

Global GAAC Summit 2024 –

Finding more efficient solutions to existing problems + uncovering hidden problems and solution potentials

Andreas Aal, Volkswagen Commercial Vehicles
Chair GAAC EU-Chapter
November 14th, 2024

Global GAAC Summit – Program

10:00 *Welcome Remarks, Laith Altimime*, Vice President, SEMI Europe

10:05 *Opening Remarks, Andreas Aal*, GAAC Europe Chair, VW Commercial Vehicles

10:15

From *Challenges in the land of Automotive High-Performance Computing: Chiplets to the Rescue ...*
Bart Placklé, Vice President of automotive technologies, imec

10:35

... to *Advanced Imaging and Sensing Technologies in ADAS Systems*
Jens Landgraf, Sr. Technical Program Manager, Sony Semiconductor Solutions Europe

10:55

... to *From Good to Great: How X-Ray Technology is driving yield in Advanced Packaging*
Christian Driller, Vice President R&D, Comet Yxlon International GmbH

11:15

... to *Panel Discussion – Enablement Strategies of an European Chiplet Cluster Ecosystem*

Panelists

Andreas Aal (also Moderator), GAAC Europe Chair, VW Commercial Vehicles

Peter Fintl, Capgemini

Prof. Dr. Albert Heuberger, Executive Director of the Fraunhofer Institute for Integrated Circuits IIS, Erlangen

Dr. Heike Riel, IBM Fellow, Head of Science of Quantum and Information Technology

11:55

... to *Closing Remarks*, GAAC Europe Chair

GAAC Work Group Status

WG1 - Power electrification – representative charging system design reference
Mission Profile derivation

We did some research on BEVs & charging ... on

UK

- Typical battery percentage level before & after charging
- Access to a charger for BEV/PHEV @ home
- BEV/PHEC charging frequency day & night @ home
- Charging habits
- Journey length & monthly driving

China – grid view

- Fast charging proportions & times per category (private, taxi, car sharing, logistics vehicles, Bus

Nordic Countries

- Charging connector type (Type 2, CCS, CHAdeMO) distribution



... but could not find what we were looking for

We must act to CLOSE THE GAP IN BEV & CHARGING DATA, to deliver a guiding point on how electrification solutions should be designed.

ACTION TO BE TAKEN



Survey on end-user charging/ BEV utilization perspective



Survey on grid-supplier charging/ BEV utilization perspective



OEM/Tier-1 survey on challenges & envisioning the future OBCs

Pre-work by IFX already delivered

GAAC Work Group Status

WG2 - Security – automatization of security standards mapping to common requirements for improved threat analysis & mitigation proposals

We do some research and tool optimization

Standards mapping

- link security standards / guidelines together at the level of requirements into one harmonized resource: threats, weaknesses, what to verify, how to program, how to test, which tool settings, in-depth discussion, training material
- Using and combing various tools, sources (opencre, census, etc.) & AI

Part
census,
exemplary

Standard	Have access?	Completed
UNECE Regulation No. 155 Cyber security and cyber security management system	Yes	Yes
UNECE Regulation No. 156 Software update and software update management system	Yes	Yes
ISO 21434 Road Vehicles Cybersecurity Engineering	Yes	Yes
ISO 27002 Code of practice for information security controls	Yes	Yes
ISO 26262 Road Vehicles Functional Safety	Yes	No
ISO 19790:2020 Security requirements for cryptographic modules	Yes	Yes
ISO 24759 Test requirements for cryptographic modules	Yes	No
ISO/PAS 5112:2022 Road vehicles — Guidelines for auditing cybersecurity engineering	Yes	No
PAS 1885:2018 The fundamental principles of automotive cybersecurity	Yes	No
PAS 11281:2018 Connected automotive ecosystems Impact of security on safety Code of practice	Yes	No
MISRAC	No	No
SEI CERT C Coding Standard	Yes	Yes
SAFECode	Yes	No



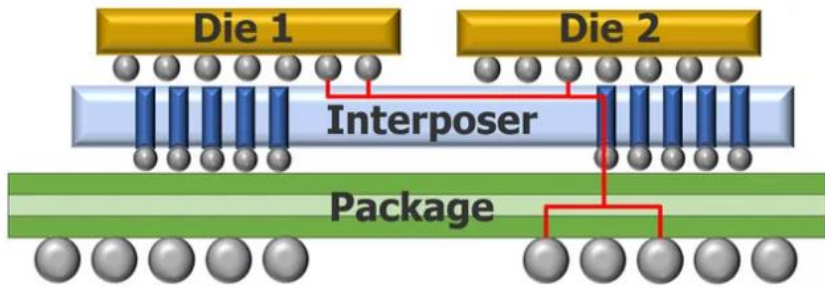
... upcoming surveys and cyber security process determination along product lifecycles



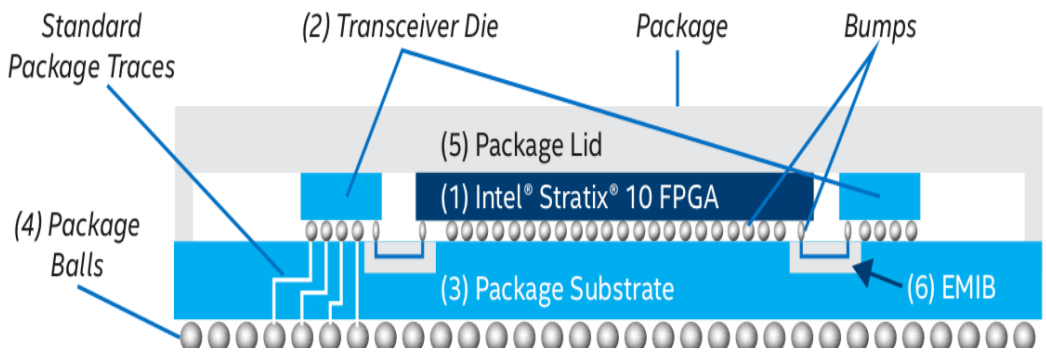
- White paper in the making

2.5D Packaging Technologies

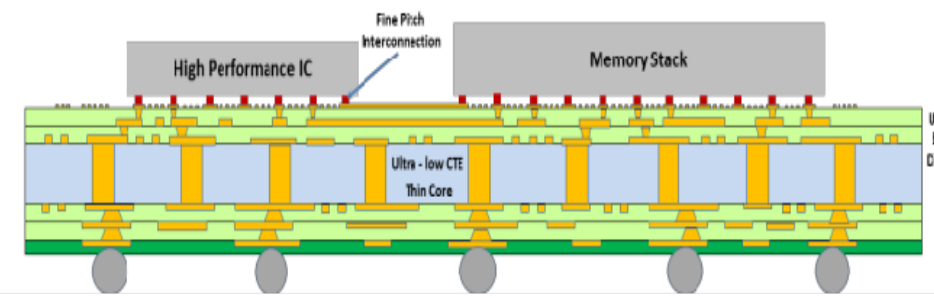
Silicon



Silicon Interposer₁

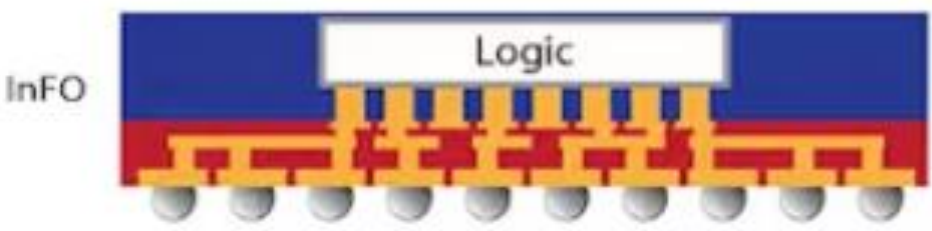


Silicon Bridge₂



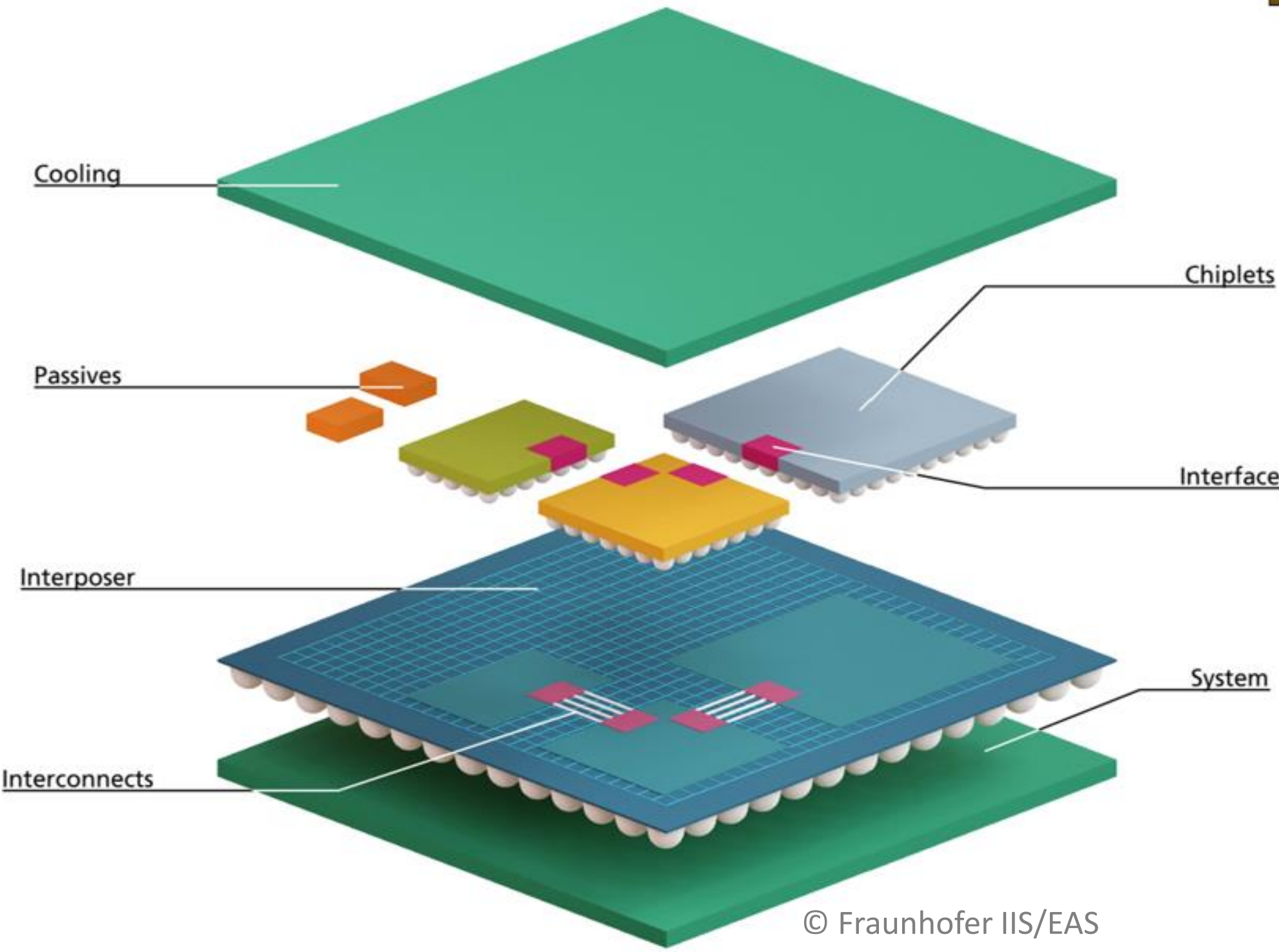
Organic Interposer₃

Organic



Fan-out wafer-level packaging (FOWLP)₄

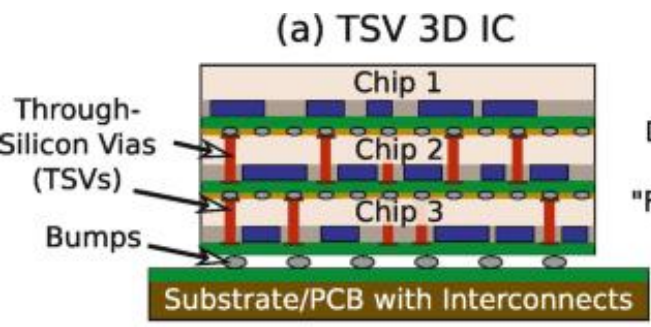
Enablement Strategies of an European Chiplet Cluster Ecosystem



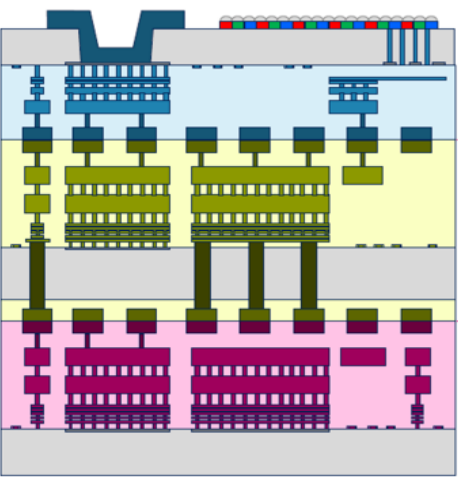
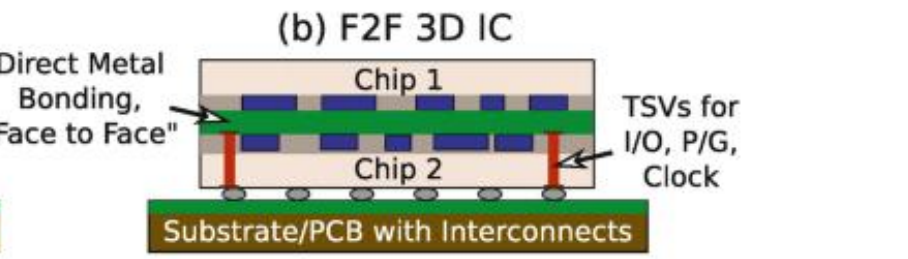
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Chiplet system

3D Packaging Technologies



3D Stacked Die₅



Performance	Cost	Reliability
Product responsibility	?	Supply Chain
Safety & Security	Testability	Software

1 Siemens EDA, from "Dissolving The Barriers In Multi-Substrate 3D-IC Assembly Design" blog on Semiconductor Engineering, Feb. 22.
2 Intel, <https://semiengineering.com/using-silicon-bridges-in-packages/>, July 20, 2018
3 Electronic Components and Technology Conference 2015, Modeling, design and fabrication of ultra-thin and low CTE organic interposers at 40µm I/O pitch
4 TSMC, Siemens: <https://resources.sw.siemens.com/en-US/white-paper-implementing-fan-out-wafer-level-packaging-fowlp-with-the-hdap-flow>
5 Heterogeneous 2.5D and 3D Integration for Securing Hardware and Data | SpringerLink
6 Arizona State University