

A woman in a light blue shirt and jeans walks a small black and tan dog on a gravel path. In the background, a futuristic silver car is parked in a room with purple walls and a grid pattern. The scene is lit with a strong purple hue.

Compute technologies

Powernet | 48V

Powernet | 48V

Contribution of powernet

Compute



Electrification



Digital user experience



Automated driving

Code

Plan

Release

Deploy

Build

Monitor

Operate



Smart and efficient power distribution



Functional safety



Centralization of functions



Cost & weight reduction



BOSCH

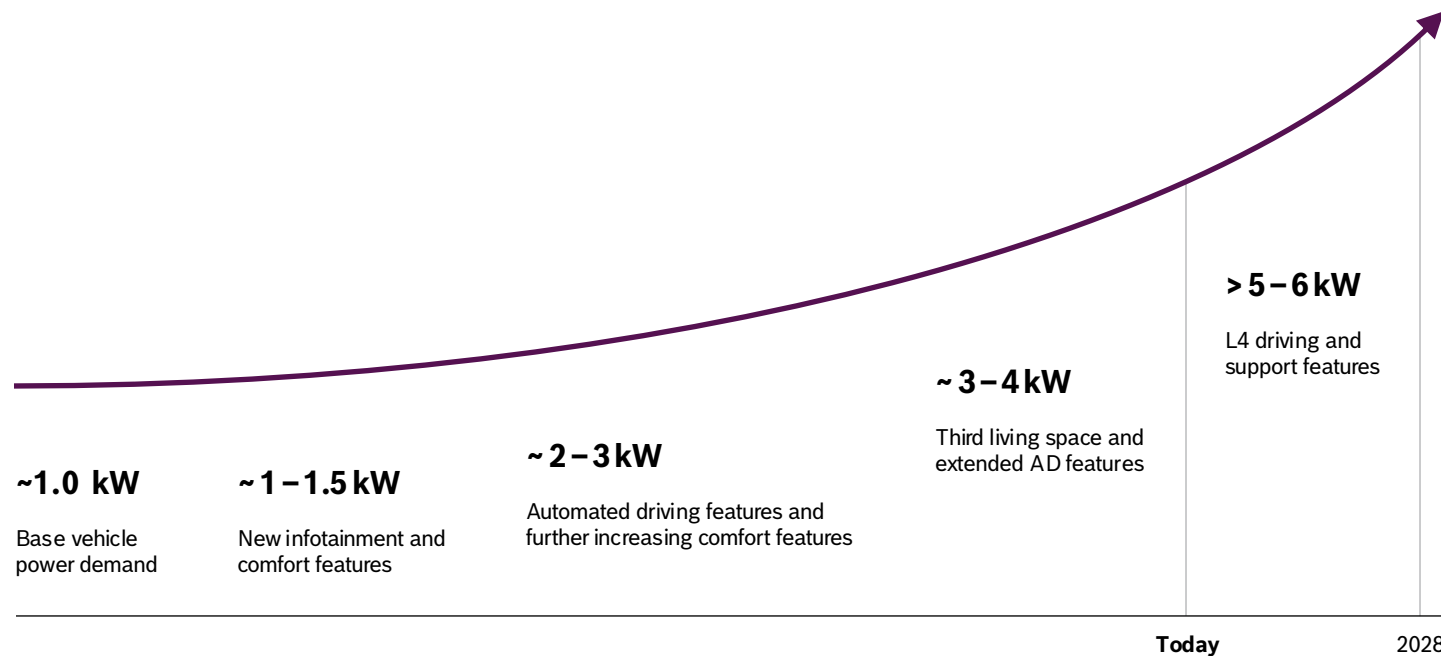
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Low voltage power demand

Compute



Energy consumption

at vehicle level is expected to rise continuously, particularly for future vehicle platforms



12 V

Above ~3 kW

existing 12 V systems are not able to keep up with the rising demand for low-voltage power



Power demand increasing due to infotainment, connected driving, and automated driving



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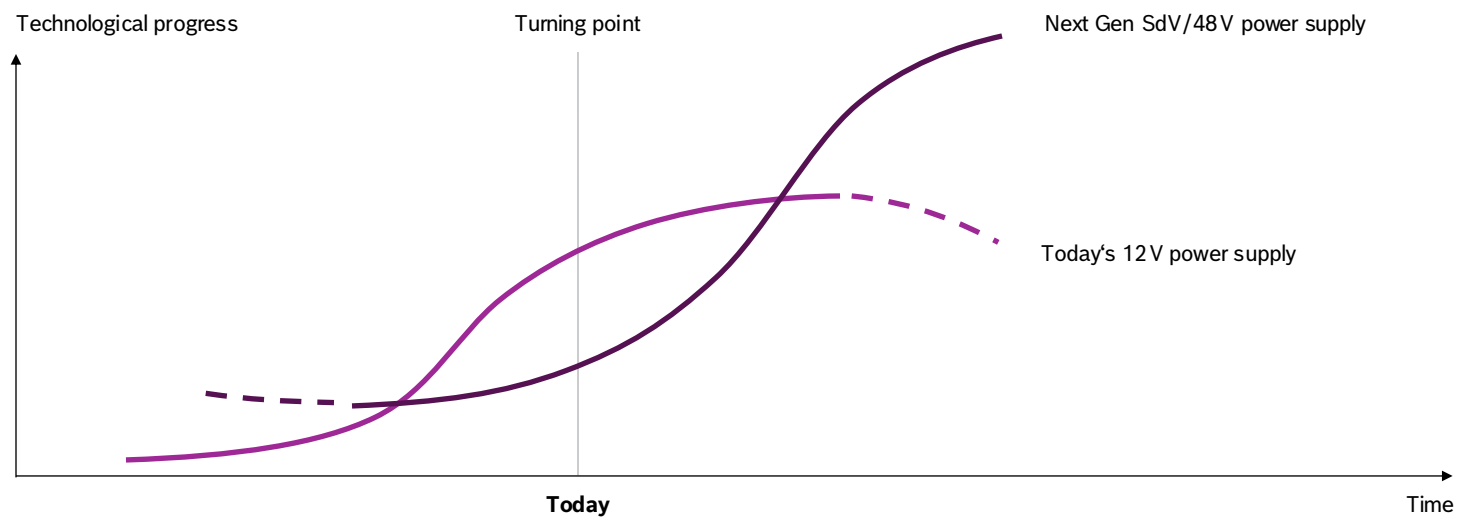
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New power supply technologies

Compute



Technology s-curves



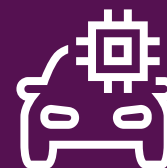
Higher power capabilities
for "personalization" of the third living space,
lifestyle accessories, and SAE L3+ architectures



**Reduced
copper usage**



Efficiency gains
due to reduced power
losses and vehicle weight



**Transition to
software-defined
vehicle
supported by
48 V technology**



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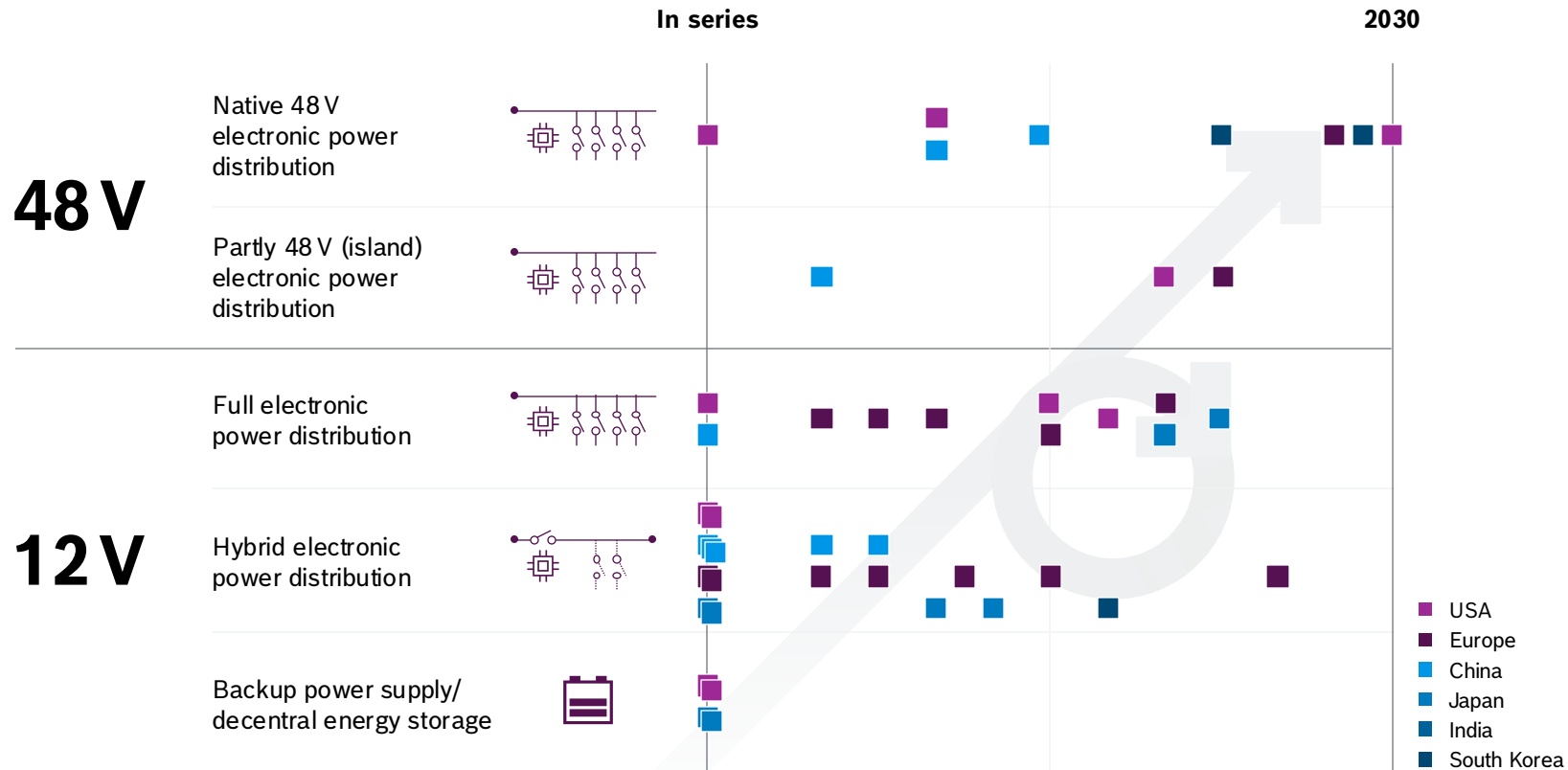
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Main power distribution, market prognosis*

Compute



Main market trends

- Decentralized energy storages for single safety requirements
- New E/E architectures with electronic controlled power distribution
- 48 V approach as game changer for functionality and cost

* EEA SOP, OEM headquarter region



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Standardization is key for design to cost approach

Compute



Invest

Development of 48 V components,
changes in production and workshops



Standardization

to reach cost
efficiency faster



Savings

in energy source and storage,
harness and further ECUs



**Early adopter
alliance needed to
accelerate
transition to 48 V
in market**



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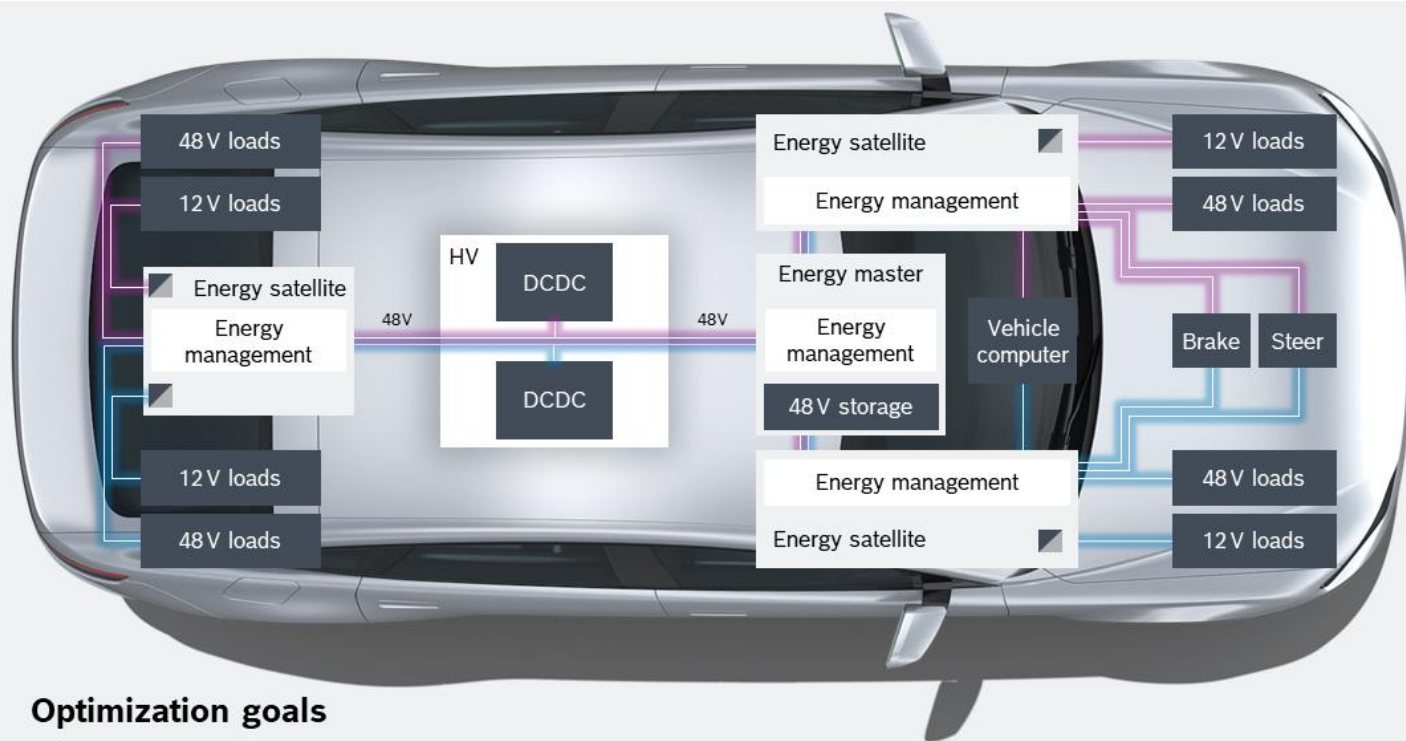
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Powernet architecture

Compute



■ Powernet 1
■ Powernet 2

Optimization goals

Removal and downsizing of LV storages

Downsizing of energy source(s)

Downsizing of wiring harness

Reduction of power distributors

Consolidation of functionalities into single architecture elements



Material cost
-20 to -25 %



Weight
-20 to -25 %



Efficiency
10 to 15 %



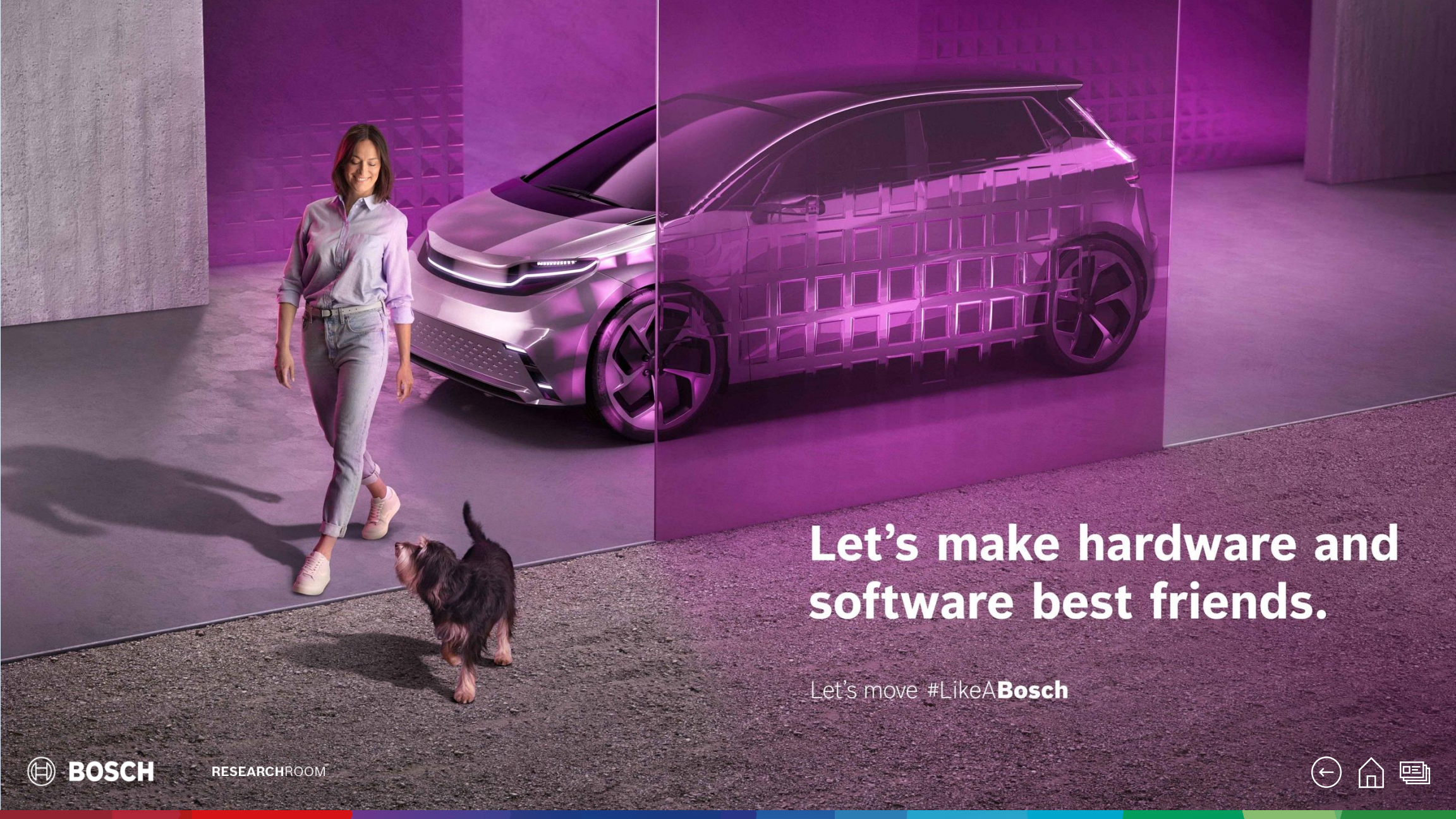
Sample availability
2025



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Let's make hardware and
software best friends.

Let's move #LikeABosch