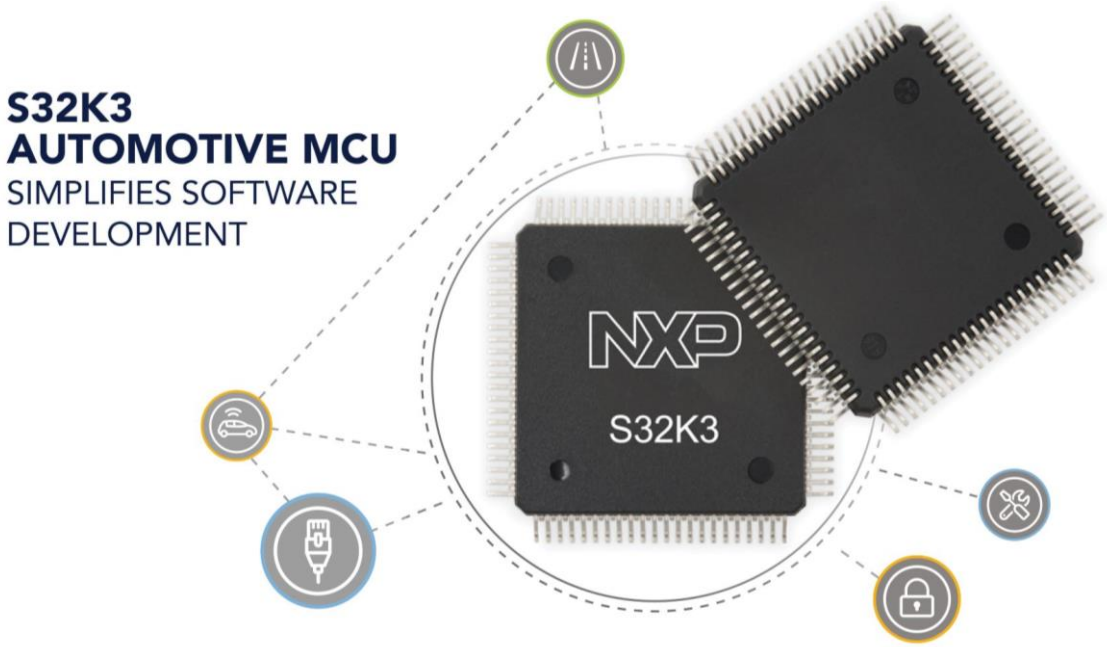
S32K3
SOFTWARE & TOOLS

SECURE CONNECTIONS
FOR A SMARTER WORLD

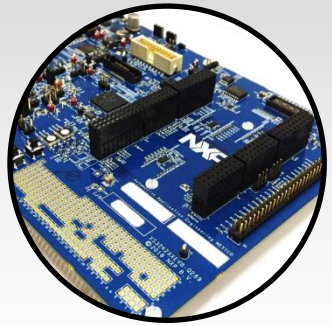


AGENDA

- S32K3 Solution
- Runtime Software
- Software Dev Tools
- Application Specific SW
- Partners & Business Model

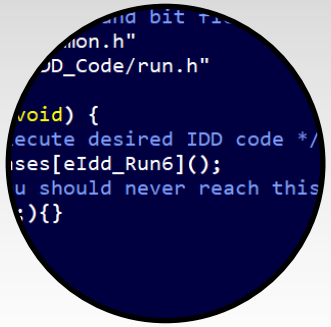
S32K3 SOLUTION – MAKE DEVELOPMENT AND PRODUCTION EASIER

Hardware Platform



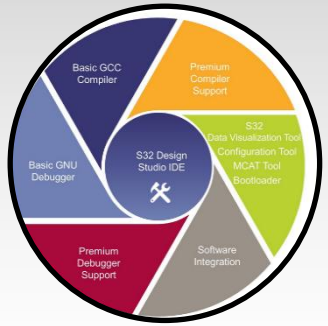
- EVB enables access to MCU full feature, basic debug with on board OpenSDA (no extra HW debugger needed)
- System reference design board(LED, Telematics)
- MCU + SBC solution level HW design guideline

Runtime Software



- Real Time Driver (no extra cost)
- Security & OTA SW
- Safety Framework + SCST SW
- Multi-core Management SW
- Driver for SBC, BMS IC etc

Software Dev Tools



- S32DS IDE and config tool
- FreeMASTER, Model based design
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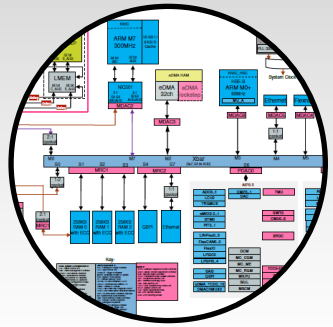
- Power consumption management tool

Application Specific SW



- BMS
- Motor Control
- LED lighting

PARTNERS

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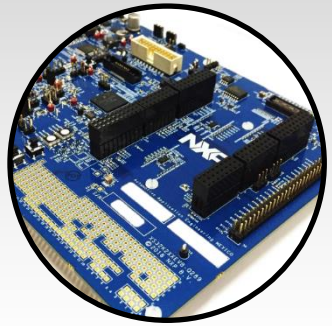

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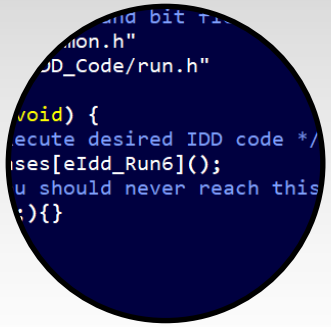

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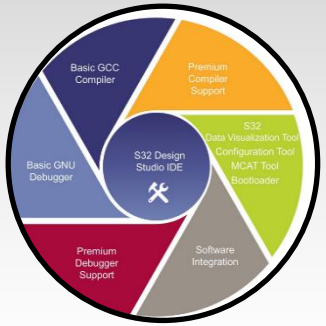

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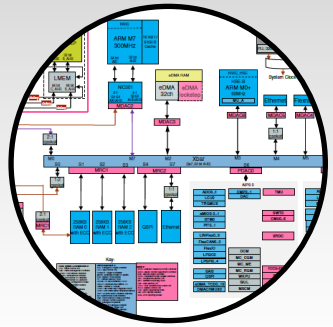

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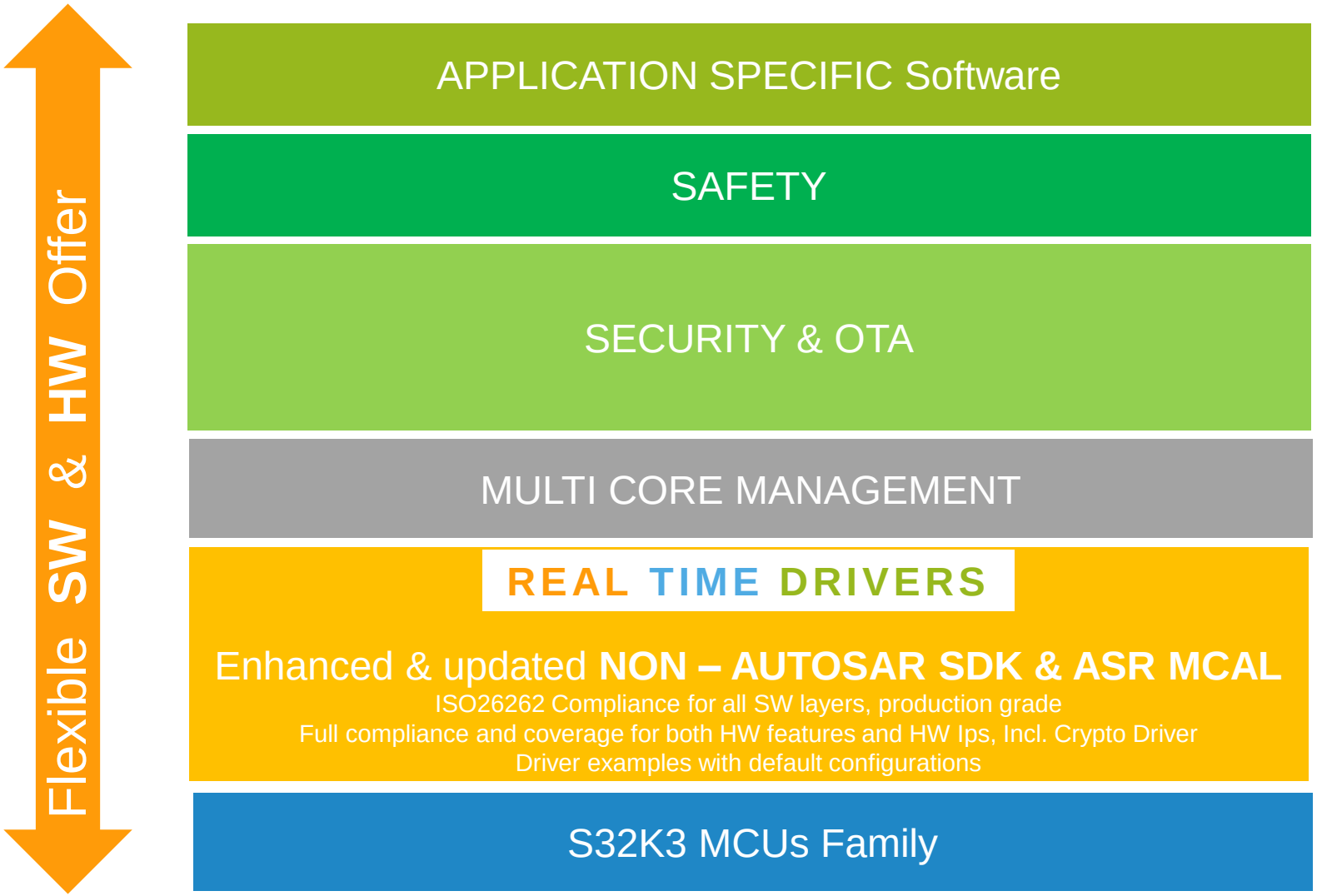
PARTNERS

NXP NEW SOFTWARE BASED ON REAL TIME DRIVERS



- Unmatched **HW scalability**

  across GP & IS MCUs

  combined with

- REAL TIME DRIVERS

  flexibility

One SW development environment independently by the project requirements and specifications

One configuration tool and one driver set

means less time and higher optimization of functionalities

REAL TIME DRIVERS

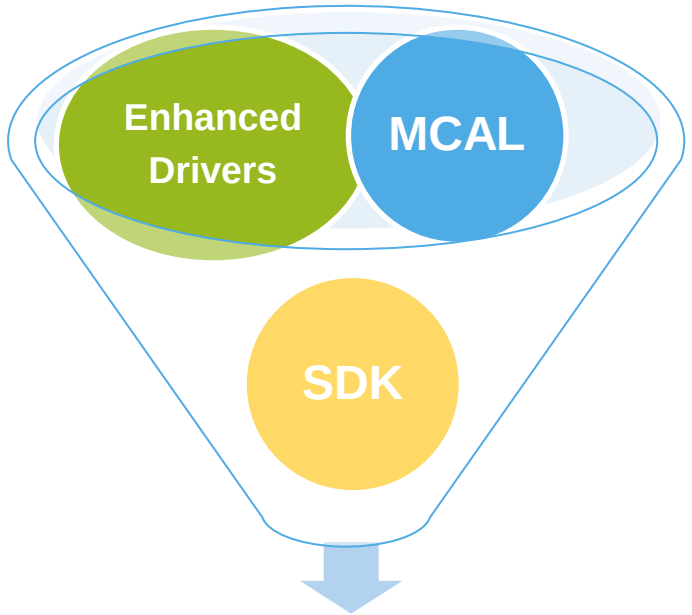
NEW AND INNOVATIVE DRIVERS SET FOR AUTOSAR AND NON-AUTOSAR SOLUTIONS

- Specifically focused on **Real Time Software**
- Targeted for MCUs based **on ARM Cortex M-cores**
- **Single package for each** S32 MCU or Processor

For **ASR** and **non-ASR** systems

Enhancements

- ISO26262 Compliance for all SW layers
- AUTOSAR functionalities (e.g. multicore, user mode) are expanded also to non-ASR environment (previously only available for ASR)
- Full IP and features coverage for both ASR and non-ASR
- Possible integration on platform level of middlewares (FATFS for EEP, FEE for FLS *derived from MCAL*) and stacks (LIN, NFC, TCIP, ..)
- Driver examples with default configurations



Real Time Drivers

AUTOSAR & Non-AUTOSAR

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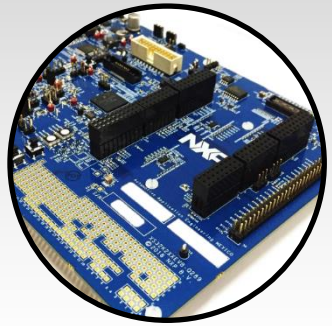

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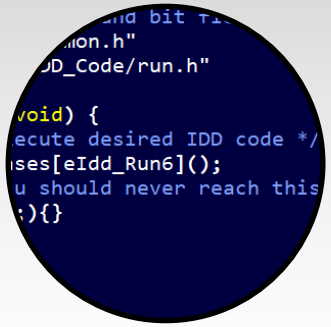

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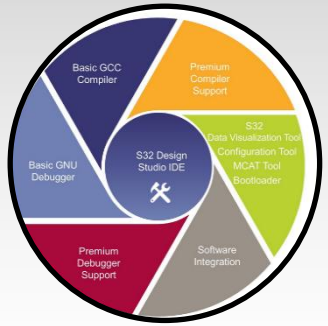

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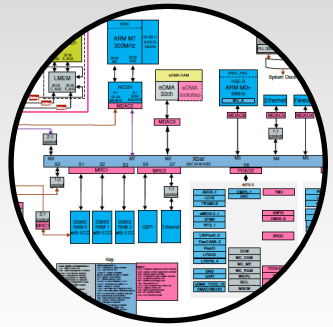

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S32K3 SOFTWARE AND TOOLS OVERVIEW

	Software Name	Description	Supported Devices	Code Format	Quality Level	Business Model	Where to download
Runtime SW	Real Timer Driver	Drivers set for AUTOSAR 4.4 and non-AUTOSAR solutions	All K3 derivatives	Source Code	Functional Safety ISO26262 Compliant	Price included in silicon price	link
	MCAL crypto driver 4.4	AUTOSAR MCAL standard crypto driver	All K3 derivatives	Source Code			
	TCP/IP stack LIN Stack	NXP's port and integration of the LwIP open-source TCP/IP stack and LIN protocol stack	All K3 derivatives	Source Code	SPICE Compliant (QM)		
	Standard Security FW	HSE firmware and sBAF	All K3 derivatives	Binary(HSE) Built-in (sBAF)			
	Platform Integration SW	A bundle of complex demos oriented on the customer use-cases and leveraging all runtime SW components.	All K3 derivatives	Source code			
	IPCF	Inter-core communication framework	All dual/triple core K3 deriv.	Source code	Functional Safety ISO26262 Compliant		
	Premium Security Firmware	HSE firmware integrating customer specific requirements. Two versions available: GM, Volkswagen	All K3 derivatives	Binary	SPICE Compliant (QM)	Purchase by specific silicon part number	
	Premium Safety Software	• Structural Core Self Test: Library of optimized tests for the Arm Cortex M7 core. Provides required Diagnostic Coverage (up to 90%) in runtime • Safety Software Framework (SAF): SW components for establishing the safety foundation for customer's safety applications compliant with ISO 26262 functional safety	All K3 derivatives	• Structural Core Self Test: source code • SAF: source code	Functional Safety ISO26262 Compliant	License Model (one time license fee)	link
	FreeRTOS	Open source RTOS integrated with other platform SW components	All K3 derivatives	Source code	Open Source	Free	link

NOTE: 3-month free of charge evaluation available for all SW mentioned above

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Application SW	Automotive Math & Motor Control Library Set	Precompiled software library containing building blocks for a wide range of motor control applications.	All K3 derivatives	Binary & Source Code	QM	License Model	link
	ISELED driver	SW driver for smart LED lighting solution, built on top of RTD. Delivered in binary format.	All K3 derivatives	Binary Code	ISO26262	Purchase by specific silicon part number	
	BMS (Battery Management System) SW	Autosar 4.4 BCC+PHY Complex Device Drivers SW Safety Library exercising BCC safety mechanisms and supporting system safety goals	All K3 derivatives	Binary & Source Code	ISO26262	Complex device driver – price included in silicon price Safety Lib -license model	link
	AVB (Audio Video Bridging) Stack	Including gPTP stack, audio framework and Ethernet streaming	All K3 derivatives	Binary & Source Code	QM	NRE	Only available per demand
Tools	S32 Design Studio for S32 Platform	Integrated Development Environment (IDE) integrates S32K RTD and ecosystem support.	All K3 derivatives	N/A	Compliant with CMMI and IATF16949 standards	Free	link
	S32 Config Tools	Pins Clocks Peripheral DCD tools Support for both AUTOSAR and non-AUTOSAR configuration and generation	All K3 derivatives				link
	FreeMASTER + MCAT	Debugger for real-time applications MCAT (Motor Control Application Tuning Tool) plugin to FreeMASTER	All K3 derivatives				link
	MBDT (Model Based Design Toolbox)	Simulink™ Toolbox for configuring and generating software to execute motor control/BMS/Safety algorithms on S32K.	All K3 derivatives				link

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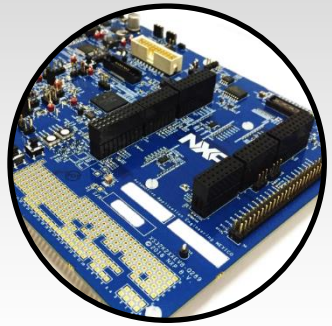

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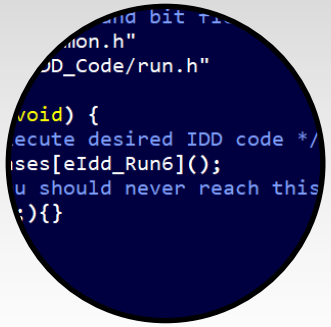

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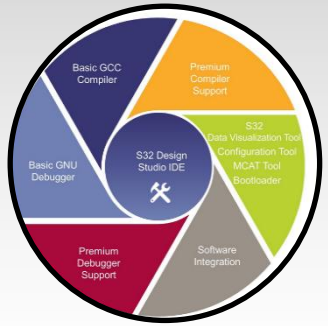

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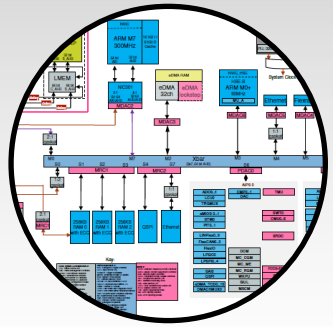

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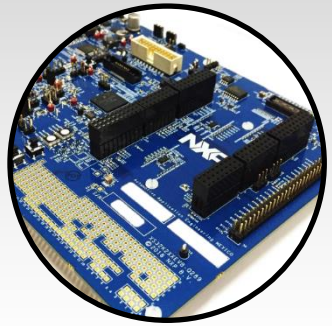

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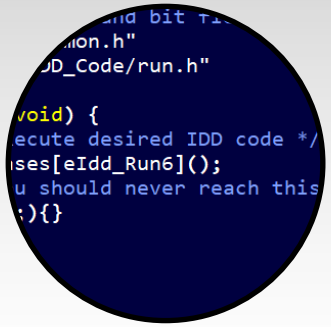

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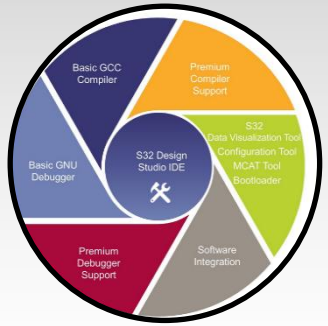

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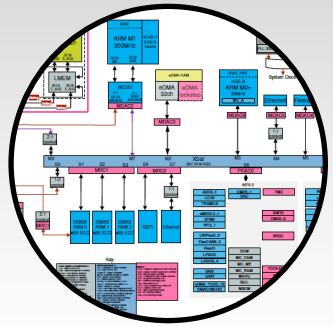

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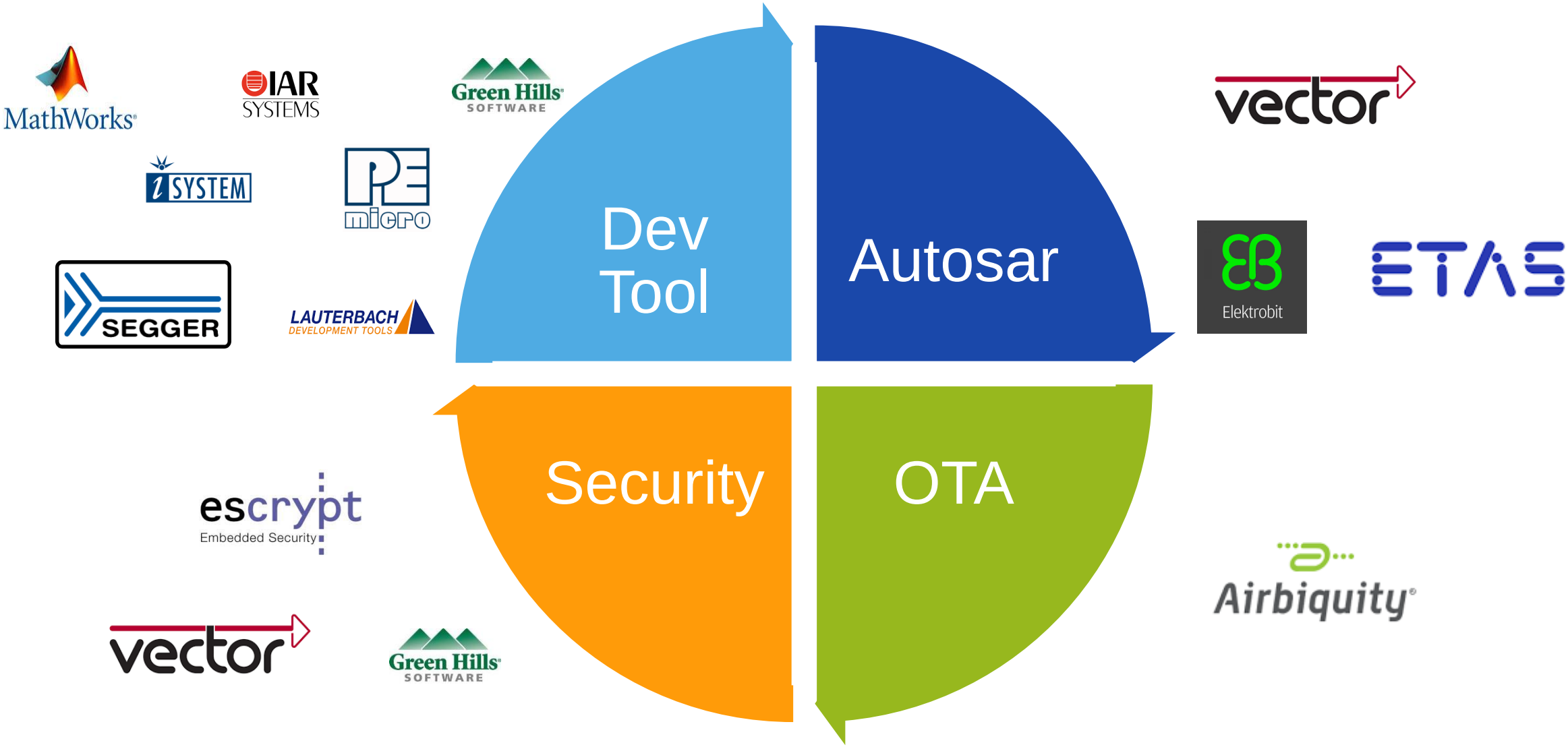
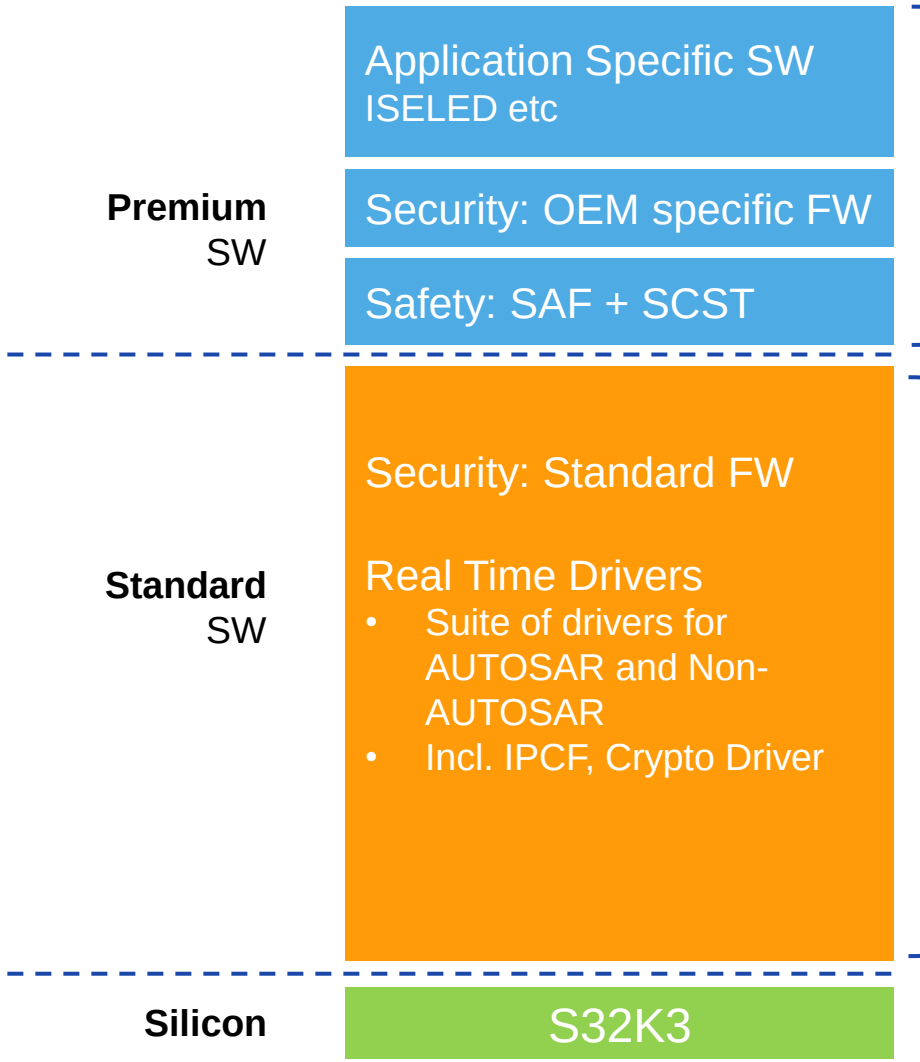
BROAD PARTNER CHOICES FOR S32K3



TOOLS PARTNER PORTFOLIO

S32K3 SOFTWARE OFFERING : STANDARD AND PREMIUM



Premium offering:

- Application Specific SW: ISELED etc
  - Price adder on top of silicon price for selected PN
- Premium Security: OEM specific firmware
  - Price adder on top of silicon price for selected PN
- Premium Safety: S32 Safety Software Framework (SAF) + Structural Core Self Test (SCST)
  - One-time license fee (for combined SAF+SCST)

Standard offering:

- Included in silicon price

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