

TECHNOLOGY & PROCESS FORESIGHT

China's Fast Lane vs. Europe's Engineering: How AI Could Redraw the Race

Aachen Automotive Colloquium -- Strategy II Session -- 06.10.2026

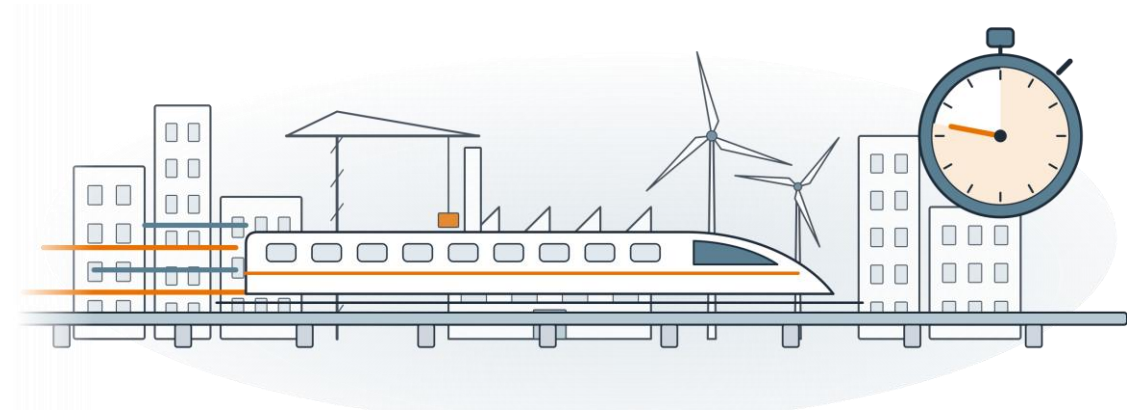
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China sets the pace in development, not just in volume



1,094

days from decision to launch



Xiaomi announced its car project in March 2021 and launched the SU7 three years later, with no legacy platform.

AUTOMOTIVE INDUSTRY

24-40

months development

Chinese OEMs. European OEMs need 48-60.

+17 %

R&D, BYD vs. -8 % VW

BYD RMB 63.4bn against VW's €19.4bn, FY2025.

GENERAL INDUSTRY

49.1 %

of all patent filings

1.8 of 3.7 million in 2024, up from 34.6 % a decade earlier.

50,400

km high-speed rail, +33 %

today against 37,900 km in 2020.

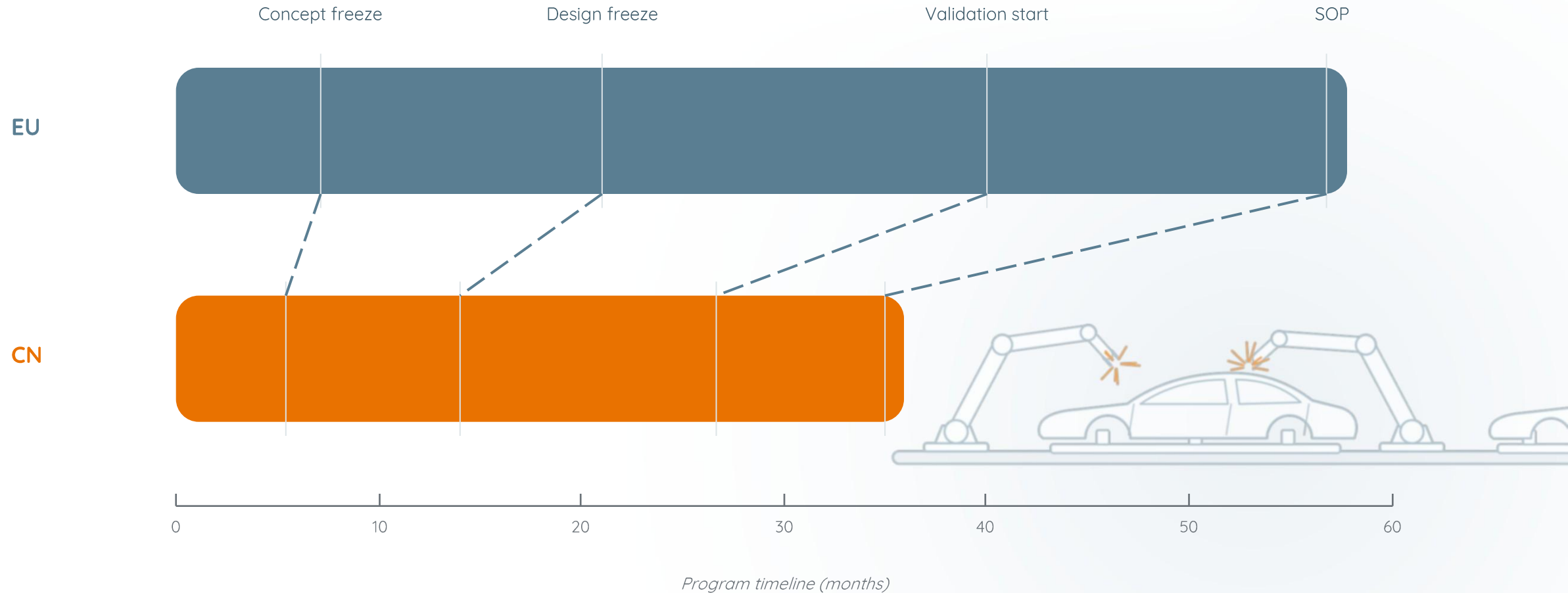
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Agenda

1. **China Speed: A systematic concept**
2. Implications for value creation
3. Where AI can help



Development cycles differ per phase



China Speed: a system property, not a method

IMPLICATION

High development resources increase the possible output, but do not explain speed.

Myth

- 996 Work Culture
- More engineers than Europe
- Lower quality standards
- Top-down control system
- Cheap labor as a competitive advantage

Reality

- Parallel instead of sequential development
- Short decision processes and clear responsibility
- Early market learning under real conditions
- Platform reuse and prepared scaling
- Cluster and supply chain proximity

More people in a slow system create more employment - **not automatically more speed.**

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Two coupled layers for one flowing process

STRUCTURAL SPEED SYSTEM

Structural layer

State prioritization · capital · infrastructure · market · cluster logic · coordinated competition

ORGANIZATIONAL DEVELOPMENT SYSTEM

Organizational layer

Decision rights · parallelization · platform approach · early integration · iteration · industrialization

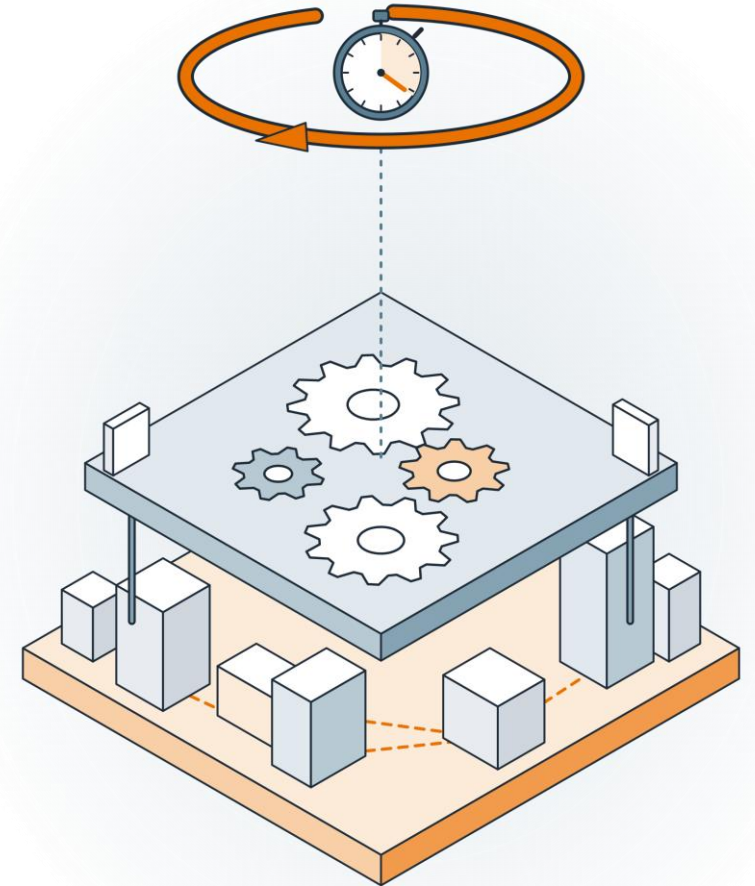
MAIN RESULT — SHORTER LEARNING CYCLES

Less waiting time between target, decision, experiment, integration, market feedback and scale-up

IMPLICATION

Development team stays slow if speed impact on ecosystem is not utilized.
Only the coupling of both layers produces speed.

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The structural layer impacts speed before the operational work starts

1 Strategic prioritization

Central direction, decentral implementation

- Stable targets and resources
- Center sets the ambition
- Local level picks the route

Example: **NEV battery push**

2 Protected iteration spaces

Coordinated competition

- Pilot zones test new models
- Several solutions run in parallel
- Consolidation follows real results

Example: **Shenzhen pilot zone**

3 Cluster density and physical proximity

Scaling is a pre-investment

- Local industry and research hub
- Capital and infrastructure early
- Scale hub according to demand not market certainty

Example: **Dongguan cluster**

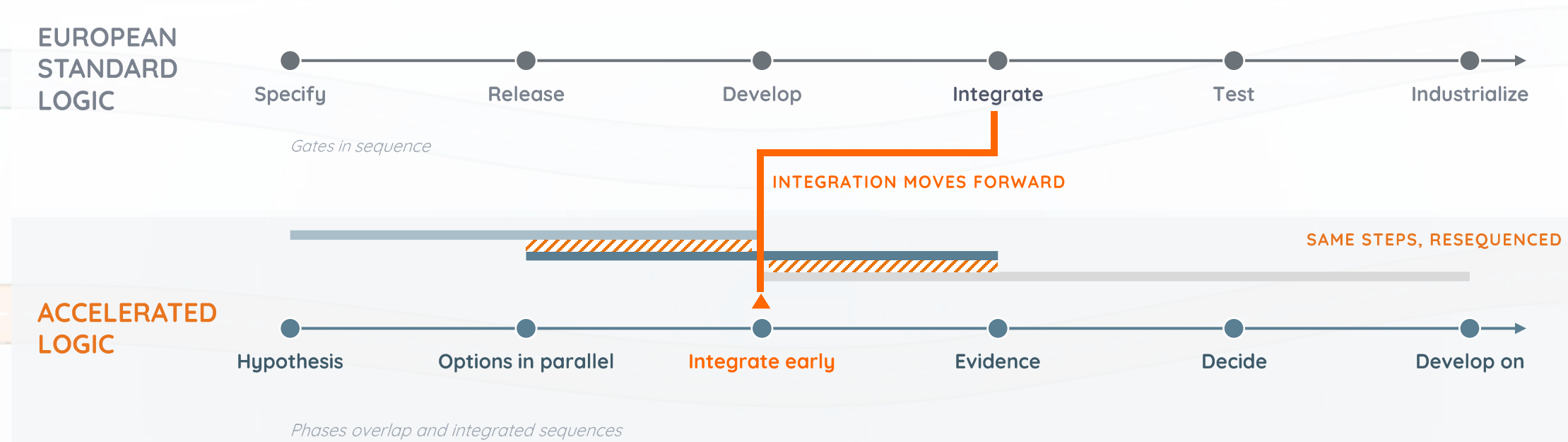
IMPLICATIONS

The Chinese system is set up within boundaries and structures.

Within these structures, independent clusters identify their gates and objectives within these boundaries until final scale-up in an enabling framework.

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Whoever integrates late, learns late



CONCLUSIONS

Intelligent iteration instead of reinvention

Platforms, modules and learning carry over between programs — no hand-over losses, no restart.

The market as a development lab

Launched vehicles produce the evidence: smaller decisions more often, judged on data rather than documented maturity.

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Implications for value creation

THE HARD WAY

Structure and organisation are harder accessible for quick wins — **top layer framework** is affected by external factors and internal inertia.

THE OPEN DOOR

So why not start on the operational layer?
The **process level** is already **open** — and it is where speed is actually won.



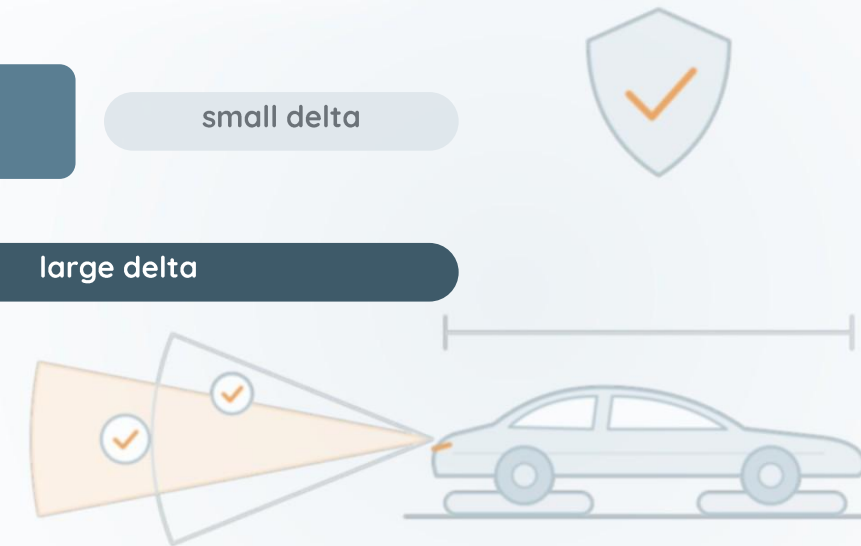
Different speed delta

HYPOTHESIS

Development process

Validation process

The regulatory requirement is comparable. The path to challenge the system against the requirements can be set up differently —that is the lever.



Development process

SMALLER DELTA — LITTLE ROOM TO MOVE

- Bounded by the **OEM and R&D framework** on both sides.
- Main and **mandatory process sequence** is equal for core development tasks.
- Little scope to shorten the R&D path itself.

Validation process

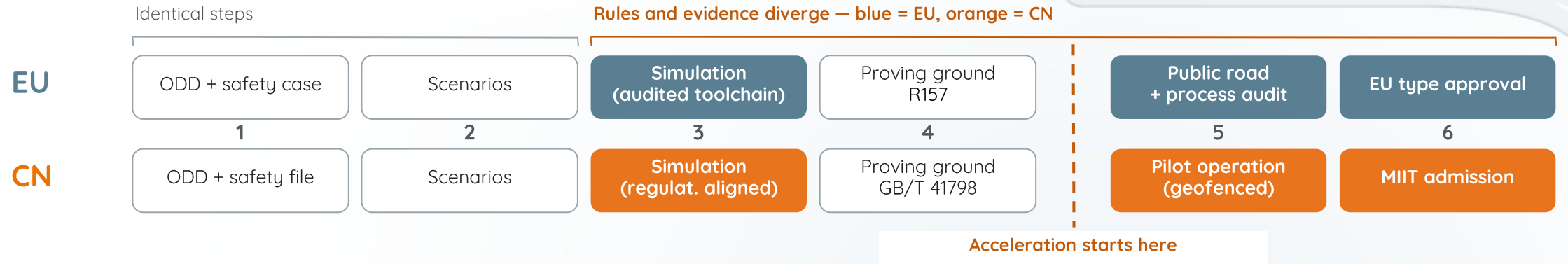
LARGER DELTA — THIS IS WHERE SPEED IS WON

- Same regulatory bar to clear in China as in the EU.
- **But:** more room to **tailor how** validation is run.
- **Different focus** can be set and set earlier.
- **Different data basis** and methods to validate against.

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Rules are comparably strict, evidence paths diverge

Example: **Complete ADAS Framework**



EU — 18-24 months Lane keeping system

- Safety + scenarios: **SOTIF, failure cases** R157 Anx 4
- Simulation: **toolchain certified up front** 2022/1426 III
- Track + road: **road test plus process audit** R155, R156, R157
- Type approval: **valid in all 1958-Agreement states** 2019/2144

CN — 9-15 months Same system

- Safety + scenarios: **10 s takeover, CN traffic** GB 44721, GB/T 45312
- Simulation: **method set, no tool certificate** GB/T 47025
- Track + pilot: **geofenced, monitored city pilot** GB/T 41798, MIIT
- MIIT admission: **one model, pilot zone only** GB 44495/96/97

Result

Same scoping work, but the 9-15 month **gap opens at simulation** sign-off and **widens through release**

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Where AI can help

THE WHOLE STORY

There is a significant time reduction lever for European development tools in validation phase, **but** it does not close the gap completely.

THE FURTHER STEP

AI can provide slipstream to lift further time saving potential



AI compounds where safety evidence is the constraint



ASSUMPTION

AI can **raise operational advantages** regarding iteration count and cluster proximity, but has **fewer impact on structural layer**, due to the boundaries set by decision rights or ownership.

Where AI contribute

- **Condenses requirements** into the traceable evidence effort according to actual needs
- Acts as a **high-skill, high-knowledge advisor** at the engineer's side

Where Europe gains

- Decades of **deep system, data and safety knowledge**
- That knowledge **steers AI most efficiently**
- AI takes over tasks, but for agentic approach the **direction and guardrails** set by engineers are crucial for quality

Where China differs

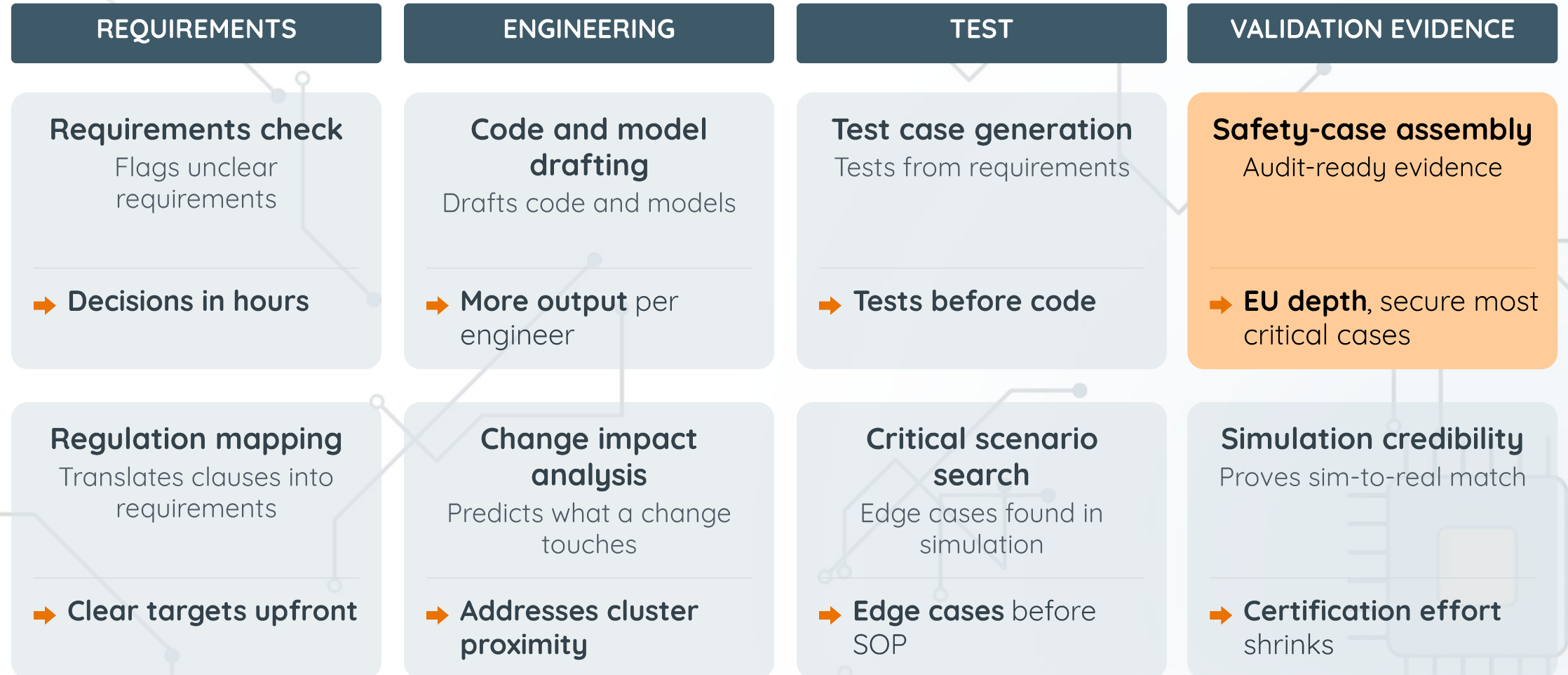
- **Comparable knowledge level**, but it sits **inside clusters**
- Difficulties in **knowledge diffusion and interfaces** due to cluster logic
- This limits the **steering efficiency** on which reasonable AI integration depends on

HYPOTHESIS

The biggest AI contribution to EU development against China Speed runs through the validation path, due to the advantage of **mature European data and method stack**.

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AI addresses the same bottlenecks the Chinese model addresses

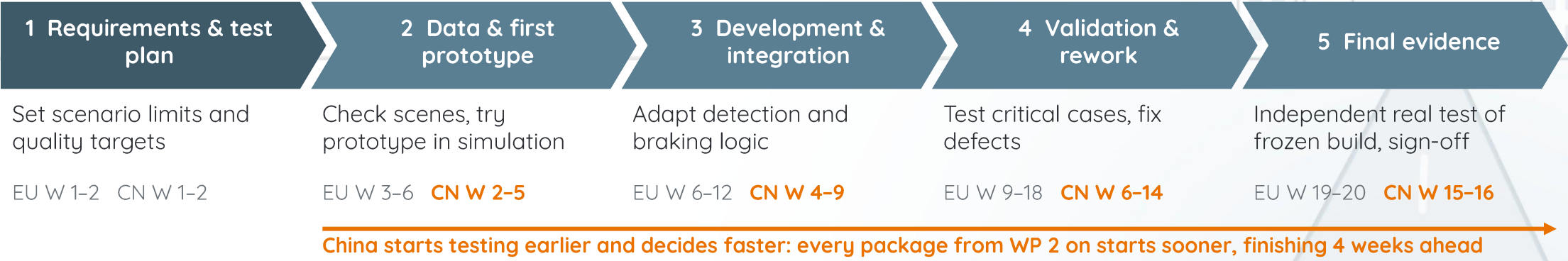


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Biggest speed lever through AI in EU

Real world hypothesis test: Same update four weeks earlier

TASK: Update AEB software so it brakes in time for a child stepping out behind a parked car, without false braking. Same platform, data, teams and test criteria in both variants.



LEVERS BEHIND THE GAP

Lever	Europe: baseline	China: example	Edge
Early prototype	Larger function package before system feedback	Small running build for early simulation	China
Process parallelization	Validation waits for a later integrated candidate	Test development and function start together	China
Decision cycles	Changes aligned across several owners	One mandated owner decides on a fixed cadence	China
Quality evidence	Defined test criteria, independent sign-off	Same test criteria, independent sign-off	Equal

Illustrative process variants, not country benchmarks. All week values are model assumptions; work packages overlap and do not add up.

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AI brings Europe development in reach with China

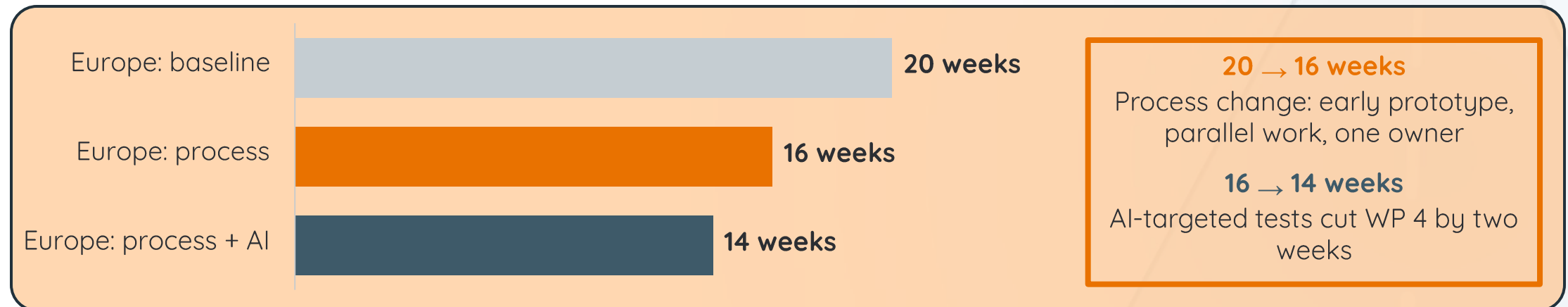
Why Europe benefits more

- **Deep validation competence:** VVM links requirements and data traceably to tests and findings
- **What AI needs is in place:** representative data, independent test cases, validated simulation
- **Experienced engineers steer AI** and set guardrails; real cross-check and independent sign-off stay

Where AI saves time: WP 4 Validation

- **Searches data** for occluded pedestrians and similar failure cases
- **Prioritizes tests:** vary speed, visibility and emergence time to hit critical combinations
- **Cluster failure** detection and picking targeted retests; mandatory checks stay

TIME TO APPROVED UPDATE



Takeaway

THE SMALLER GAP

Combination of process layer and AI boost can shrink time differences — though not eliminate them.

THE LEARNING

Transfer learnings without only copying the system is crucial for local companies to stay up to pace.



Every speed-up principle carries a drawback that has to be priced in

ACCELERATION PRINCIPLES

SYSTEMIC DRAWBACKS

- ADOPT**
- 1 Clear decision rights at every level
 - 2 Small, frequent evidence gates instead of rare stage gates
 - 3 Kill, pivot, continue and scale as active options
 - 4 Synchronized hardware, software and industrialization cadence
 - 5 Accountability for outcome, not only for process conformity

- AVOID**
- Local duplicate structures and overcapacity*
 - Ruinous price competition and thin profitability*
 - Politically driven misallocation of capital*
 - Quality and safety risk under sustained pressure*
 - Burnout, social pressure, local protectionism; development outruns institutional learning capacity*

China Speed does not mean working faster.

It means learning, deciding and scaling with less systemic waiting time.

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Five concrete management shifts



IMPLICATION

What needs to change in development governance? Here are **five operational shifts** that the fastest development organisations in the world have already made.

1

From committees to
decision rhythm

2

From sequential to
parallel

3

From later supplier nomination
to early co-development

4

From physical-first to
virtual-first validation

5

From pilot projects to
scaling logic

TOUCH-POINT

The decisive question for every company in this room: **Where are we losing time without gaining quality?**

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An approach to ACCELERATE INNOVATION



IMPLICATION

The specific question is: **Where is development and market effectiveness lost today** – and how can this be systematically accelerated? strato7 proposes a structured, measurable approach.

1

Speed Diagnosis

Make development and decision-time **losses visible**.
Systematically identify interfaces, rework, late integration, offer duration and gate latencies.

2

Acceleration Cell

100-day **pilot** on a specific product, customer or industrialization topic – with **measurable results** and a clear scope.

3

China Speed Translation

Systematic testing: Which China Speed Principles can be **translated productively** – without compromising on quality and compliance?

4

Industrialization Impact

Measurable KPIs: Time-to-Decision, Quotation Lead Time, Prototype time, Rework-Quote, Time-to-Quote, Time-to-Series.

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Culture as a structural lever to INCUBAIT innovation within engineering and R&D

MOTIVATION

Make innovation culture **visible, concrete and actionable** – and enable development organizations to learn faster and turn innovative approaches into products more effectively.

1

Starting point

- Many ideas, **low implementation rate**
- **Friction** between organization, cost and accountability at the **interfaces**
- Methods **without tangible impact**

2

Approach

- Culture is not preached, it is **designed into the structure**
- **Structure** as a **pull** factor: innovation is actively attracted, not merely permitted
- **Technology implementation** as the **starting point**, not the goal

3

Impact

- **Faster decisions** and shorter escalation loops
- **Ownership** and seamless interfaces
- Shorter time-to-learning and **time-to-market**

ENTRY POINT

A **90-day pilot** for one team or value stream – including a KPI set with 4–6 metrics and verifiable impact.

Let's talk!

strato7



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