

WP4 Design enablement M11 monthly call

Agenda



1. PDK status update
 - PDK, roadmaps
2. Bootcamp preparation

PDK status update

T4.1 Partner status per platform in April

Partner progress at portal

Platform ID	Platform name	Responsible partner	PDK created	Release	Roadmap	Data types
M1	Aluminum oxide monolithic platform for ultraviolet photonics	UTWENTE	Available on the PDK server		Roadmap submitted	
M2	Silicon carbide monolithic platform	FBK	Available on the PDK server	0.0.1	Roadmap submitted	Yes
M3	Silicon nitride monolithic platform with piezo-electric components	UTWENTE	Available on the PDK server		Roadmap submitted	
M4	Silicon nitride visible light monolithic platform	CSIC	Available on the PDK server	0.0.1	Roadmap submitted	Yes
M5	Thick silicon nitride with SOI 200mm platform	CEA-LETI	Available on the PDK server		Roadmap submitted	Yes
M6	Stoichiometry-tunable silicon nitride monolithic platform	CSIC	Available on the PDK server		Roadmap submitted	Yes
M7	Silicon on insulator 3 μm monolithic platform	VTT	Available on the PDK server		Roadmap submitted	Yes
M8	Indium phosphide with high precision, high yield monolithic platform	TNO	Available on the PDK server		Roadmap submitted	
M9	Aluminum oxide monolithic platform for infrared photonics	UTWENTE	Available on the PDK server		Roadmap submitted	
H1	Indium phosphide coupons for hybrid platforms	TU/e	Example PDK available on the PDK server		Roadmap submitted	
H2	Layered materials including graphene hybrid platform	UCAM	Available on the PDK server		Roadmap submitted	
H3	Lithium niobate hybrid platform	SAL	Available on the PDK server		Roadmap submitted	
H4	Colloidal quantum dots hybrid platform	ICFO	Available on the PDK server	0.0.1	Roadmap submitted	
H5	Mid-infrared platform	WUT	Available on the PDK server	0.0.1	Roadmap submitted	
H6	SSCs, III-V, MO and EO devices	IMEC	Not available on the PDK server		Pending clarifications	
H7	III-V on SiNx	UPV	Example PDK available on the PDK server	0.0.1	Roadmap submitted	Yes
A1	Module building assembly platform	TNI	ADKs postponed to 2026		Pending white paper from external project	
A2	Wafer-scale assembly platform	IMEC	ADKs postponed to 2026			
T1	Measurement automation test platform	TU/e	TDKs postponed to 2026			
T2	Non-contact testing	IMDEA	TDKs postponed to 2026			
T3	Deep characterization	ICFO	TDKs postponed to 2026			
T4	High speed electrical measurements platform	IMDEA	TDKs postponed to 2026			
T5	Circuit characterization from single entry point	IT	TDKs postponed to 2026			

Contributions pending!

Focus until M12 on monolithic and hybrid design kits

Platform roadmaps



BB type	Process design kit															
	M1-UTW	M2-FBK	M3-UTW	M4-CSIC	M5-CEA-LETI	M6-CSIC	M7-VTT	M8-TUe	M9-UTW	H1-TUe	H2-UCAM	H3-SAL	H4-ICFO	H5-WUT	H7-UPV	
	8	12	10	7	9	8	10	11	8	1	4	4	1	9	12	
Act::Amplifier	3							Y		Y						M8-TUe, H1-TUe, H7-UPV
Act::Laser	2							Y							Y	M8-TUe, H7-UPV
Act::Photodiode	5				Y		Y	Y			Y		Y			M5-CEA-LETI, M7-VTT, M8-TUe, H2-UCAM, H4-ICFO
Cpl::Directional coupler	8	Y	Y	Y	Y	Y	Y		Y							M1-UTW, M2-FBK, M3-UTW, M4-CSIC, M5-CEA-LETI, M6-CSIC, M7-VTT, M9-UTW
Cpl::Multimode interference coupler	6		Y				Y	Y				Y		Y		M2-FBK, M7-VTT, M8-TUe, H3-SAL, H5-WUT, H7-UPV
Cpl::Multimode interference splitter	8		Y	Y	Y	Y	Y	Y						Y		M2-FBK, M3-UTW, M4-CSIC, M5-CEA-LETI, M6-CSIC, M7-VTT, M8-TUe, H5-WUT
Cpl::Y-junction	1													Y		H5-WUT
IO::Edge coupler	3		Y	Y	Y											M2-FBK, M3-UTW, M5-CEA-LETI
IO::Surface coupled grating	9	Y	Y	Y	Y	Y			Y					Y	Y	M1-UTW, M2-FBK, M3-UTW, M4-CSIC, M5-CEA-LETI, M6-CSIC, M9-UTW, H5-WUT, H7-UPV
IO::Thin-film coupler	1											Y				H3-SAL
Mod::Electro-absorption modulator	1										Y					H2-UCAM
Mod::Mach-Zehnder modulator	3											Y		Y	Y	H3-SAL, H5-WUT, H7-UPV
Mod::Stress-optic modulator	3	Y		Y					Y							M1-UTW, M3-UTW, M9-UTW
Mod::Thermo-optic modulator	3	Y		Y					Y							M1-UTW, M3-UTW, M9-UTW
Other::Interferometer	1														Y	H7-UPV
Other::Microring	6		Y	Y	Y	Y									Y	M2-FBK, M3-UTW, M4-CSIC, M5-CEA-LETI, M6-CSIC, H7-UPV
Other::Multiplexer	3				Y		Y								Y	M5-CEA-LETI, M7-VTT, H7-UPV
Pol::Polarization splitter	1						Y									M7-VTT
PS::Electro-optic phase shifter	6		Y			Y	Y	Y			Y	Y				M2-FBK, M6-CSIC, M7-VTT, M8-TUe, H2-UCAM, H3-SAL
PS::Stress-optic phase shifter	4	Y	Y	Y					Y							M1-UTW, M2-FBK, M3-UTW, M9-UTW
PS::Thermo-optic phase shifter	11	Y	Y	Y	Y	Y	Y		Y		Y			Y	Y	M1-UTW, M2-FBK, M3-UTW, M4-CSIC, M5-CEA-LETI, M6-CSIC, M7-VTT, M9-UTW, H2-UCAM, H5-WUT, H7-UPV
Refl::Active grating (e.g. DFB)	1							Y								M8-TUe
Refl::Multimode interference reflector	1							Y								M8-TUe
Refl::Passive grating	3							Y						Y	Y	M8-TUe, H5-WUT, H7-UPV
Sen::Transparent power monitor	1		Y													M2-FBK
Wg::Transition	3							Y						Y	Y	M8-TUe, H5-WUT, H7-UPV
Wg::Waveguide	10	Y	Y		Y	Y	Y	Y	Y					Y	Y	M1-UTW, M2-FBK, M4-CSIC, M5-CEA-LETI, M6-CSIC, M7-VTT, M8-TUe, M9-UTW, H5-WUT, H7-UPV
Wg::Waveguide bend	7	Y	Y	Y	Y		Y	Y		Y						M1-UTW, M2-FBK, M3-UTW, M4-CSIC, M6-CSIC, M7-VTT, M9-UTW
Wg::Waveguide crossing	5		Y	Y	Y		Y		Y							M2-FBK, M3-UTW, M4-CSIC, M6-CSIC, M8-TUe
Wg::Waveguide taper	1							Y								M8-TUe

Topics for bootcamp

Opportunity to develop design, model and test techniques that are platform agnostic

Need to align on terminology; Reflect on whether this is the right mix

Platform roadmaps



Table showing ambition by M60

	M1	M2	M3	M4	M5	M6	M7	M8	M9	H1	H2	H3	H4	H5	H7
	UTWENT E	FBK	UTWENT E	CSIC	CEA-LETI	CSIC	VTT	TUE	UTWENT E	TUe	UCAM	SAL	ICFO	WUT	UPV
Technology info	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available	Available
# BBs	57	6	22	13	35	12	16	38	39	3	5	5	1	19	2
Layout	Mostly black-box	Mostly black-box	Mostly black-box	Mostly black-box	Mostly black-box	Mostly black-box	Mostly black-box	All – black box	Mostly black-box	All – black box	GDS	All – black box	GDS	All – black box	All – black box
Performance data	All - first measurement	All - first measurement	Not available	All - first measurement	Various levels	All - first measurement	Mostly statistical data	All - first measurement	Mostly first meas.	All - first measurement	All - first measurement	All - first measurement	All - first measurement	Mostly first meas.	All - first measurement
Compact models	Available for 50%	Available for 50%	Not available	Available for all	Not available	Not available	Available for 50%	Available for 50%	Available for 50%	Available for all	Available for all	TBD	Not available	Available for 50%	Not available
Design rules	Not available	Unknown	Not available	Available for all	Unknown	Available for all	Available for 50%	Available for 50%	Not available	Unknown	Available for all	Available for all	Available for all	Available for 50%	Available for all
Design manual	First external release	Internal text	Not available	Not available	Not available	Not available	Iterated text	Internal text	First external release	Internal text	Internal text	First external release	First external release	Internal text	First external release

- All the roadmaps are shared within the consortium: [PIXEurope WP4 - DK roadmaps.xlsx](#)

Bootcamp

PIX·EUROPE

Design WP4 HE
Kevin Williams, Callum Littlejohns
Online (MII) 14 April 2026

Bootcamp Monday-Tuesday 27-28 April, Schiphol



Session	Timing		Title	Format	Details	Moderators	Actions
Day 1							
	10:00	30	Coffee				
	10:30	60	Welcome & introduction round	No slides	Per person round: <ul style="list-style-type: none"> - role in the work package - methods used - smth technical about their activities 		
	11:30	30	WP4 current state and 1Y goals	Public slide deck + status report slides	<ul style="list-style-type: none"> - Goal is to have credible roadmaps for the review and ready to go public - Overview of the submitted roadmaps - Explain completeness / correctness - Introduce workshop topics 	TU/e, Kevin + Dima	
	12:00	60	Lunch				
	13:00	120 (105 + 15)	Supplier view: data formats Discussion about the PDK data formats	Workshop Split groups + Plenary	<ul style="list-style-type: none"> - Explain the cross-sections and interconnects - Explain data schema construction Questions: <ul style="list-style-type: none"> - Brainstorming of the existing data formats: missing / unclear features? - Review the BB classification / categories - Review the BB performance data types - Do we want to use the same colors for mask layers? - Do we want to use the same colors for materials (technology info) - Naming conventions? 	3 leaders	
	15:00	30	Break				
*	15:30	120 (105 + 15)	Designer view: roadmaps and TRLs	Workshop Split groups + Plenary	<ul style="list-style-type: none"> - Different TRLs: what is designer enabled to do? - Which PDK capabilities we need to claim a TRL? - Positives and negatives per TRL – it's not bad to offer a low-TRL platform. - What is the sales pitch? 	3 leaders	
	17:30		Close				
	19:30		Dinner				

Bootcamp Monday-Tuesday 27-28 April, Schiphol



Session	Timing		Title	Format	Details	Moderators	Actions
Day 2							
	9:00	15 min	WP4 5-year goals	Presentation	<ul style="list-style-type: none"> - Explain the tracking of the PDK using the PDK server - Automation of PDK status evaluation, which files should be present in the release? - Reflection on day 1 - Introduce the topics of day 2 	KW	
	9:15	90 (75 + 15 plenary)	Digital platform: PDKs and performance monitoring <i>PDK TLR grading based on the data</i>	Workshop	<ul style="list-style-type: none"> - Automatic grading of TRL / PDK capability - BB TLR review, how to grade BBs - Technology TRL review - What is the path to increase TRLs? - Which work has to be planned? - How to identify the delta between the first release (M12) and the M60 target? 	3 leaders	
	10:45	30	Break				
	11:15	45	Test and assembly design kits	Kick-off	<ul style="list-style-type: none"> - Present the TDK concept paper (TU/e) - ADKs - How to get inputs about what should be there? 	DP Presentation from TYN	
	12:00	60	Lunch				
	13:00	90 (75 + 15 plenary)	Interoperability issues and V-model design System designer perspective:	Workshop Breakout sessions	Data flows / exchange. What are the interfaces between: <ul style="list-style-type: none"> - Hybrid and mono - Test and chip - Assembly and chip Existing methodology (cross-DK data exchange)	3 leaders	
	14:30	15	Wrap-up				
	14:45		Close				

Bootcamp Participants



Dima Pustakhod	TU/e
Kevin Williams	TU/e
Marco Gagino	TU/e
Laura Fitzgerald	TU/e
Salim Abdi	TU/e
Fawad Khan	TU/e
Robert Schuttert	TU/e
Stanisław Stopiński	Warsaw University of Technology
Ryszard Piramidowicz	Warsaw University of Technology
Jacek Olszewski	Warsaw University of Technology
Adrian Ślipek	Warsaw University of Technology
Cristina Arellano	CSIC
Martino Bernard	Fondazione Bruno Kessler
Fabien Gays	CEA/Leti
Meïssa FALL	CEA Leti
Jessica César Cuello	IMDEA Networks
Miguel Drummond	IT

Armand Estévez García	ICFO
Enderson Gregorio Falcón Gómez	IMDEA NETWORKS
Camilo Cano-Vásquez	Universitat Politècnica de València
ANTONIO DIAS PONTE	UNIVERSIDAD POLITECNICA DE VALENCIA (UPV)
Théo Rouanet	IMB - CNM CSIC
Tommaso Cassese	Silicon Austria Labs
Das Kumar	TNI
Peter van der Slot	Univeristy of Twente
Bjorn Jongebloed	University of Twente
Cristina Catalá Lahoz	University of Twente
Andres Martinez	Politecnico di Milano
Emre Kaplan	University of Southampton
Ramsey Selim	CORNERSTONE
Asif Mirza	Silicon Austria Labs
Phuong Phuong Tang	Silicon Austria Labs

Bootcamp Leader Volunteers



Workshop	Topics	Leaders
Supplier view: data formats	Feedback on data formats BB classification BB performance data	1. Martino Bernard (FBK) 2. Boyang Mao (UCAM) 3. Volunteer needed
Designer view: roadmaps and TRLs	TRL definitions from designer perspective PDK capabilities	1. Antonio Dias Ponte (UPV) 2. Bjorn Jongebloed (UTWENTE) 3. Cristian CCV
Digital platform: PDKs and performance monitoring	Automatic grading of the TLS based on the foundry data Path to TRL increase	1. Emre Kaplan (USOTON) 2. Volunteer needed 3. Volunteer needed
Interoperability issues and V-model design	Data flows Interfaces between design kits	1. Armand Estévez García (ICFO) 2. Das Kumar (TNI) 3. Tommaso Cassese (SAL)

- Three leaders per session
- Prepare a case study / example

- Submit building block data types
- Preparation for the bootcamp
- Volunteers for the bootcamp sessions needed

