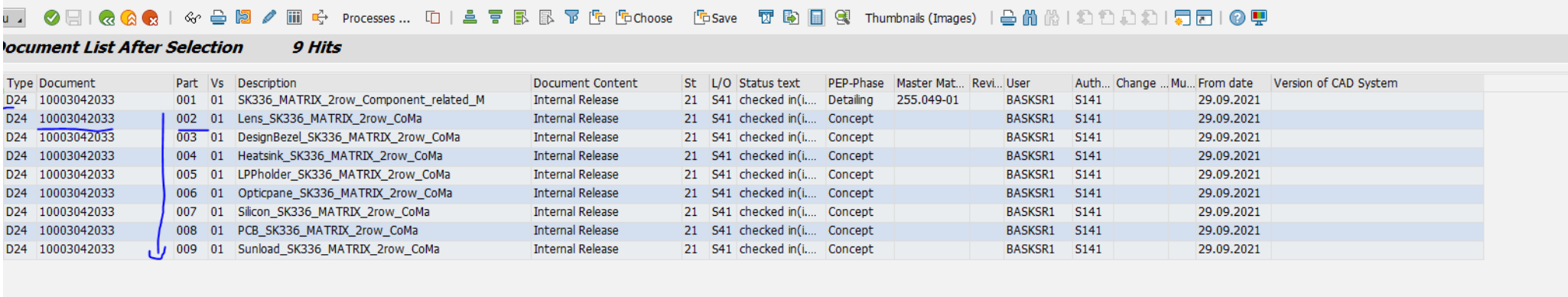
## Integration Level of Components (ILC)

### What to be place on the drawing:

„Integration Level of Components (ILC) definition based on DIS XXXXXXXXX PART XXX“.

Responsible: LDE, METC, SQA/PUR.

### Example: SK 336 2 row matrix



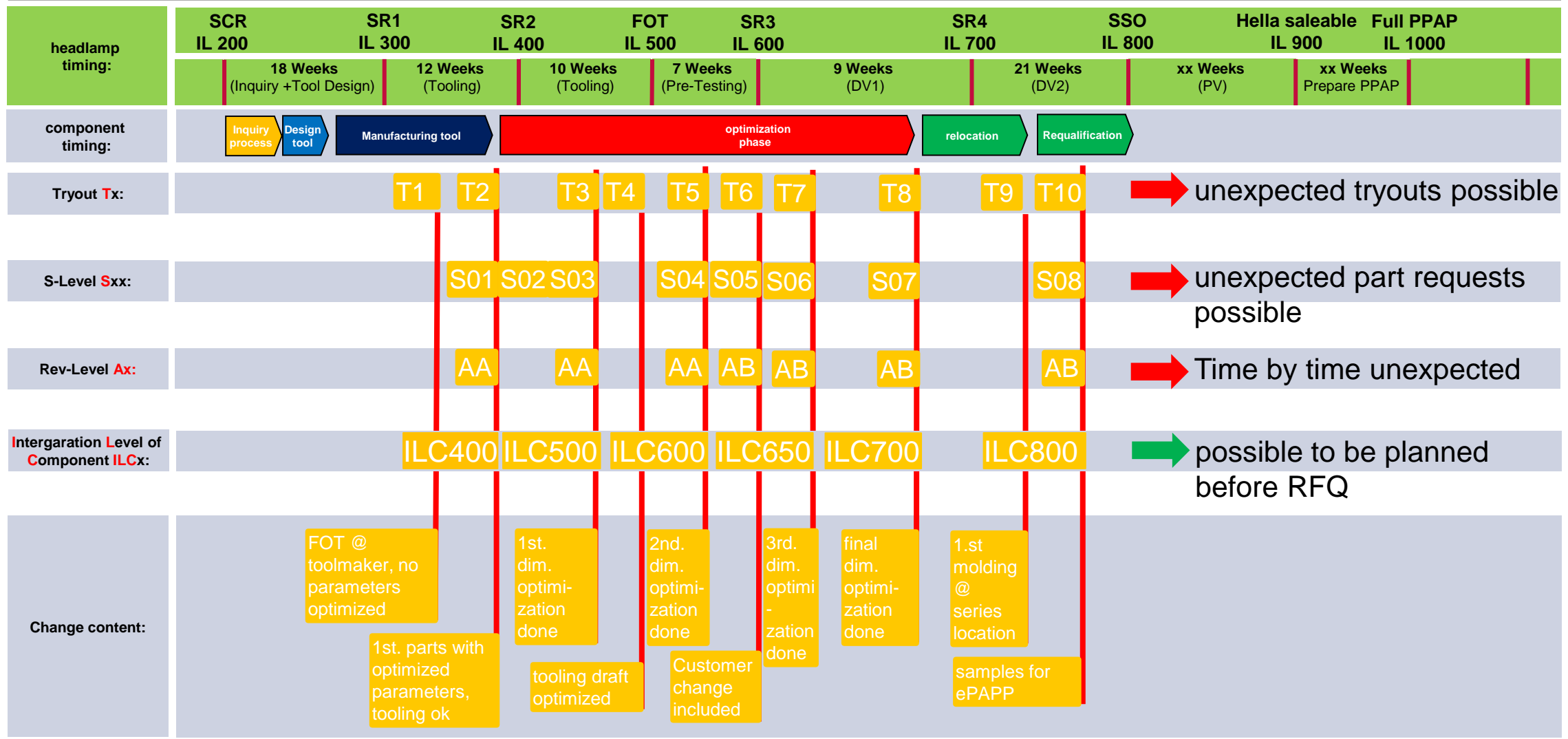
**Document List After Selection** 9 Hits

Type	Document	Part	Vs	Description	Document Content	St	L/O	Status text	PEP-Phase	Master Mat...	Revi...	User	Auth...	Change ...	Mu...	From date	Version of CAD System
D24	10003042033	001	01	SK336_MATRIX_2row_Component_related_M	Internal Release	21	S41	checked in(i...	Detailing	255.049-01		BASKSR1	S141			29.09.2021	
D24	10003042033	002	01	Lens_SK336_MATRIX_2row_CoMa	Internal Release	21	S41	checked in(i...	Concept			BASKSR1	S141			29.09.2021	
D24	10003042033	003	01	DesignBezel_SK336_MATRIX_2row_CoMa	Internal Release	21	S41	checked in(i...	Concept			BASKSR1	S141			29.09.2021	
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D24	10003042033	005	01	LPPholder_SK336_MATRIX_2row_CoMa	Internal Release	21	S41	checked in(i...	Concept			BASKSR1	S141			29.09.2021	
D24	10003042033	006	01	Opticpane_SK336_MATRIX_2row_CoMa	Internal Release	21	S41	checked in(i...	Concept			BASKSR1	S141			29.09.2021	
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D24	10003042033	009	01	Sunload_SK336_MATRIX_2row_CoMa	Internal Release	21	S41	checked in(i...	Concept			BASKSR1	S141			29.09.2021	

EXAMPLE FROM THE LENSHOLDER

# Integration Level of Components (ILC)

## Component related Maturity – e.g. lensholder

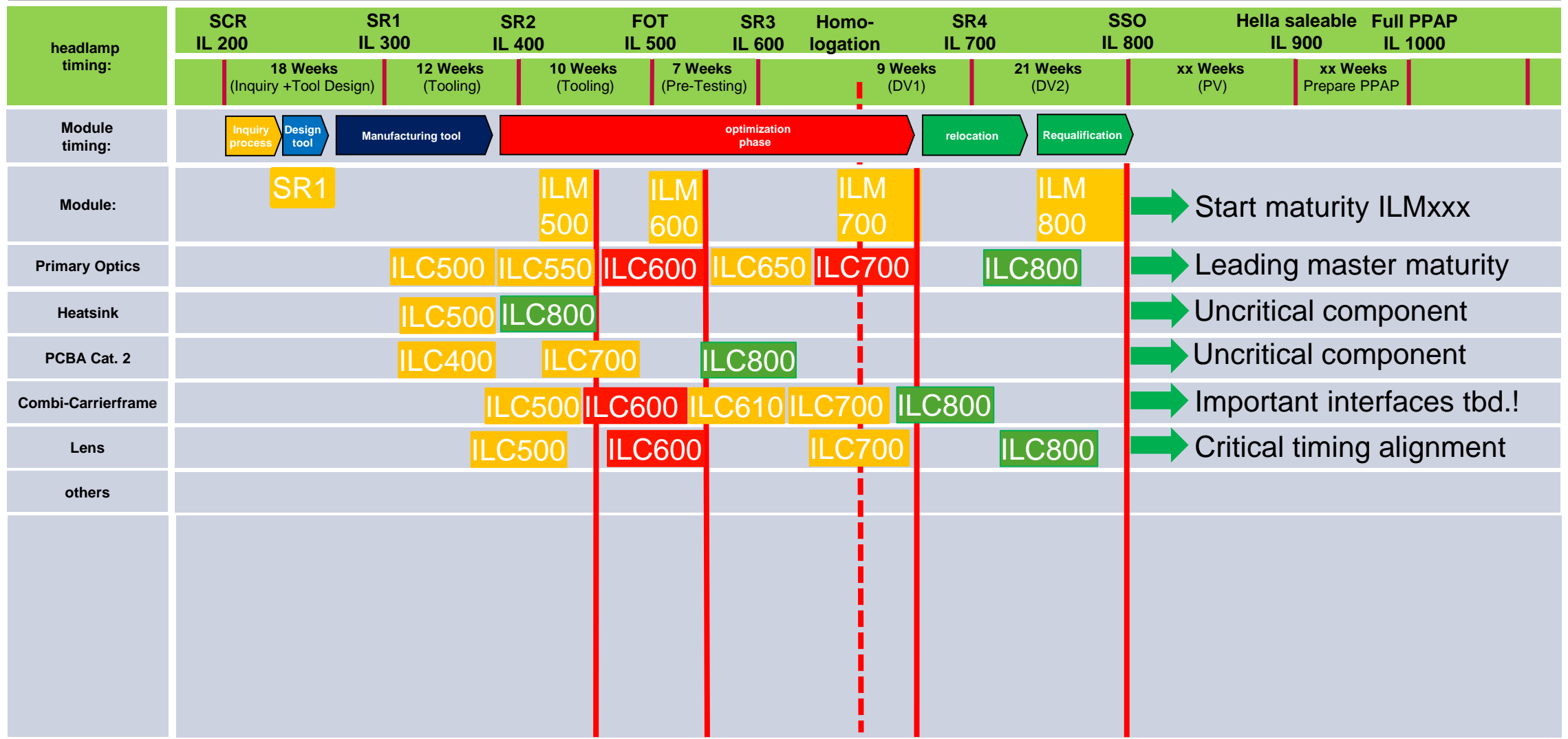




EXAMPLE FROM THE LENSHOLDER

# Integration Level of Components (ILC)

## Component related Maturity – e.g. lensholder



EXAMPLE FROM THE LENSHOLDER

# Integration Level of Components (ILC)

## Component related Maturity – e.g. lensholder

	SCR IL 200	SR1 IL 300	SR2 IL 400	FOT IL 500	SR3 IL 600	SR4 IL 700	SSO IL 800	Hella saleable IL 900	Full PPAP IL 1000
headlamp timing:	18 Weeks (Inquiry +Tool Design)	12 Weeks (Tooling)	10 Weeks (Tooling)	7 Weeks (Pre-Testing)	9 Weeks (DV1)	21 Weeks (DV2)	xx Weeks (PV)	xx Weeks Prepare PPAP	
component timing:	Inquiry process Design tool	Manufacturing tool			optimization phase	relocation	Requalification		
	ILC300	ILC500	ILC550	ILC600	ILC650	ILC700	ILC800		

Following timing is leading the Intergration Level of Component (ILC):

ILC500: CW 28/21

ILC550: CW 32/21

ILC600: CW 36/21

ILC650: CW 40/21

ILC700: CW 44/21

ILC800: CW 02/22

### Pls. notice:

- ILC has been set-up due to Lessons Learned@Hella and it`s mandatory to be followed.
- Linked drawing screenshots are only for reference, drawing is leading!
- The change content has been chosen to provide the right maturity at time for headlamp testing. If changes of the described sequence are necessary, Hella has to be informed
- A change in the timing between to ILC`s could be aligned with Hella
- ILC700 milestone and maturity is binding (ready for DV2)!



Technology with Vision

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