"Safety Technology for Buses"

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Kenneth Koh
CEO
TechSource Systems Co., Ltd

Subaru 360

- 356 cc
- two-door city car
- from March 3, 1958 to 1971
- Nicknamed “Ladybug” Japan

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Compare Subaru 360 with Today Car

Subaru 360	Today Car
4 Wheels	4 Wheels
Engine	Engine
Mechanical Link	Mechanical Link

NO SOFTWARE

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A Little Story of Hand Brake

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WHAT THE POINT?

- It work with Push of a Button
- Manual hand brake may lock up
- During a emergency brake
- With Electronic car on a slope
- could be prevented roll back
- Automatically
- Simplify the centre compartment
- design

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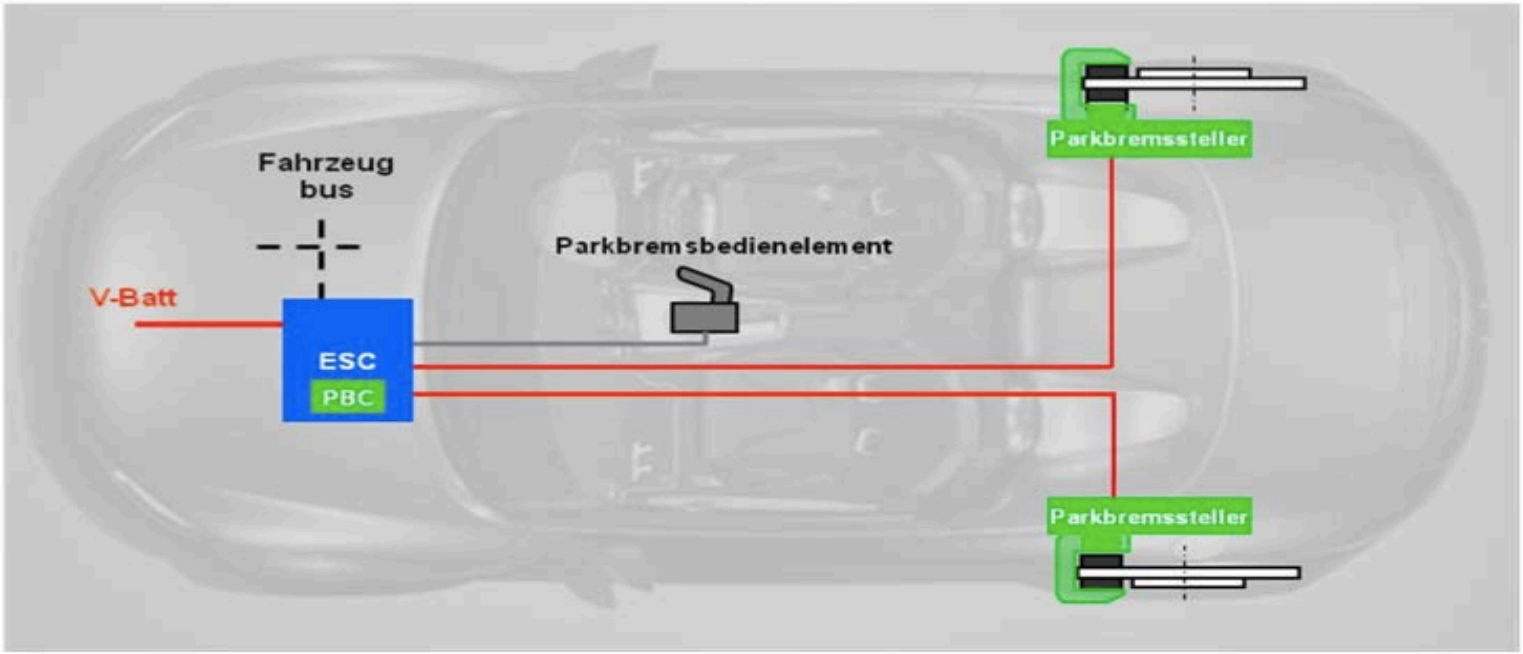

Figure 2B1: Schematic diagram of the integrated electric parking brake

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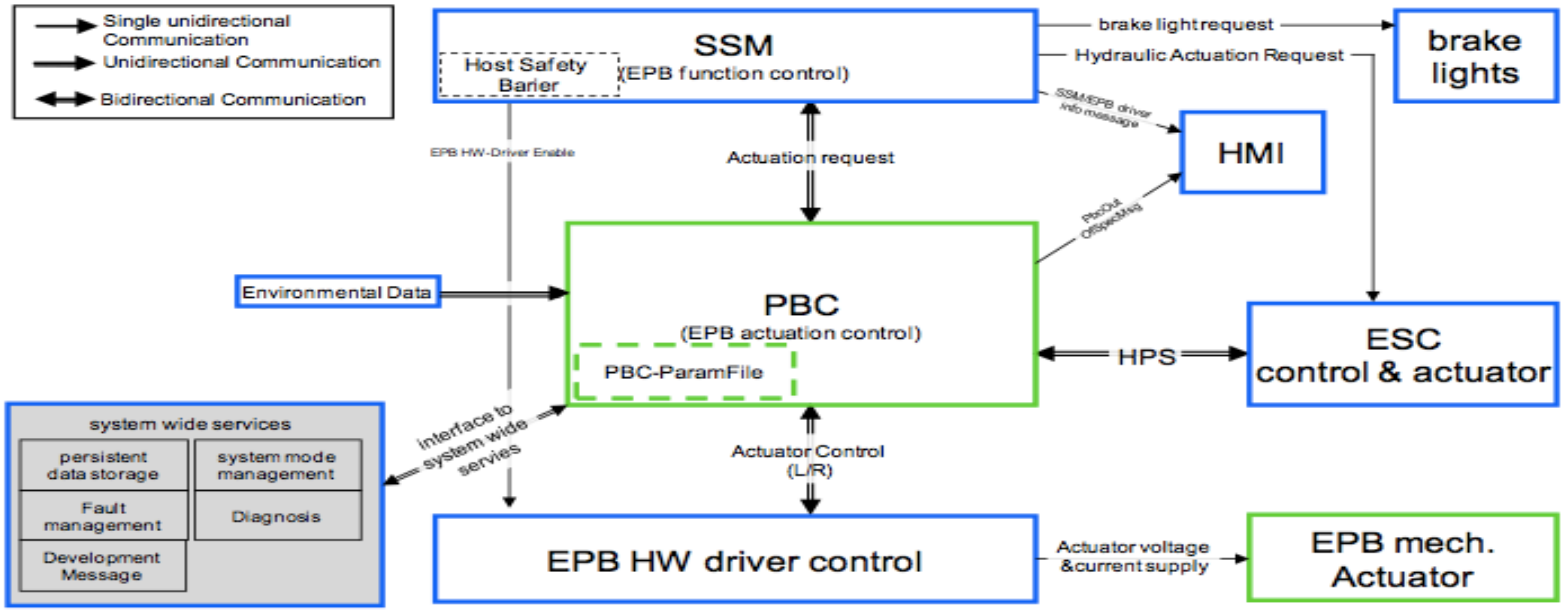

Figure 3.1.B1: Specimen functional architecture of the integrated EPB system including interfaces

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Electronic Parking Requirement:

- hardware components
  - the power electronics necessary for activating the parking brake actuator in either direction (release or apply) and the associated measurement of electric current and voltage
  - the hydraulic actuator (ESC unit) for support as needed to the parking brake system for dynamic and static functions
  - provision of the necessary resources for the PBC component to run:
  - volatile and non-volatile memory
  - computing power (run time)
  - communication interface with the vehicle network

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- software components:
  - ESC functions for supporting the parking brake system in dynamic and static functions
  - driver information interface
  - fault manager
  - degradation management
  - diagnostic interface
  - control software for the EPB power electronics
  - signal processing (recognizing signal from parking brake switch sensor and network signals)
  - standstill manager (SSM)

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VDA	Recommendation for integration of Electric Parking Brakes control into ESC Control Units	305-100

This non-binding recommendation by the German Association of the Automotive Industry has the following objective:

Definition of a technical standard for integrating the electronic parking brake actuator into the ESC (Electronic Stability Control) system, for cooperation between different suppliers (OES) of the ESC (ESC assembly) and the brake caliper (brake assembly)

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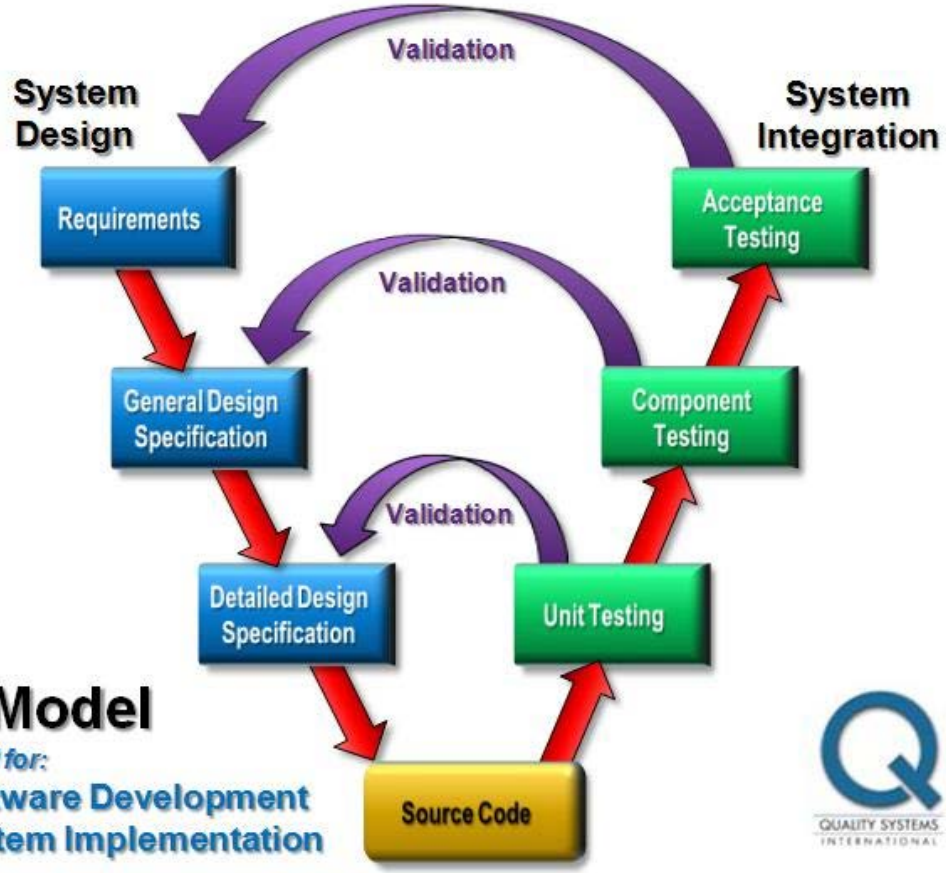

V-Model

Used for:

Software Development
System Implementation

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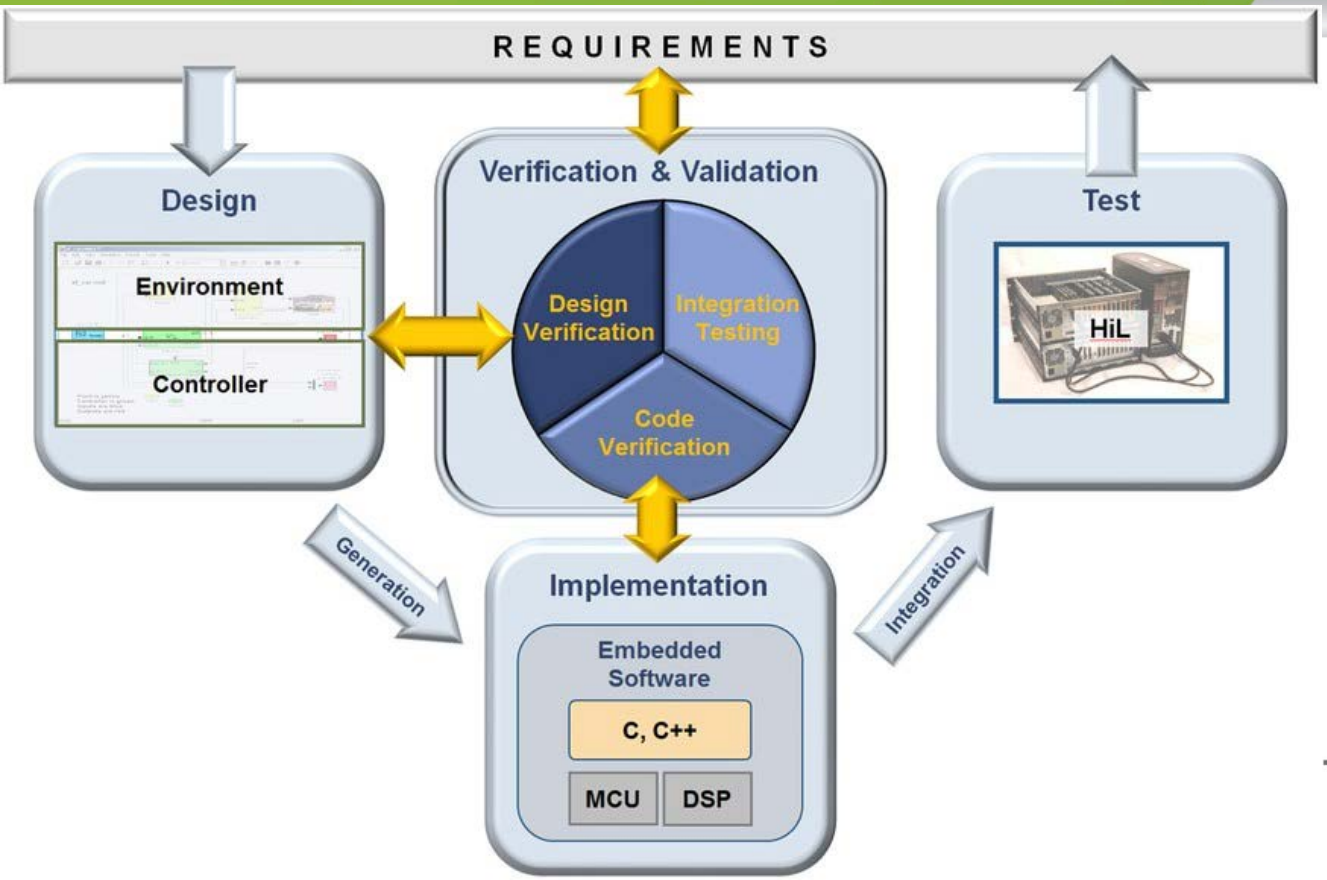

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V2V The Future of Driving

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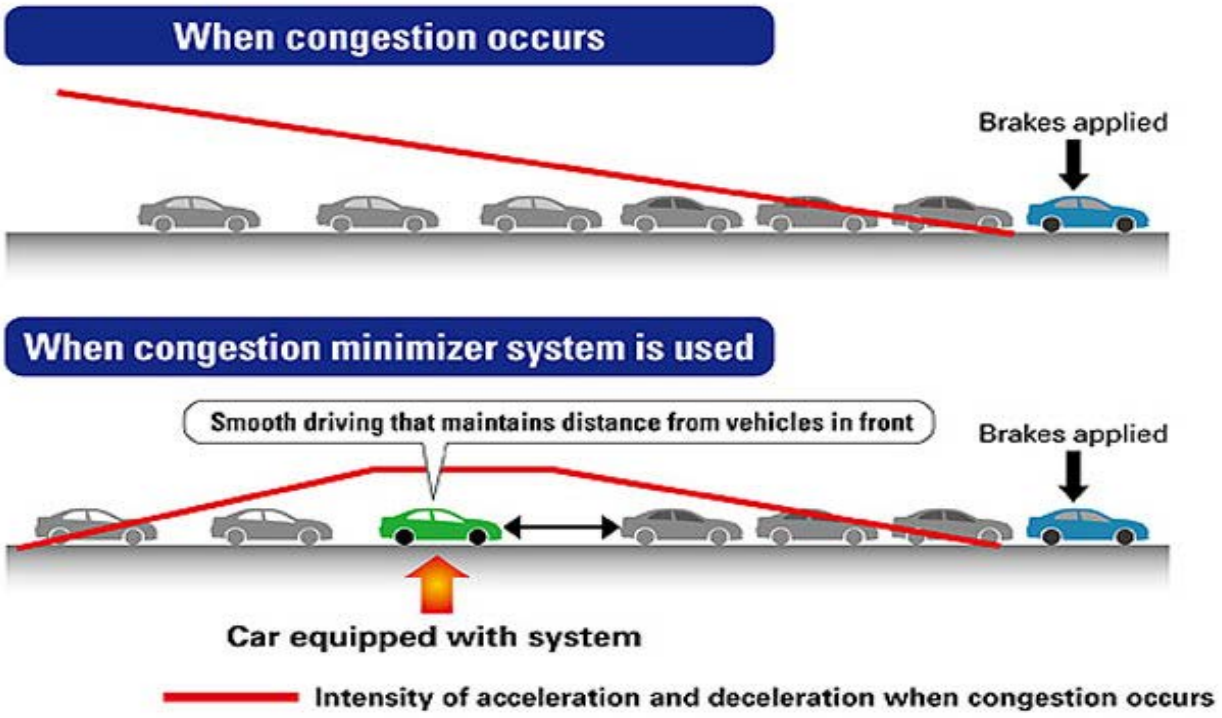
Image of congestion prevention effect with the system



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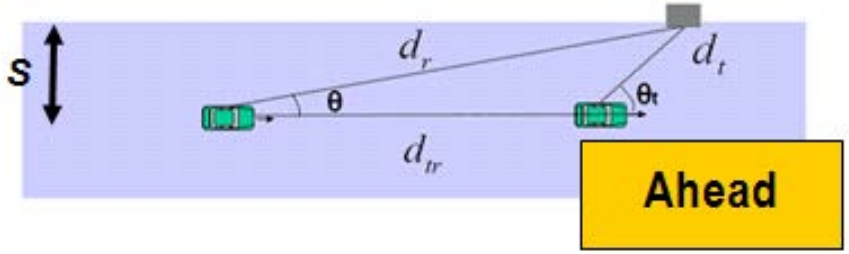

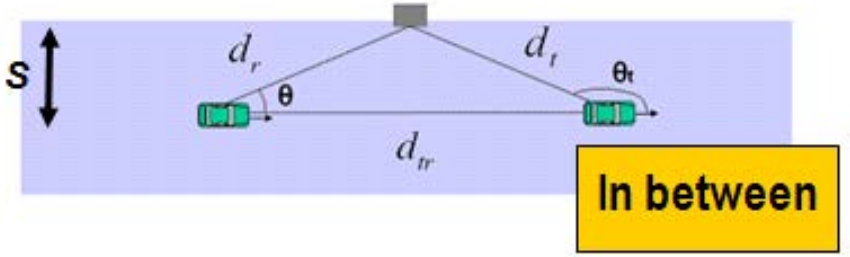

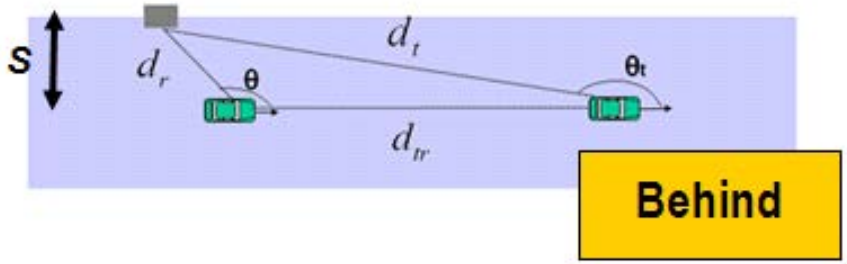

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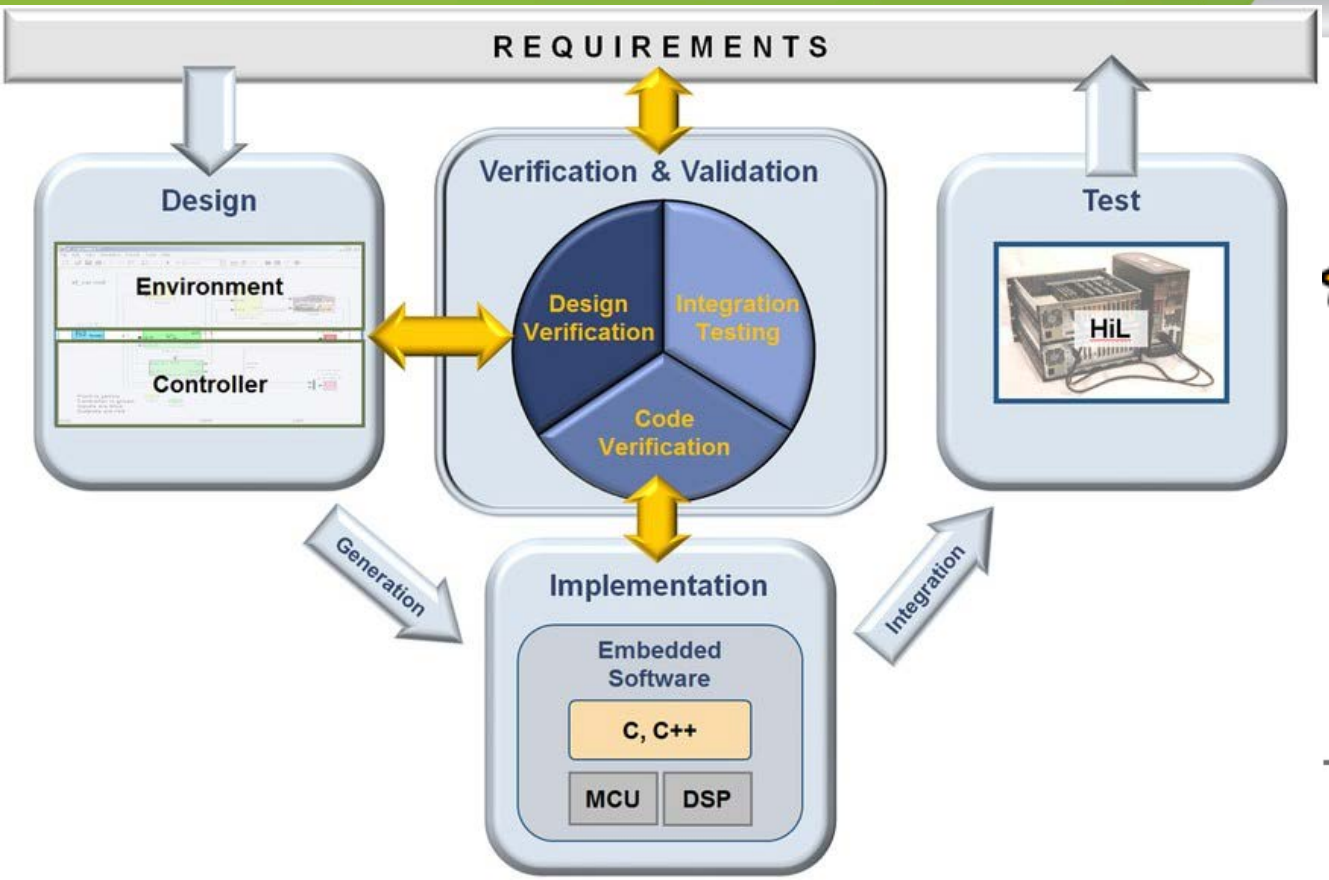

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