

# *Integrating World-Class High-Speed Rail Equipment Design into the U.S. Market*

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## Agenda

**1 Technology**

**2 Proven Technology**

**3 Infrastructure Requirements**

**4 Challenges**

**5 Interoperability**



# Technology – Platform Concept

**SIEMENS**



## High Speed Technology:

- is safe and reliable
- is based on a comprehensive systems approach
- must remain light weight
- runs up to 220 mph
- is high tech and requires decades of experience
- carries sophisticated systems on board
- requires significant investments (infrastructure and manufacturing)
- requires tight tolerance management

→ Manufacturers focus on platform concepts

# How can proven technology go into revenue service?

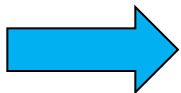
High speed trains worldwide have been in service for over 40 years

- All countries that have introduced high speed trains have understood that this is not a product that can easily be modified for local desires
  - Volume does not justify radical changes
  - High engineering efforts for modifications
  - Limited supplier base for critical components

100% PROVEN

## Why does it work?

- For true HSR operation, dedicated, grade separated lines are necessary
- Train control component is an integral part of the system
- Central monitoring of trains and track
- Cab / Wayside signaling, transmitting data to the driver
- Reduced speed on shared tracks

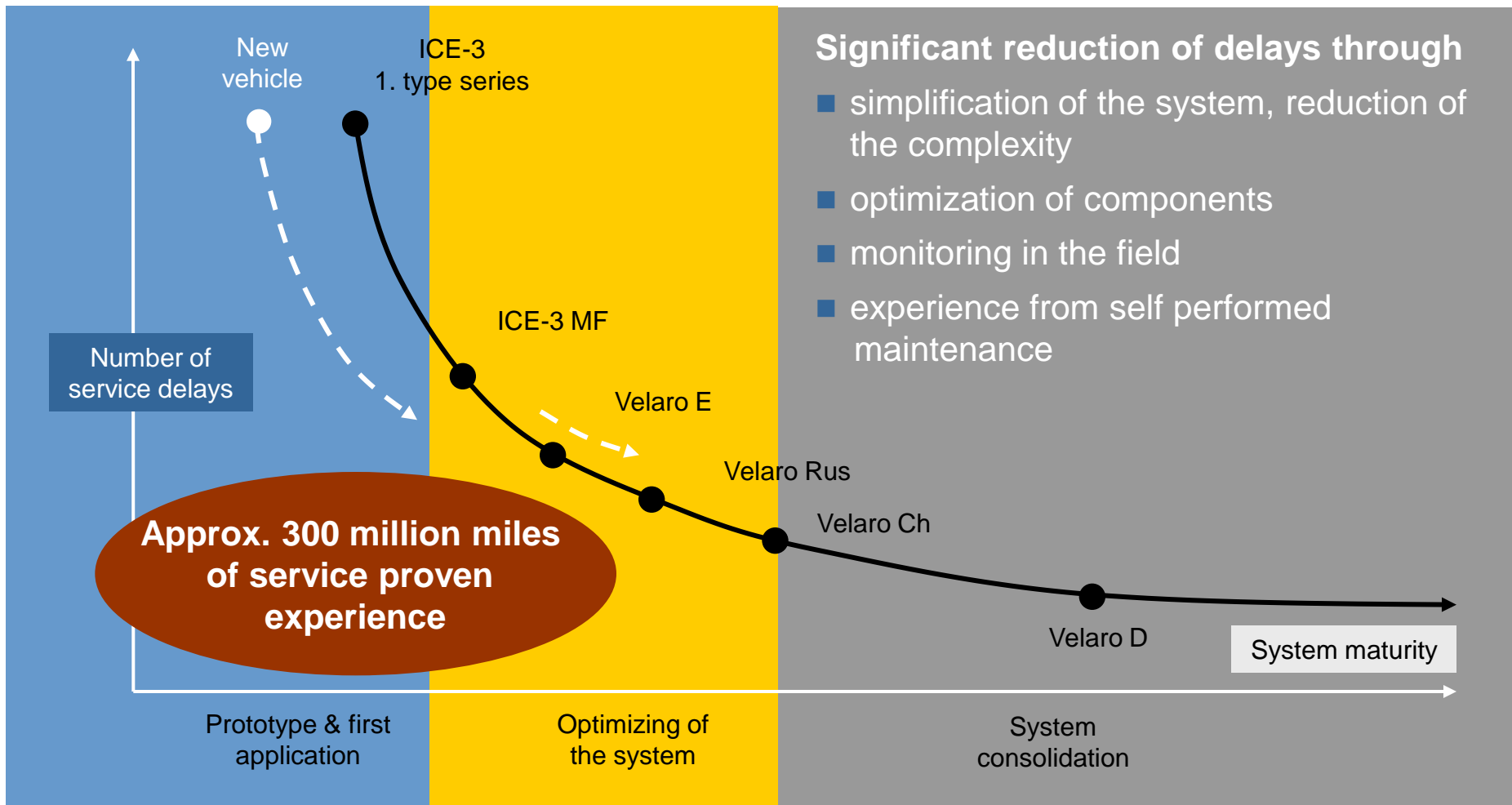


**Introduction of proven technology ensures Safety and Reliability**

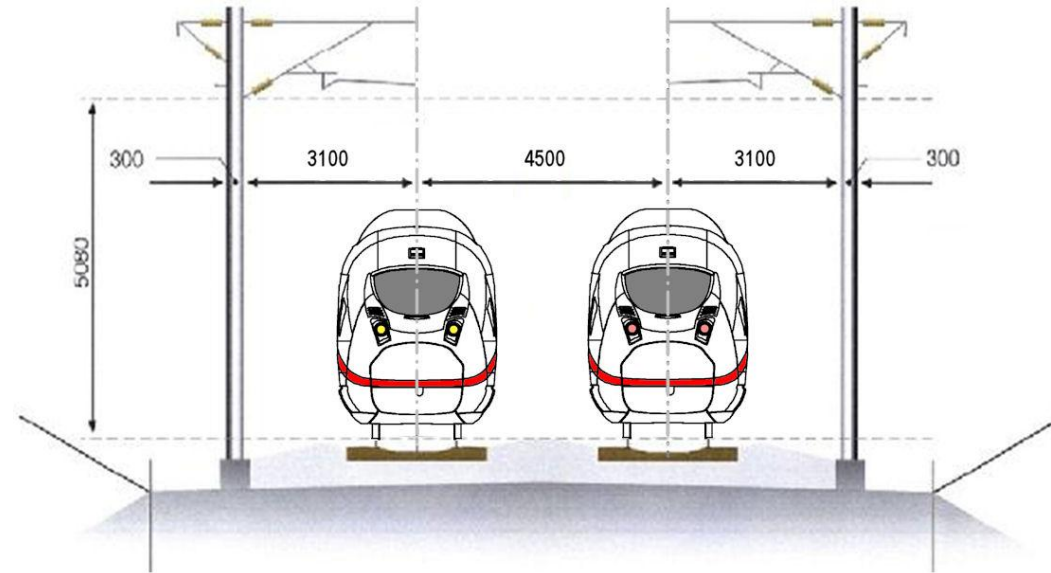


**Don't change something that works!**

## Proven technology – Maturity is proof



# Infrastructure Requirements



## HSR requires:

- Approach based on service proven systems components
- Rolling stock, train control/signaling, power supply & management work hand in hand
- Continuous supervision and communications
- Intrusion protection, controlled access
- Tight infrastructure tolerance management (track, catenary, etc.)

→ Infrastructure requirements are becoming more and more standardized

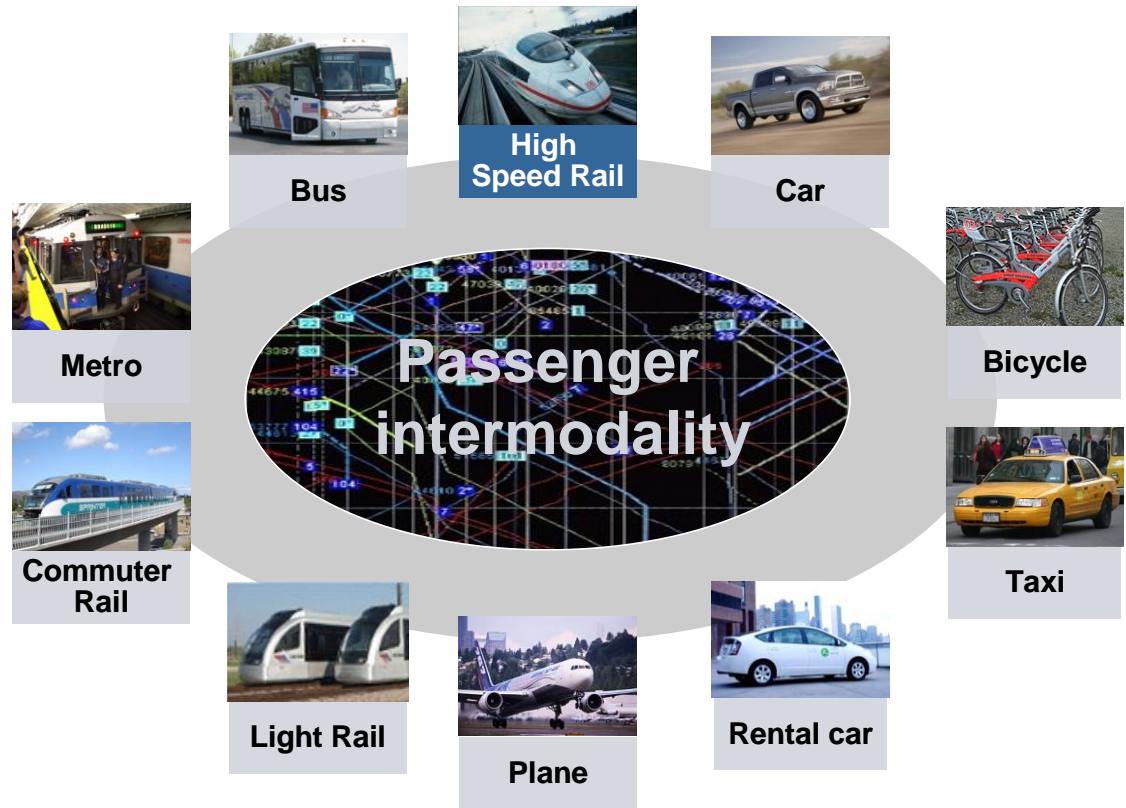
## Challenges – Bringing off the shelf to USA



- Regulatory acceptance of crash avoidance
  - Continue on the positive track!
- Avoid “American” modifications and acceptance of “proven technology”
- Avoid too many “regional solutions”
  - Track gauges
  - Platform heights
  - Different signaling/train control solutions
  - Track standards
- US HSR supply base not in place yet

# Passenger Intermodality is the key for High Speed Rail networks

- Interchange Stations to link with Feeder Systems
- Direct connection of airline hubs by rail
- Park & Rail facilities for commuters
- Car Rental / Car sharing at station
- New ticket systems, e.g. Integrated City Transit & HSR tickets





Thank you

