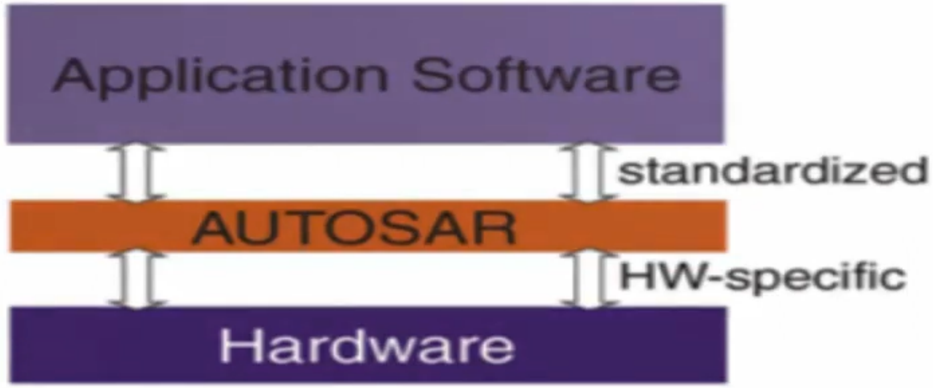
CLASSIC VS ADAPTIVE

AUTOSAR BASICS

Hardware/Software Interface

- Software is highly hardware dependent
- Large efforts for relocating functions



- Software is largely independent of the chosen microcontroller
- Simplified development process
- Reuse of software

Types of Autosar

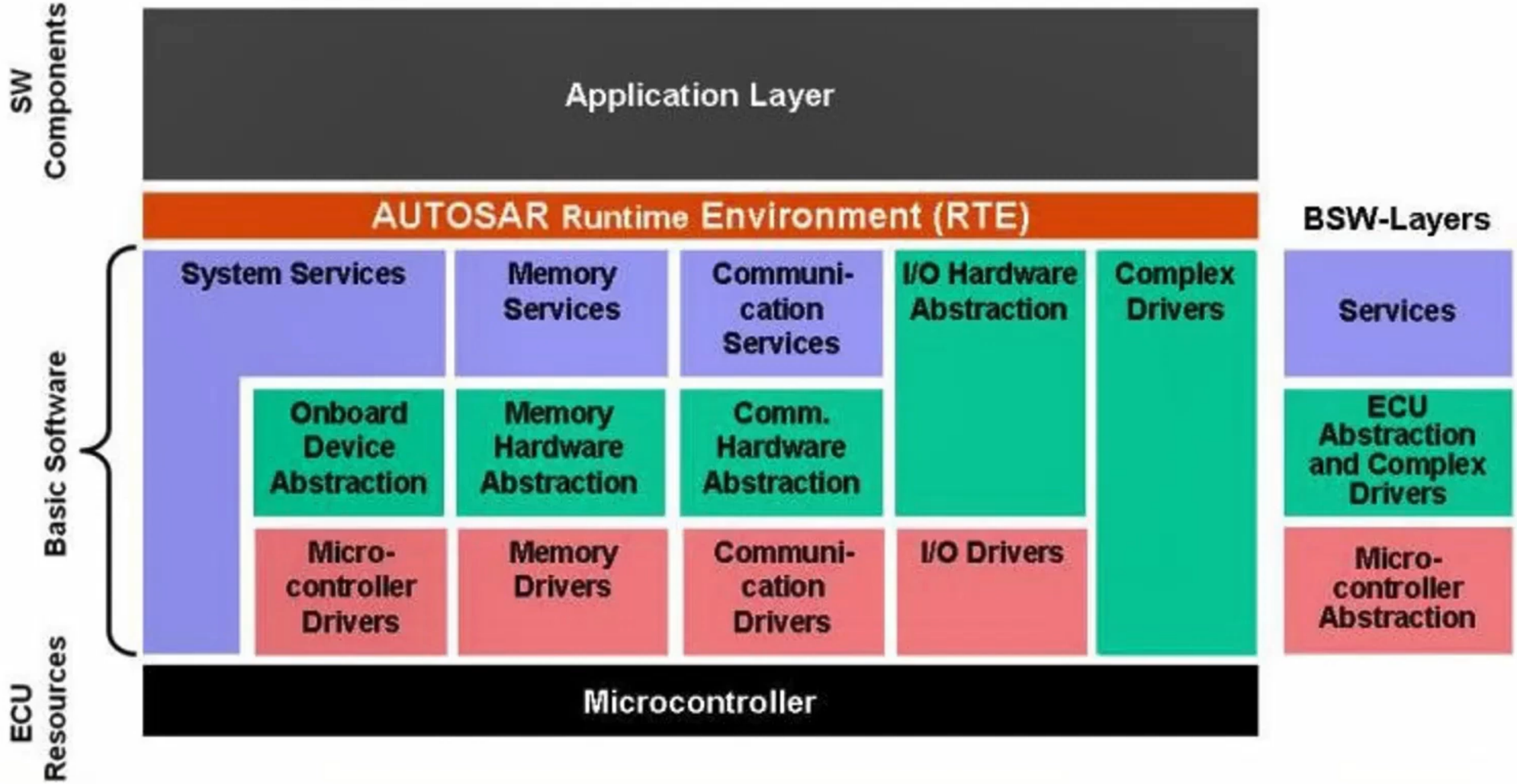
The AUTOSAR standard defines variations of the software architecture called AUTOSAR platforms

1. Classic Platform (CP)
2. Adaptive Platform (AP)

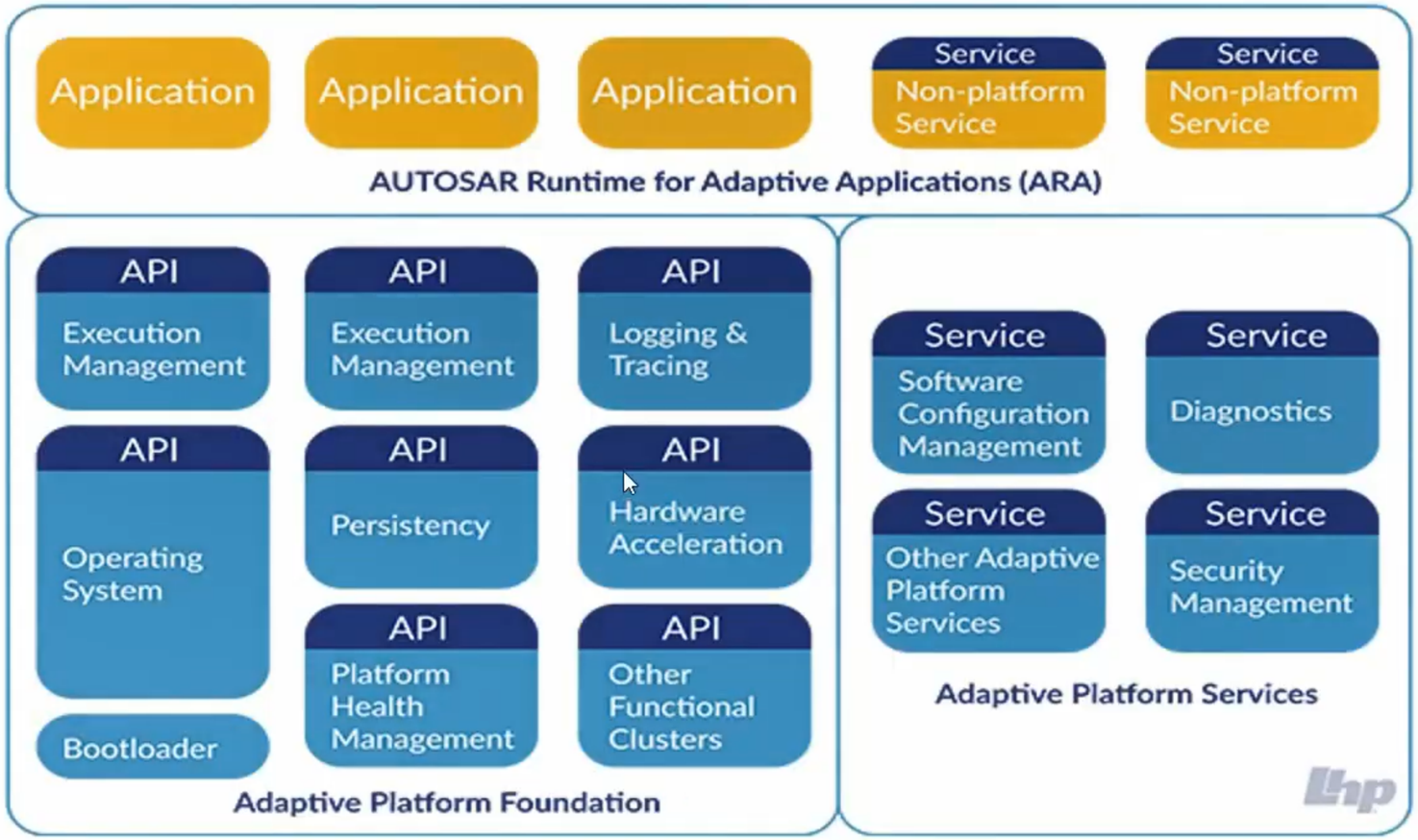
KEYWORDS

- BSW – Base Software
- RTE – Run Time Environment
- MCAL – Microcontroller Abstraction Layer
- SWC – Software Component
- CDD – Complex Device Driver
- VFB – Virtual Functional Bus
- SOA – Service Oriented Architecture
- ARA – Autosar Runtime Adaptive Environment

Classic Autosar



Adaptive Autosar



EXISTING VS CLASSIC VS ADAPTIVE

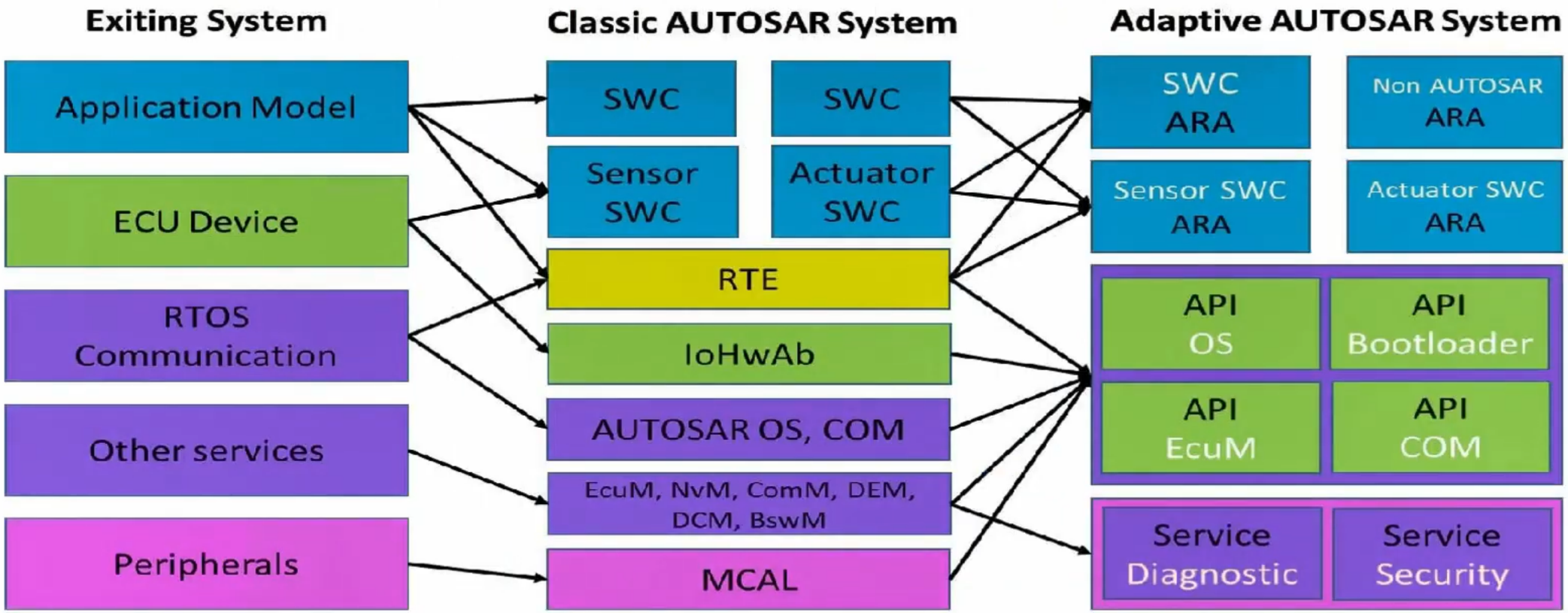


Figure 1

Classic vs Adaptive

FEATURE	CLASSIC	ADAPTIVE
Use Case	Embedded System	High Performance Computing
Operating System	OSEK	POSIX
Programming Language	C	C++
Communication	Statically Configured Signal Based Communication(CAN,FlexRay)	Dynamically Configured Service Oriented Communication(Some/IP)
Code Execution	Execution of Code Directly from ROM	Application is loaded from Persistent Memory into RAM
Dynamic Updating	Not Available	Run time Configuration Change
Application Interface	Use RTE	Use ARA
Real Time Requirements	Hard	Soft

TAKE AWAY

- Classic Platform will be used for Engine Control , Braking Systems, Airbag Control Unit etc.
- Adaptive Platform will be used for Over the Air Updates , Sensor fusion Data Processing , dynamic choosing of Application packages over run time of vehicle etc.