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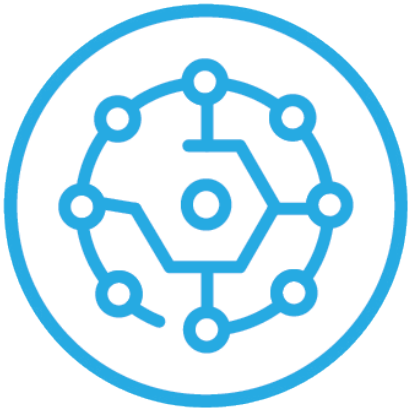
European Association on
Smart Systems Integration



Joint workshop by EPoSS and
INSIDE Industry Associations

The Future of Innovation in Edge AI

Online, April 04, 2025

Notes from the Workshop

Part VIII: Panel discussion with industry experts

Davis Sawyer, NXP | Wolfgang Ecker, Infineon | Danilo Pau, STMicroelectronics | Hans-Jörg Vögel, BMW

Davis Sawyer (NXP)

On accelerating edge AI innovation:
Our goal is to make edge AI easier and more accessible by improving the tools, software, and platforms developers rely on. Unlike cloud AI, which benefits from more standardized tools and infrastructure, edge AI suffers from fragmentation, slowing down prototyping and deployment. If we can open up our platforms – not just to developers but also to one another – we can accelerate innovation across the entire ecosystem.

On international collaboration:
Despite being based in Canada, I see immense potential in global cooperation. Initiatives like the Edge AI Foundation, while North American in origin, include a significant number of European members. These platforms are invaluable for sharing knowledge, aligning customer needs, and driving open, value-based collaboration.

On the rising cost of edge AI:
Edge AI is getting more expensive, as Wolfgang (Infineon) highlighted in his intervention (see below). But we must look at the value we create in return. If we align on end-user benefits, we can justify the investment in infrastructure, supply chains, and process technologies.

On market impact:
The biggest impact right now? Generative AI. It's transformative – and I say that fully acknowledging my bias.

Wolfgang Ecker (Infineon)

On edge AI complexity:
Edge AI is incredibly heterogeneous. The performance range between ultra-low-power and high-performance chips can vary by a factor of 1,000. It's like comparing a bicycle to a rocket. We must recognize this diversity in our design approaches.

On cost trends:
Advanced semiconductors are becoming increasingly expensive. Shrinking to 2nm or 3nm increases the transistor count and cost. The days when Moore's Law helped reduce costs are behind us. High-end electronics will only get more expensive, especially in AI.

On value chain collaboration:
We must re-establish close ties across the AI value chain – from semiconductor manufacturers to AI technology providers and end-users. By working together, we can co-design solutions and reduce unnecessary cost escalation.

On market building:
Semiconductors need markets. It's not enough to have 2nm fabs in Europe if there's no market for them. Europe must develop a stronger high-end market and share investment burdens through strategic collaboration, particularly among Infineon, NXP, and ST.

On cloud infrastructure for AI:
Edge AI depends on cloud-based model training. Without access to large-scale training infrastructure, edge AI deployment remains incomplete. Europe must invest in compute centers if it wants to be truly competitive.

Danilo Pau (STMicroelectronics)

On priorities for Europe:
1. **Cooperate**. Urgently and broadly within the European ecosystem. We must pool our knowledge and capabilities to address the challenges posed by generative AI.
2. **Compete**. But only after laying the groundwork for collaboration. Once we've built shared infrastructure and understanding, competition can drive innovation.
3. **Consolidate**. We need a sustainable market that rewards investments and innovation in edge AI.

On knowledge sharing and patents:
We shouldn't impose rigid IP boundaries early on. Shared innovation – under proper frameworks – can help generate broader impact and strengthen Europe's industrial base.

Contribute to the Edge AI Roadmap:
The EPoSS and INSIDE Roadmap will cover the views of ST, NXP, Infineon, SMEs and European research groups. It will address the trajectory how the trajectory of AI at the edge will evovle. This would give Europe a clear direction and united voice.

On market focus:
Generative AI is disruptive, not just in terms of hardware but also algorithms and tools. If we don't act now, there won't be a second chance. We must invest decisively.

Hans-Jörg Vögel (BMW)

On market dependencies:
Europe remains too reliant on foreign nations for semiconductors and AI technologies. This dependency affects not just our economy, but our democracy, safety, and technological sovereignty. We must address this with urgency.

On BMW's approach to innovation:
We focus on what we're good at – designing complex systems – and collaborate deeply on everything else. That's why we've explored quantum computing applications as one of examples with Infineon, even though we don't build chips or robots ourselves.

On cross-layer optimization:
We can't just build hardware and hope that software catches up – or vice versa. We need formats for **cross-layer optimization** across AI, hardware, and embedded systems. This also means avoiding vendor lock-in and building **portability** across AI platforms.

On strategic cooperation:
BMW is actively involved in discussions to define **reference architectures** for automotive semiconductors and AI. Alongside partners like Bosch, imec, Cadence, Synopsys, Siemens, Arm among others we are working toward a **shared ecosystem for software-defined vehicles** under the umbrella of the Automotive Chiplet Programme[1]. Standards and harmonization are key to creating a competitive and open European market.

On long-term vision:
Europe must think in systems. Our goal is to build a scalable, open, and competitive market for AI and software-defined mobility. This requires trust, shared standards, and a long-term commitment to collaboration.

On market impact:
The future lies in **European foundation models** – AI developed in Europe, for Europe. Silo AI is already proving this can be done. Strengthening our chip design capacities will also be crucial.

1 https://www.imec-int.com/en/press/arm-ase-bmw-group-bosch-cadence-siemens-siliconauto-synopsys-tenstorrent-and-valeo-commit