



Stellar MCUs with xMemory

Future-proof your designs, accelerate development, and simplify logistics



The trends fostering design scalability



Shifting to software-defined vehicles (SDV)

Architectures moving to SDV and X-in-1, advancing software innovations with support for more functionalities.

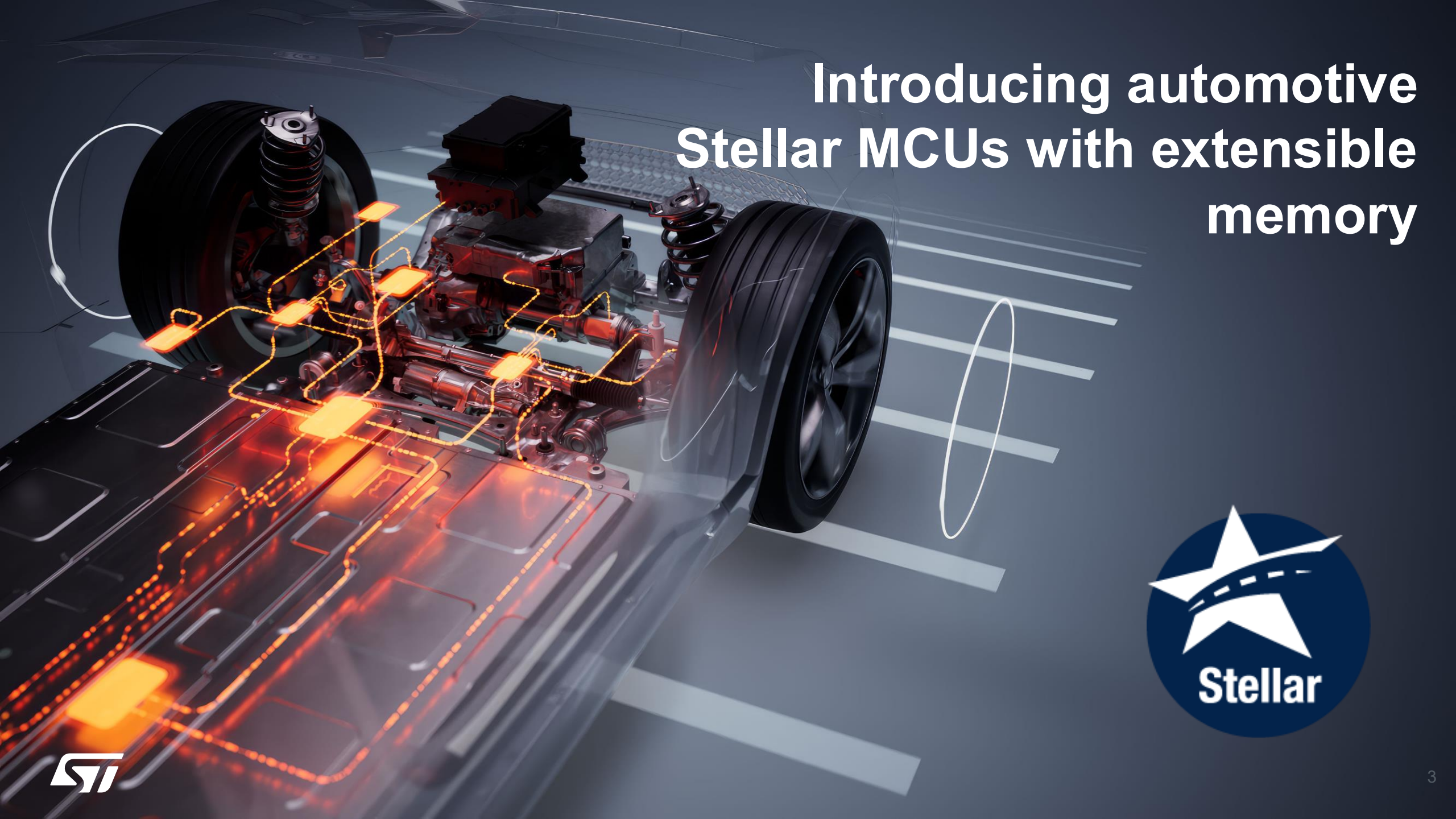
Streamlining supply chain operations

Simplified logistics reduce risks.

Striving for faster innovation

Development time is accelerating. The ability to deploy the same components is key to meet tight schedules.

Introducing automotive Stellar MCUs with extensible memory





Stellar with xMemory Innovation and smart savings

Innovation unleashed



Headroom for product evolution with zero compromises

Enabling memory-intensive applications

Operational efficiency



Unified procurement
Seamless development
Effortless deployment

Faster time to market



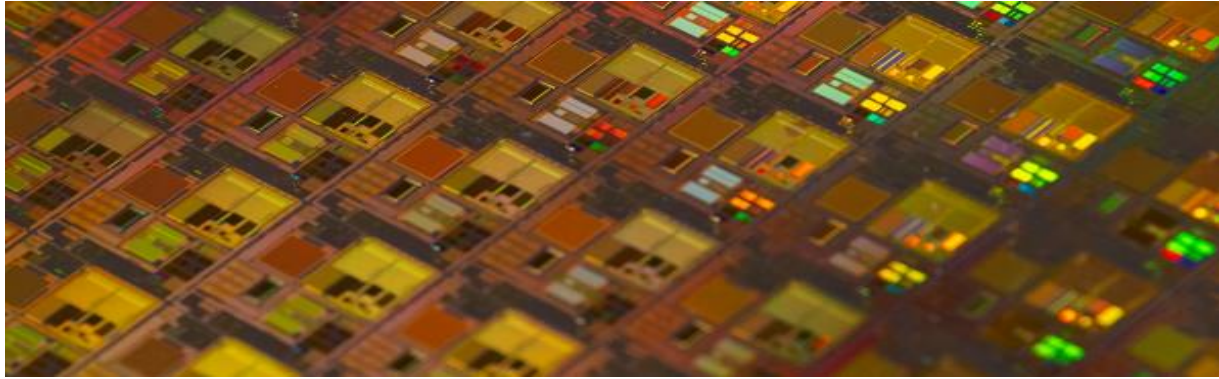
Upgrade through software only in a matter of days
One-code development. Maximizing reuse

**Built on ST proprietary, automotive qualified PCM technology,
Available on all upcoming Stellar P & G. Production starting later in 2025.**



ST phase change memory (PCM) redefines eNVM for automotive MCUs

**Proprietary PCM technology:
Industry-leading memory density & robustness**



**Industry
smallest
embedded
NVM cell (28/18 nm)**

**2X
memory density
vs. alternatives**

**0.019 μm^2
per information
bit (28 nm)**

**Best power, performance, area (PPA) index
Versus alternative technologies (RRAM, MRAM, Flash)**

	Phase Change Memory ★★★
Memory cell size	Best-in-class
High Temperature	Achieves automotive requirements for AEC-Q100
Radiation immunity	Best-in-class
Technology power efficiency	Lower consumption at more stringent conditions
Production maturity	Mature technology starting SOP vs post eFlash NVMs

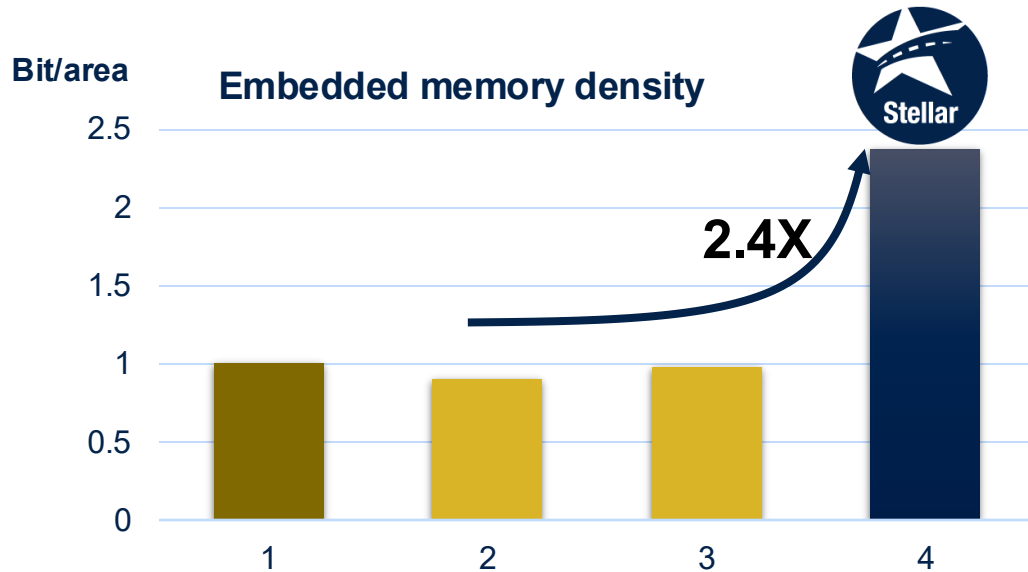
**Most dense embedded memory in the market
Proven endorsed technology with portability and reliability**



[Read more](#)

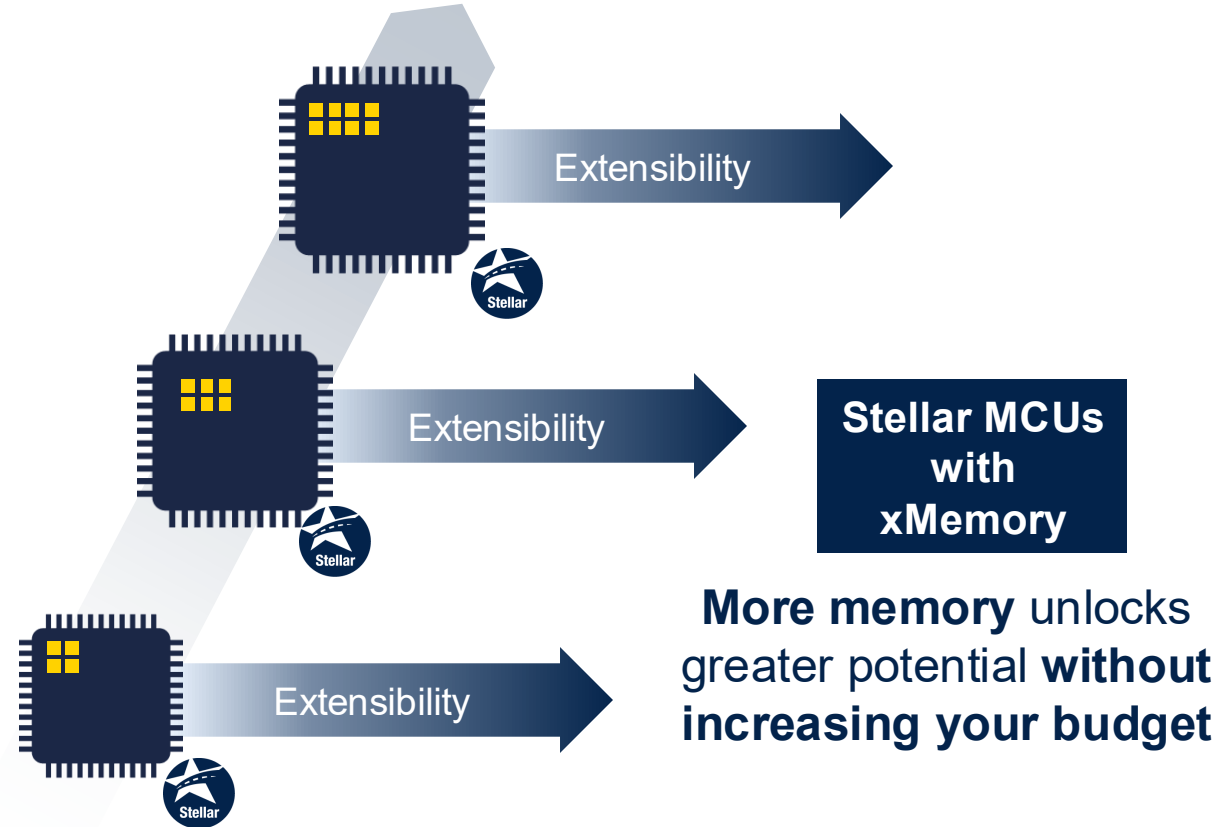
Stellar with xMemory adds a new dimension to scalability

PCM: densest NVM qualified for automotive



ST PCM technology delivers >2x the memory density – more than doubling the capacity in the same space

Source: Publicly available industry analysis reports

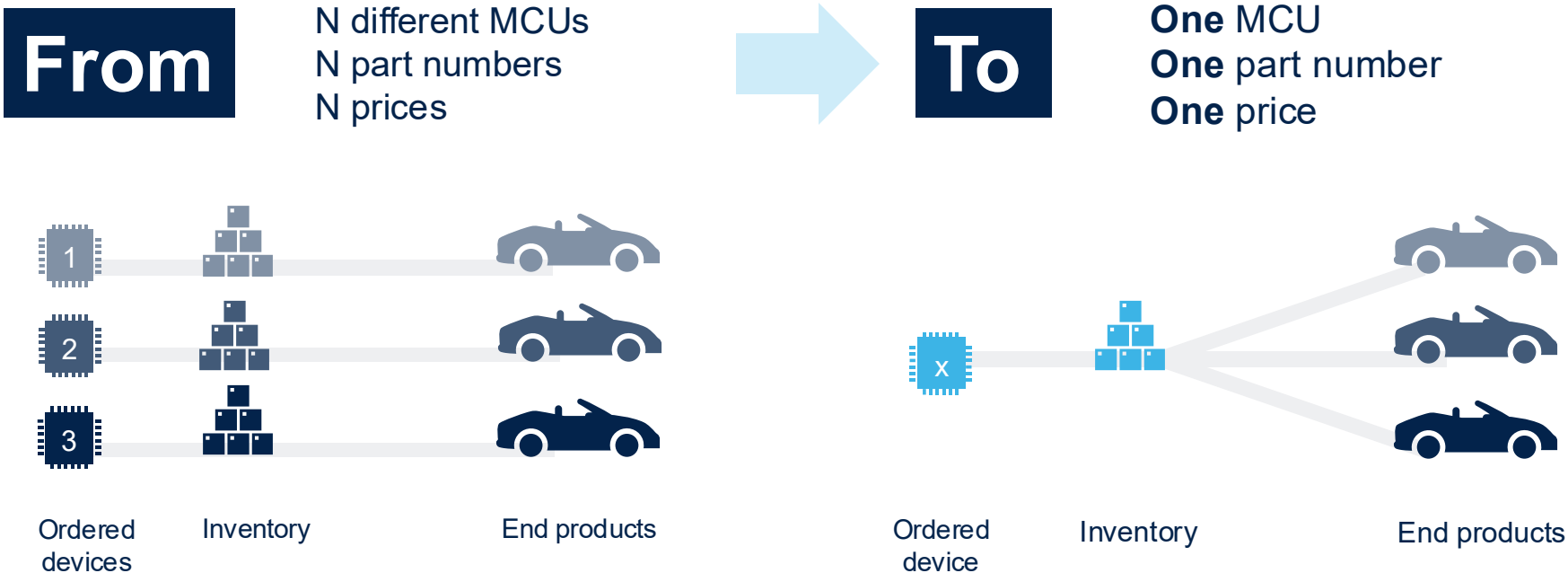


Stellar with xMemory: one part number with extensible memory supporting multiple or changing project needs

Streamlined procurement

Single part number supporting multiple project memory needs

A **single MCU part number** can support multiple vehicle models with different memory configurations, simplifying customer logistics and reducing costs



Simplified supply chain

Reduced inventories and costs

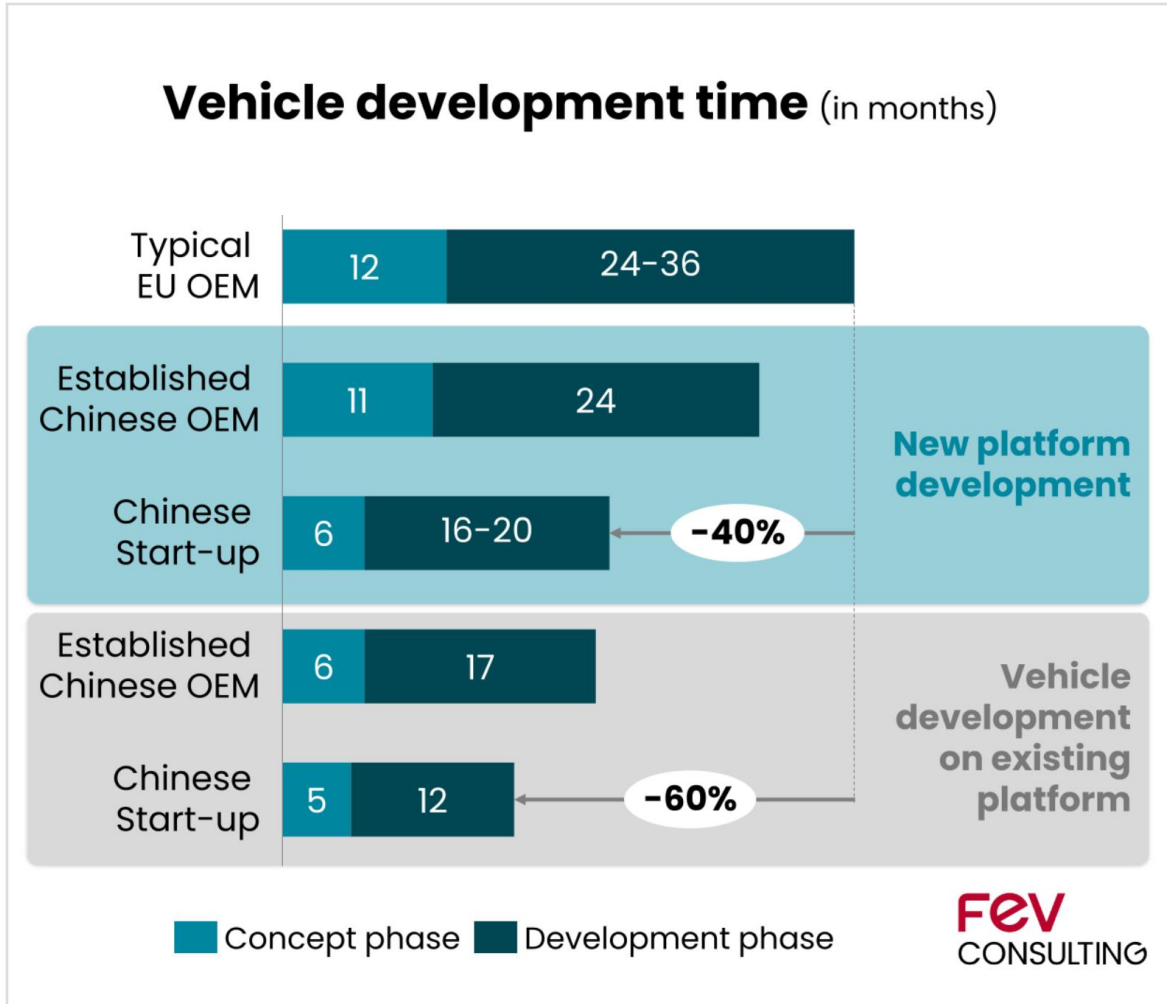
Flexibility across projects

Risk mitigation during shortages

Management of volume fluctuations

EOL management

Time to market: the strategic edge in the OEM race



Vehicle development accelerators

Extensibility

Platforms need to rely on **extensible devices** to be used across all models, reducing development time and effort

Reusability

Modular platforms, virtually **unlimited upgrades** through software



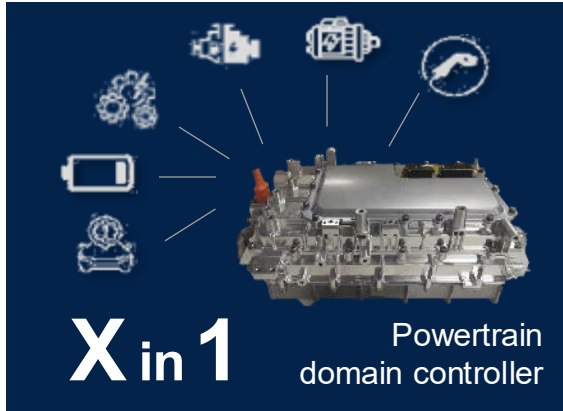
TTM and higher **ROI**

Future proof

With ability for **upgrades as software complexity increases** and new features are introduced

xMemory on Stellar G and P lines

Stellar for X-in-1 and zonal architectures



Stellar P

arm

Integration platform
High performance actuation

Products ready: P7, P6, P3
Multiple additional in roadmap

Stellar G

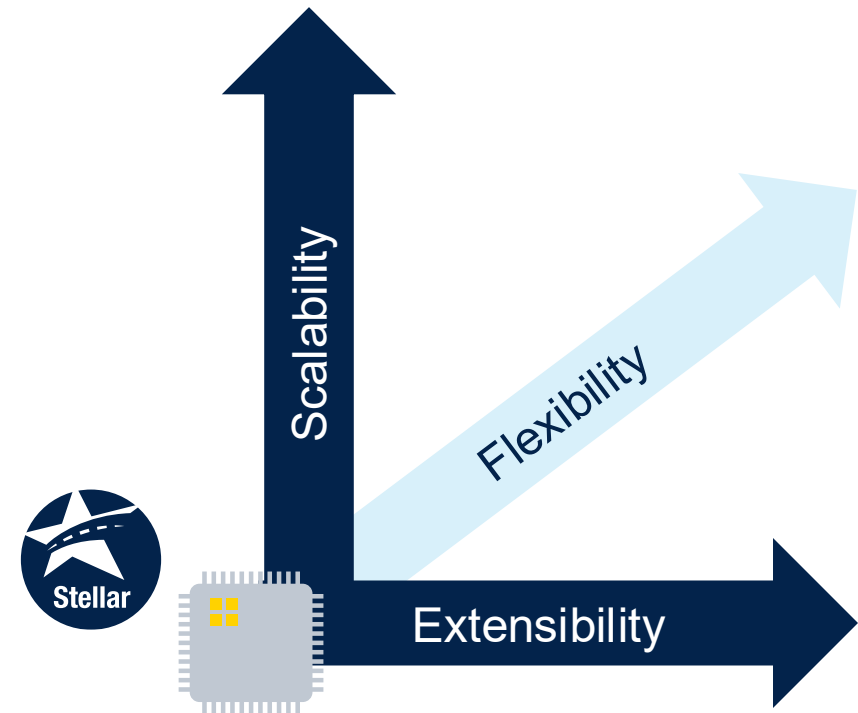
arm

Data and I/O aggregation
Ethernet centric, including switch

Products ready: G7
Multiple additional in roadmap



With xMemory, ST now offers a very **flexible** automotive MCU portfolio with a **scalable Stellar family** and adding **extensibility** through proprietary PCM technology.



Our technology starts with You



Find out more [on Stellar xMemory](#)

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