NXP S32X AUTOMOTIVE PROCESSING PLATFORM

BRINGING FUTURE VEHICLES TO MARKET FASTER
Global megatrends
Driving the need for next generation silicon capabilities

Connectivity
One hour per day in the vehicle

Autonomy
1.3 million global road fatalities every year

Electrification
US mandates 163 grams / mile and 54.5 MPG by 2025

Safe and Secure Mobility
An incredible opportunity and an incredible responsibility
Our vehicles are becoming software driven

Today’s Vehicle
contains greater than **100 million** lines of code

Tomorrow’s Vehicle
**6X** more lines of code

The car today contains more software than any other embedded system and most compute applications

Source: Informationisbeautiful.net

Source: Strategy Analytics, NXP
Automotive is changing faster than ever …

Today
Distributed vehicle architectures
Incompatible silicon and software
Security and over-the-air update challenges
Inefficient development
Not easily upgraded or scaled

Tomorrow
High performance domain architectures
Greater network capacity
Secure, safe over-the-air updates
Efficient to develop
Upgradable and scalable platform, future proof
Different Innovation Strategies
Evolution & Revolution

ACCELERATE AND WIN
IN BOTH WORLDS

Revolutional

Evolutional

Safe, Secure
Mobility
Megatrends

90 percent of car innovations is through electronics -- more connectivity, autonomy and electrification changes how automakers design

Software

More lines of code in an advanced vehicle than a modern passenger aircraft – and it will continue to increase

Hardware & Performance

Scalability and high-performance processing is required to meet the increasing demands of secure, safe driving
How will automakers meet the challenges?

Megatrends
What if the path to more connected, autonomous and energy efficient cars is accelerated?

Software
What if development time could be cut down – as much as 90% – with software reuse?

Hardware & Performance
What if ten times the processing performance was available?
A new development paradigm for carmakers & auto suppliers

10X the performance of today’s best performing safe automotive platforms¹

Reduces software development effort by 90% within application domains, and by more than 40% across application domains²

Delivers new levels of automotive safety, security and over-the-air (OTA) capabilities

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¹ Based on publicly available competitor roadmap performance statements.
² Based on analysis of existing NXP software code in existing customers’ applications, NXP expects that software reuse will be significant both within domains and across vehicle domains at up to 90 and more than 40 percent respectively.
S32x Automotive Processing Platform

World’s First Fully Scalable Computing Architecture Meets the Challenges

• Industry leading performance and scalability across multiple application domains
• Reliable automotive-grade technology platform
• Common hardware and software delivers safety, security, and over-the-air updates
Maximizes hardware and software reuse across products and applications.
Maximizes hardware and software reuse across products and applications
The New Driving Experience

Get safer, secure cars and services across any vehicle system – *faster*

- Always securely connected to the outside world
- Newest safe autonomous and semi-autonomous cars roll out to the market faster
- Increase energy efficiency and lower emissions
- Automatic software refresh – no trips to the car dealership
NXP’s Next Generation

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Performance 10X  
Software Reuse Up to 90%  
Safe ASIL-D Fault-Tolerant  
Secure End-to-end throughout car  
OTA Fault recovery rollbacks  
Arm Cortex®-M, -R and -A cores on common platform
SECURE CONNECTIONS FOR A SMATER WORLD