Response to the Public Consultation on the Review of the European Chips Act (Chips Act 2.0)

Contribution from the Eastern Netherlands Semiconductor Ecosystem

Provinces of Overijssel and Gelderland, RDA Oost NL, Lifeport Semicon Industries, ChipTech Twente, and multiple semicon related companies.

Executive Summary

Facing global supply-chain vulnerabilities and intensifying geopolitical pressures, Europe's ability to build strategic resilience in semiconductors is now pivotal.
This contribution from the Eastern Netherlands presents:

A. a policy review of the current Chips Act in line with the Better Regulation criteria;
B. a factual snapshot of the regional semiconductor landscape; and
C. forward-looking recommendations outlining what Europe -and Eastern Netherlands in particular- can contribute to the European strategic Chips value chain and needs from Chips Act 2.0.

East Netherlands offers a unique dual-hub model -combining advanced packaging and design in Lifeport Semicon and photonics/design innovation in Twente- that is essential for Europe's semiconductor resilience.

Our key message: regional innovation ecosystems such as chiptech in the East Netherlands are indispensable links in Europe's chip future, combining (electronic) chip design, advanced packaging, heterogeneous integration, photonics, quantum, testing and equipment expertise within a collaborative industrial-academic base. We ask the commission to facilitate growth of this ecosystem for resilience and strategic autonomy, taking up a leading role in the world regarding chiptech, and accommodating European production locations.

A. Policy Review – Better Regulation Assessment Effectiveness

The Chips Act has catalysed investment and coordination across Europe. In the Netherlands, initiatives such as ChipNL Competence Center, PIXEurope pilot line and PhotonDelta have strengthened the European value chain. In the East Netherlands, the collaboration between Lifeport Semicon (Arnhem–Nijmegen, province of Gelderland) and Twente (province of Overijssel) shows that regional ecosystems can deliver tangible outcomes in advanced packaging, testing, validation and photonics. We do that in close collaboration with other regions in the Netherlands, such as Brainport Eindhoven and the Delft-area. But also, in cross-border collaboration with (amongst others) German regions. We succeeded in putting the technology focus in Europe and the Netherlands upfront, instead of the regions, and competition within the regions. Still, the R&D-to-industrial-deployment step -especially mid-volume pilot production and heterogeneous integration- needs targeted reinforcement under Chips Act 2.0.

Efficiency

Integrating research, design and small-series manufacturing in regional hubs improves cost-effectiveness and reduces product development iterations and time to market. The proposed Advanced Chip Packaging Pilot Line (ACP) at Noviotech Campus demonstrates this: combining development, validation and low-/mid-volume production within one facility cuts lead times and dependencies on non-EU supply chains. Simplified access procedures for SMEs and mid-caps would further enhance efficiency. In a broader regard we could say that Europe has historically placed stronger emphasis on front-end production, which has resulted in strategic dependencies

in back-end packaging and assembly. The backend which entails packaging comes with a lot of confidential steps and procedures, which on its own should be a motivator to ensure there will be EU facilities to do the packaging, in a new and disruptive manner and further advance on the research in this topic.

Relevance

The Act's objectives -technological sovereignty, resilience and competitiveness- directly match regional strengths in chip design, advanced packaging, heterogeneous integration, integrated photonics, quantum, RF power and sensing. These fields are critical enablers for automotive, energy, defence, datacom and healthcare industries.

Regarding the relevance of the policy, it is within our opinion that there is no reason to change the goals set out in the first chip act. Just to add complementary, relevant, subjects to truly ensure the much-wanted possibility to be independent of third parties and achieve technological sovereignty, resilience and competitiveness on an EU level.

Coherence

Alignment between EU instruments (Chips JU, IPCEI ME/CT/AST, Pact4EU), national programmes (Photon Delta, Quantum Delta NL, FNS, NXTGEN High tech, POLARIS) and regional ecosystems is essential and plays a pivotal role in improving. In the East-Netherlands we have an ecosystem consisting of two clusters which are complementary to each other and already working together. The East Netherlands design and integrated photonics-driven R&D in Twente with manufacturing, design and testing in Lifeport. And further parts of the strategic European value chain in Brainport, Spain, Dresden, Leuven. Chips Act 2.0 should give support to the role of such regional innovation hubs to structure and boost the growth of the European value chain and avoid overlap as much as possible. Policies should play an essential role in achieving the goal of sovereignty, resilience and competitiveness, at the same time ensuring there is good focus within clusters. Only in this manner will Europe be able to invest effectively in the whole value chain, from design to pilot to production and provide a European answer to the chips power in Asia.

EU Added Value

Only the EU can provide the scale, interoperability and cross-border framework needed for shared pilot lines and open technology platforms. Eastern Netherlands offers an integrated access point along the Leuven–Brainport–Arnhem/Nijmegen–Twente-corridor, with integration of Delft and Groningen in the ecosystem as well, reinforcing Europe's collective resilience and innovation capacity. Advancing the technological development in this corridor would be of significant value for enhanced resilience and stronger global competitiveness. Dedicated programs will further strengthen this corridor and make it future proof. (funded) programs with the option of only working with the front runners in the field of ChipTech, will be of significant relevance for this advancement.

B. The East Netherlands Semiconductor Landscape

Two hubs – one coherent value chain

Lifeport Semicon (Arnhem–Nijmegen): Since the 1950s, Lifeport has built up a strong history, experience, network and industry with a strong profile in frontend production (Philps semicon now NXP) and backend equipment A long-established hub for advanced packaging, assembly and test, anchored by NXP, Ampleon, Nexperia and Besi. With a secondary focus on design at

the fab in Nijmegen. As said, the hub hosts CITC (now part of TNO) and the growing Noviotech Campus, envisioned as a mixed R&D and pilot-manufacturing environment.
Twente (ChipTech Twente): Home to a full integrated photonics value chain including LioniX International, PHIX Photonics Assembly, New Origin, Demcon and the MESA+ NanoLab at the University of Twente. New Origin will provide scalable SiN photonic chip production and create an open-access European foundry environment for next-generation heterogeneous systems. Although this might start as a pre-industrial facility the goal is to have a fully pure play foundry that is making SiN chips for external customers, like TSMC is doing this for (advanced node) IC's. In addition, Twente boasts a demonstrably impactful track record in chip design, with numerous design companies located in the region and the widely respected Professor Nauta's research group based at the University of Twente. Together, these actors position Twente as a complementary innovation engine to Lifeport's industrial scale-up, reinforcing coherence across the national and European value chain. This is where the connection and great opportunities for deepening between Twente and Lifeport lies. Chip design R&D and Chip design combined in a production environment.to further help the visualization of the semicon ecosystem within the Netherlands we've provided multiple images from High Tech NL from page 7 and onwards.

Industrial engine of the Dutch manufacturing base

Eastern Netherlands, together with Brainport Eindhoven and Delft, accounts for the majority of Dutch semiconductor activity and serves as a core pillar of the European semiconductor supply network. The focus on machine building is one of relevance for the whole Dutch chiptech corridor, and of relevance for the EU, this machine building is what strongly connects the East-Netherlands to Brainport. This is the Dutch contribution to the European value chain. To continue this contribution and further advance our autonomy and competitiveness on a European level there is a need for long-term and large investments. We would highly support seeing a European roadmap related to this long-term vision, with, if possible, the integration of the large investments and funds the EU is planning to spend on creating strategic autonomy for chip production in the EU.

Strategic challenges

- Limited EU capacity for mid-volume packaging and SME access.
- Ageing 200 mm lines (NXP Nijmegen) and potential skill drain (on industrialization).
- Need for reliable, affordable and green energy solutions and spatial infrastructure to support campus growth, on Kennispark as well as Noviotech.
- Fragmented design-to-manufacturing pipeline requires better integration of regional facilities into EU frameworks.
- Stimulating scale-up financing for promising high-growth companies by removing existing barriers, including through an adjustment of the definition of "undertaking in difficulty (UID)".
- Technical talent: implementing proactive measures to expand and attract technical talent from primary to higher education, while promoting upskilling and lifelong learning.
- Ensuring timely allocation of governmental investments, which might be solved through the establishment of maximum decision-making deadlines.
- Bridging the investment/funding gap of third-fourth round scale-ups (typically between 50-200 M€)

C. Towards Chips Act 2.0 – Needs, Contributions and Policy Recommendations

What we offer

- Advanced Chip Packaging Pilot Line (ACP) at Noviotech Campus: integrating R&D, equipment validation and small-/mid-volume production for advanced packaging and heterogeneous integration. With a need of €145 million public-private investment (TNO/CITC, Neways, Nexperia, Thales, Signify and equipment partners), the ACP will enhance European capability.
- New Origin foundry (Twente): part of the integrated photonics ecosystem, providing scalable SiN-based photonic chip production and a platform for co-integration with electronics via heterogeneous integration routes. Together with PHIX and LioniX, it anchors Europe's next generation of photonics manufacturing and supports the ACP's system-integration objectives. With the potential strategic importance PIC's can play in quantum (communication), datacentres, biosensing and automotive, having a dedicated pure play foundry can secure independence for Europe when it comes to having access to sophisticated photonic platforms. With capacities of 25.000 wafers per year, the initial demand can be met with New Origin (Phase 1) and plans to scale to 100.000 wafers will ensure complete self-reliance (Phase 2).
- Chip design: The chips that roll out of the wafer fabs of Global Foundries, Tower Semi (part of Intel), TSMC, UMC and – more closely at home – NXP are designed by Twente companies such as Bruco IC, Chain IC, QBayLogic, MEMSIC and the Twente design departments of multinationals Cyient, Monolithic Power Systems, Bosch, Renesas and Teledyne-Dalsa.
- Testing and validation capacity (Salland Engineering, Zwolle) offering shared European services for device qualification and metrology.
- Cross-border connectivity with Germany and Belgium, positioning Eastern Netherlands as a European collaboration platform.
- A strong interregional partnership with the Chip Tech regions in Europe within the European Semiconductor Regional Alliance (ESRA) e.a.

What we need

1. A tailored funding framework to support the development of new and innovative technologies and equipment, as well as the creation of packaging use cases for the EU's advanced chip-packaging pilot lines.
2. European open pilot lines for panel-level advanced packaging and heterogeneous integration, covering design, validation and small-/mid-volume manufacturing (100 – 100 000 units) with low entry barriers for SMEs and regional consortia.
3. A precompetitive foundry like setting in which new front-end middle-end, test- and metrology tools can be tested and validated before they get delivered to foundries for commercial use. This "CoLabFab" environment is the missing European link in the acceleration of commercialization of new semicon/photonic-production equipment and processes, enabling commercial foundries (otherwise not in the position to waste time on "nonproduction" activities) and equipment developers to collaborate on reaching the desired specs and performance. Being open access, SME friendly and working on up and coming technologies, CoLabFab would democratise access to validation that is otherwise restricted to the top companies.
4. Further scaling to High Volume Photonics Foundry (after establishment of phase 1), with industrial production facilities for SiN- and InP PIC's, including integrated packaging and assembly.

5. Integrated funding pathways linking EU, national and regional sources (Chips for Europe, IPCEI ME/CT & AST, ChipNL) to accelerate TRL & MRL progression and avoid duplication. Use ecosystem orchestrators such as regional development agencies, and their European associations such as EURADA, to support the integration in the execution.
6. Human-capital and mobility programs anchored in regional innovation ecosystems to attract and retain skilled engineers.
7. Infrastructure readiness criteria (energy, spatial planning) embedded in implementation guidelines to ensure long-term capacity. With a leading role from the European commission in the yearly reform plans per country, which are currently being linked to the new NRPPs. With the goal to ensure coordination between and within member states. To ensure a synergy between different funds that are allocated and speed up the ground level development that is needed for the Commission to ensure strategic autonomy and resilience.
8. A specific funding line for start-ups and SMEs in deep tech in the proposed ECF.

In the context of the Chips Act 2.0 and the renewed European Industrial Policy, we call upon the Commission to support the following instruments and actions:

1. Dedicated funding and support for regional cluster-based initiatives and SMEs – such as those in Eastern Netherlands – functioning as European *"satellite hubs"* within the full semiconductor value chain. These initiatives should focus on *deep-tech niches* including advanced packaging, chip design, heterogeneous integration, edge chips, and MedTech and defence applications.
2. Accelerated permitting and State Aid procedures for *First-of-a-Kind (FOAK)* facilities in regions with proven ecosystem strength. These measures should be aligned with the horizontal enablers of the Competitiveness Compass – regulatory simplification, talent development, and market scaling.
3. A strategic focus on design, testing, and advanced packaging capabilities in addition to wafer fabrication. Europe must strengthen all segments of the value chain to ensure full technological sovereignty and deep-tech resilience, rather than focusing solely on end-stage manufacturing.
4. Investment in skills and talent development across microelectronics and related deep-tech domains. This includes *cross-border cooperation* (Germany–BeNeLux) and alignment with regional education and industry programs in Eastern Netherlands, ensuring a robust talent pipeline.
5. Reinforcement of Europe's supply chain for critical materials and components, positioning Eastern Netherlands as a logistical and technological hub connecting regional ecosystems with Europe's industrial core.
6. Concrete alignment with the Competitiveness Compass framework, by:
    - Bridging the *innovation gap* through intensive R&D and pilot-line programs in Eastern Netherlands.
    - Linking the *green transition* with semiconductor innovation (energy-efficient chips, smart grids, e-mobility), ensuring that *competitiveness and decarbonisation* advance together.
    - Reducing dependencies on non-European suppliers through regional sourcing, European hubs, and resilient logistics nodes.

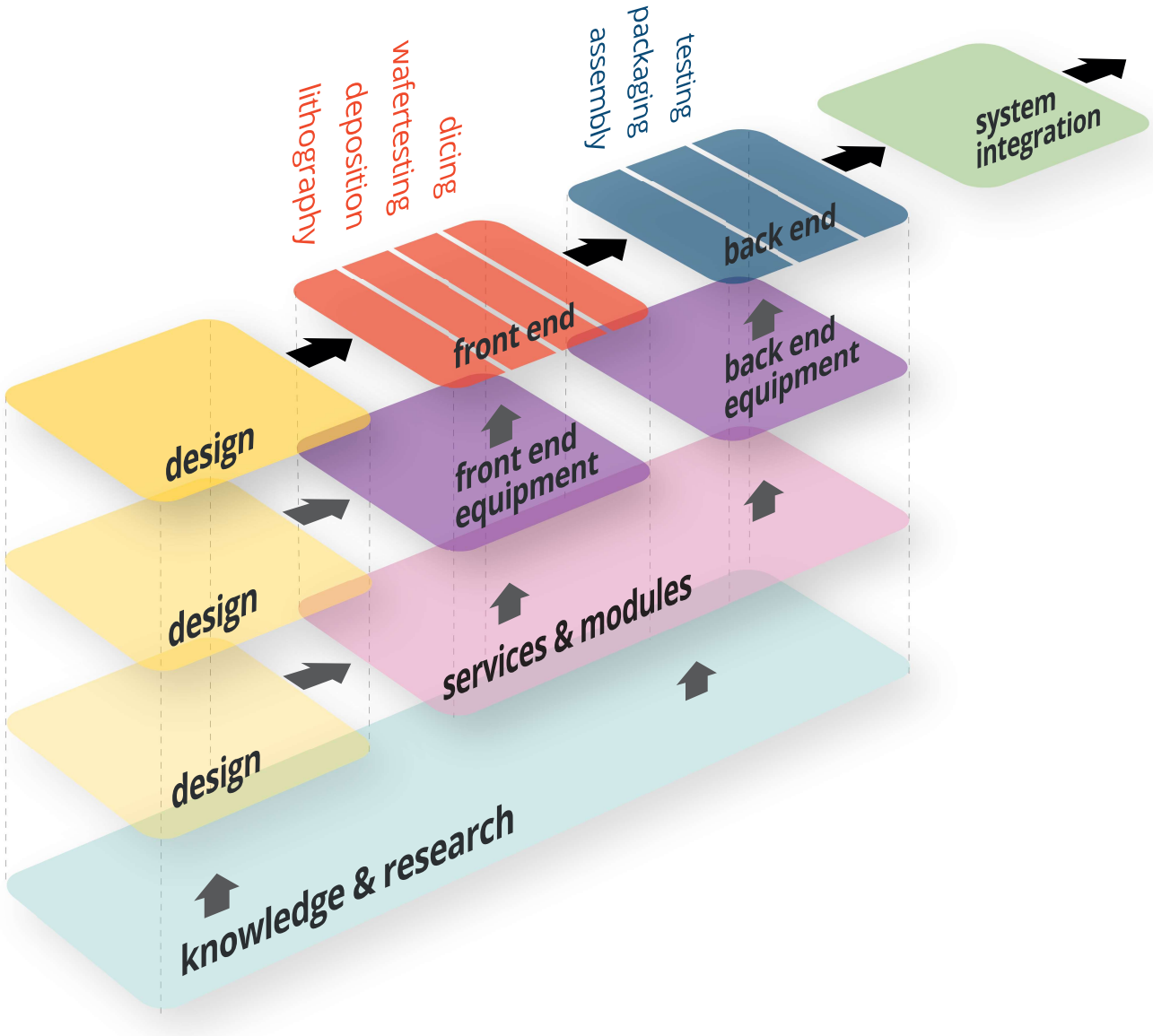
Through these measures, the East Netherlands can make a visible, tangible and impactful contribution to Europe's strategic goal: to reinforce the semiconductor value chain, reduce

external dependencies, and enhance Europe's competitiveness and resilience in semiconductors and deep tech.

Conclusion

East Netherlands shows that regional innovation ecosystems are contributing to the European challenges by adding value in deep tech European industry. By combining advanced packaging (Lifeport Semicon, CITC, Novio Tech Campus) with co-design/system design, photonics, equipment and foundry capabilities (Twente, including New Origin) within a coherent framework, the region offers a model for Europe's resilient, sustainable and innovation-driven semiconductor future. A strengthened Chips Act 2.0 that empowers such regions will turn strategic autonomy from ambition into implementation. Eastern Netherlands stands ready to contribute data, infrastructure and partnerships to help build Europe's next generation of semiconductor capabilities. We encourage the Commission to prioritise targeted support for regional deep-tech hubs such as the Eastern Netherlands, which translate European ambitions into concrete implementation.

Furthermore, we are available for any follow-up questions and conversations regarding this topic. We are willing and able to provide (policy) expertise on the topic, and to connect with relevant stakeholders.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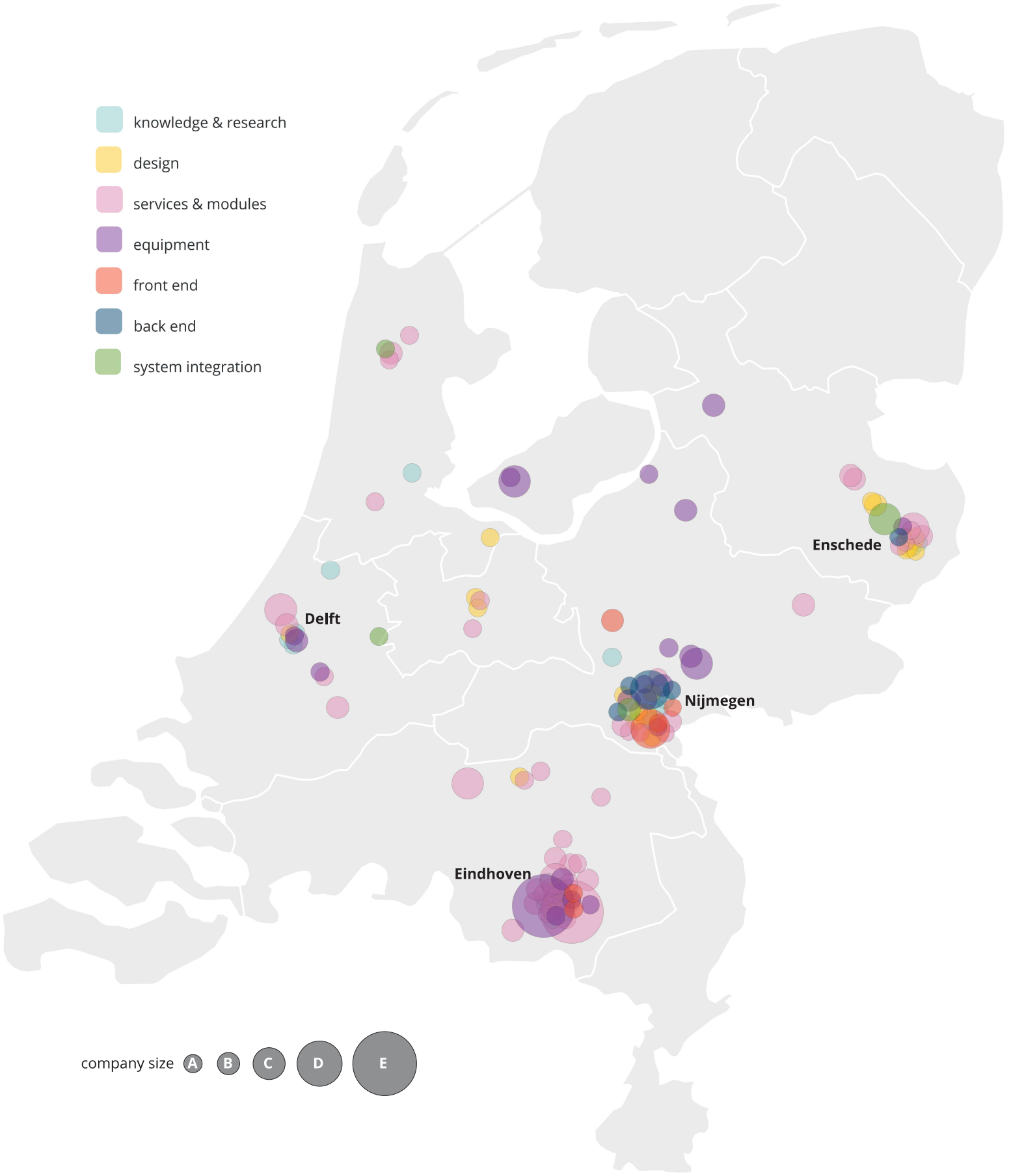
High Tech NL | Concentrations of semicon activities in the Netherlands



* Graphic based on High Tech NL member data | Version October 2025

** For modelling purposes, semiconductor companies are grouped by FTE size. This approach does not fully capture ASML's scale but ensures comparability across the sector.