

# Multicore Software Development Kit (MCSDK) Training

## Introduction to the MCSDK

# Agenda

- MCSDK Overview
- Software Architecture
- Evaluation Module (EVM)
- MCSDK Benefits

# MCSDK Overview

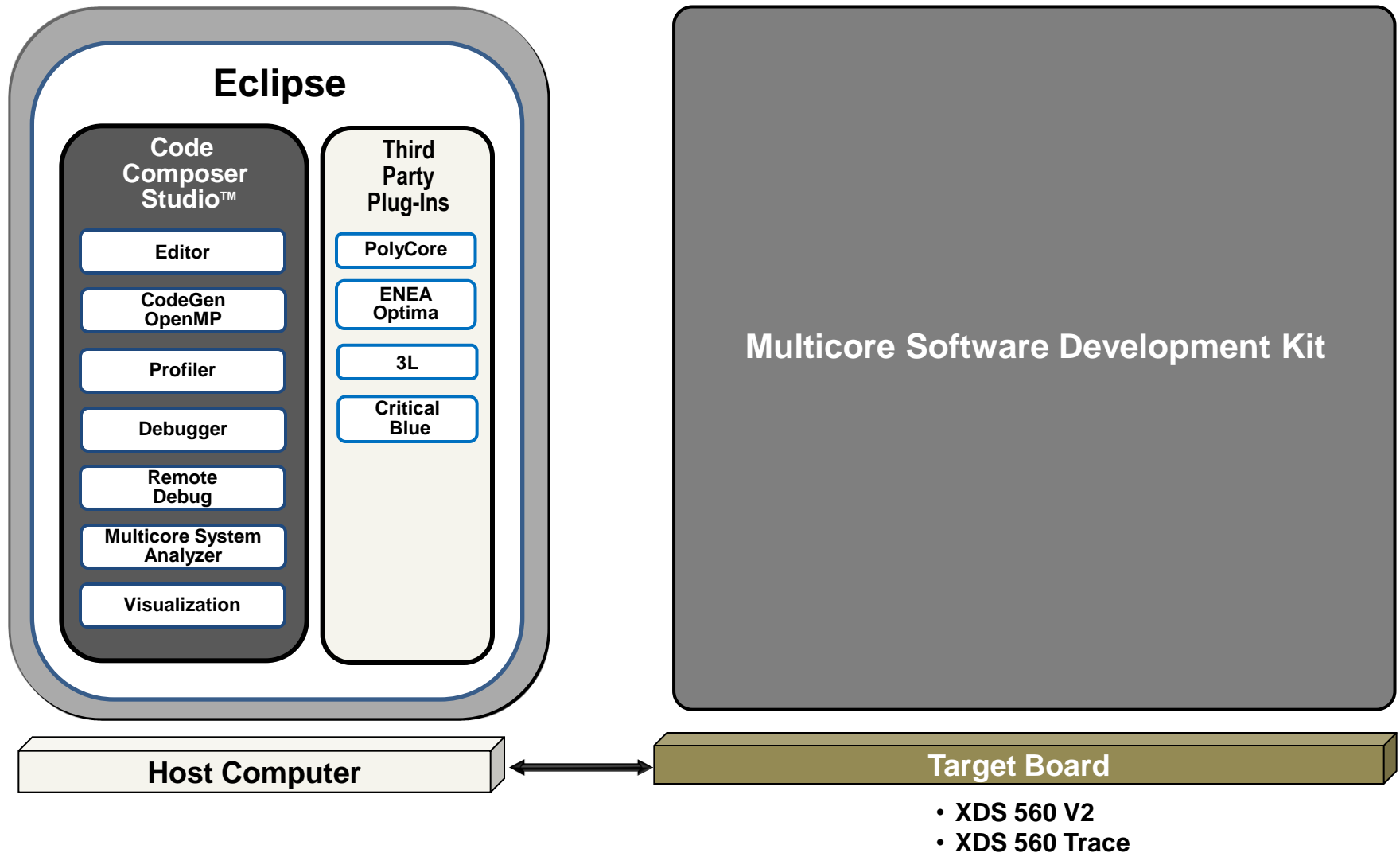
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# What is MCSDK?

- The Multicore Software Development Kit (MCSDK) provides the **core foundational building blocks** for customers to **quickly start developing embedded applications** on TI high performance multicore DSPs.
  - Uses the SYS/BIOS or Linux **real-time operating system**
  - Accelerates customer time to market by focusing on **ease of use** and **performance**
  - Provides **multicore programming** methodologies
- **Available for free** on the TI website bundled in one installer, all the software in the MCSDK is in **source form** along with pre-built libraries

# Software Development Ecosystem

## Multicore Performance, Single-core Simplicity



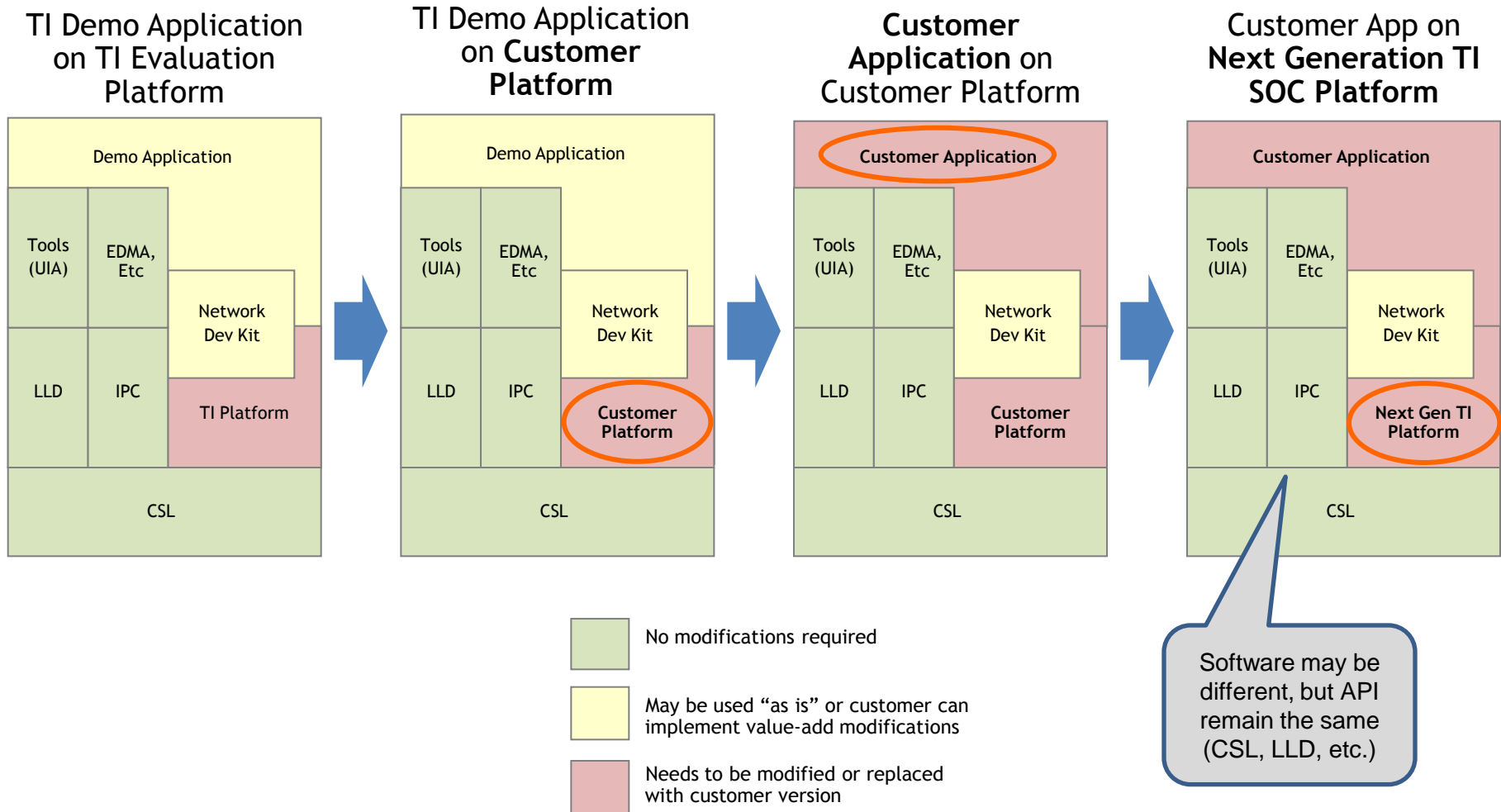
# MCSDK Variants

Name	Release	DSP	ARM	OS	Notes
<b>BIOS-</b> <b>MCSDK</b>	1.x, 2.x	x	NA	SYS/BIOS	DSP-only SOC running SYS/BIOS real-time operating system
<b>Linux-</b> <b>MCSDK</b>	1.x, 2.x	x	NA	Linux on DSP	DSP-only SOC running Linux real-time operating system

# Software Architecture

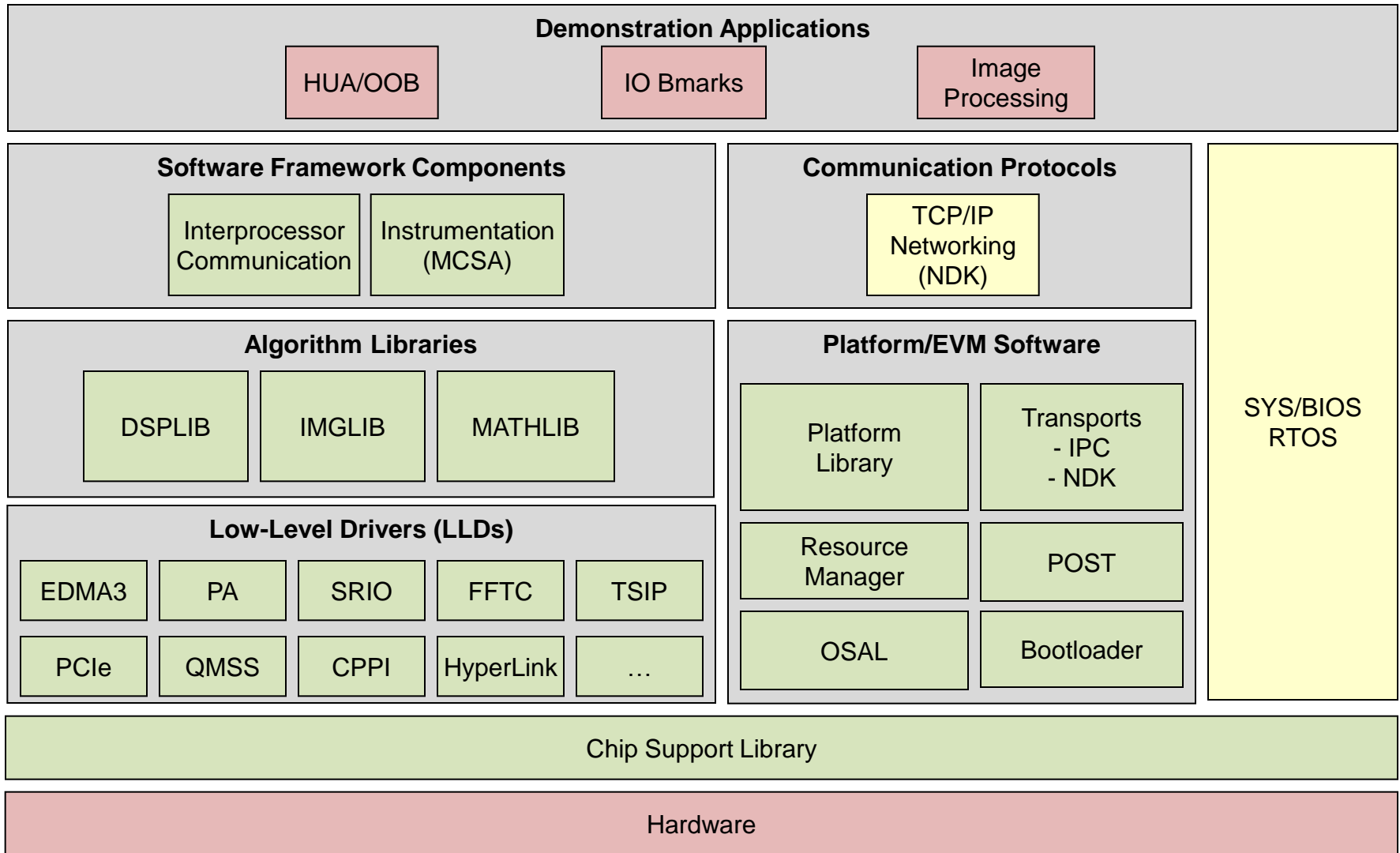
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# Migrating Development Platform

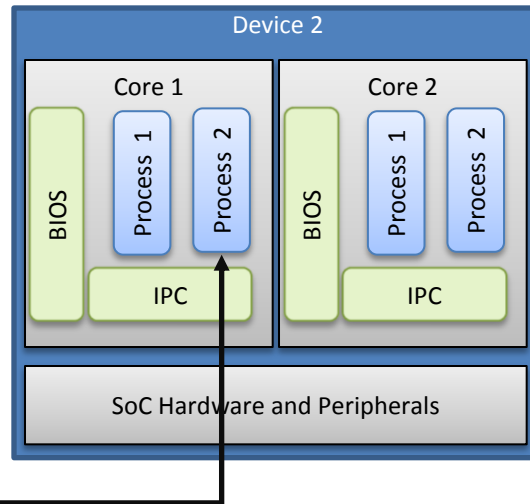
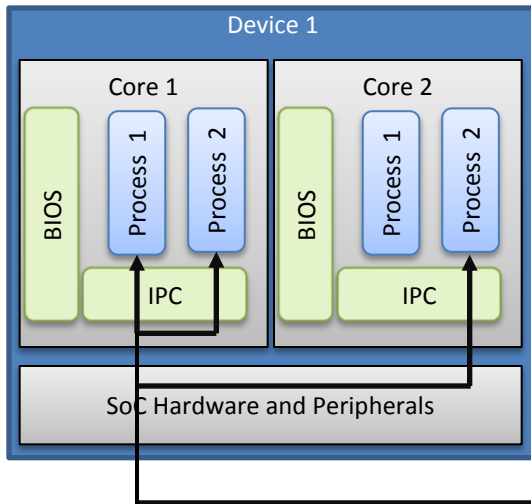




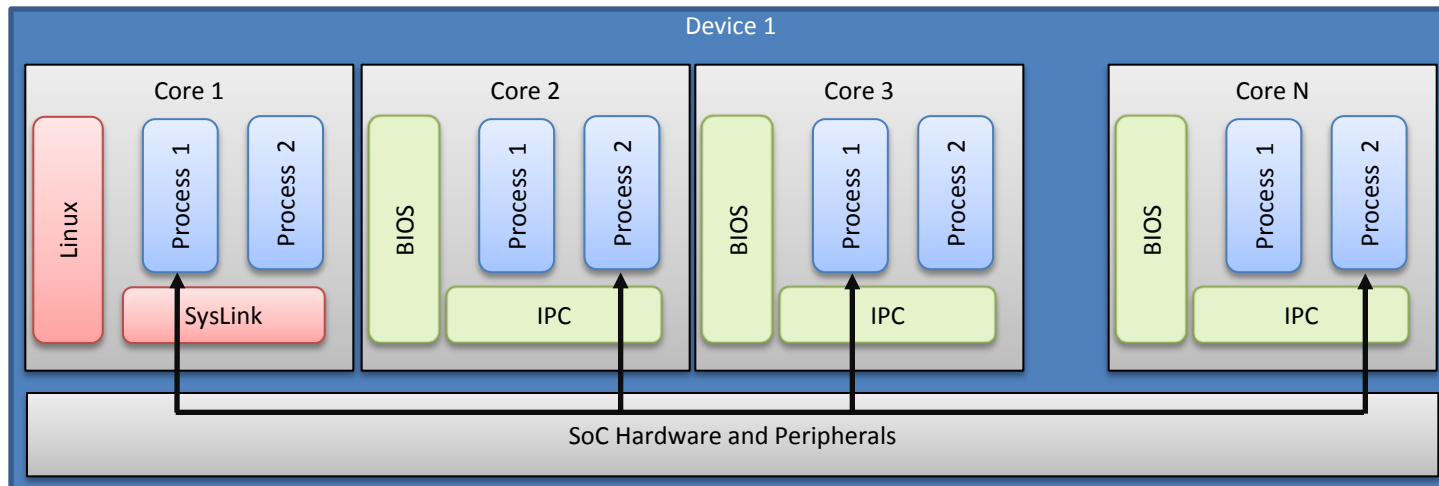
# BIOS-MCSDK Software



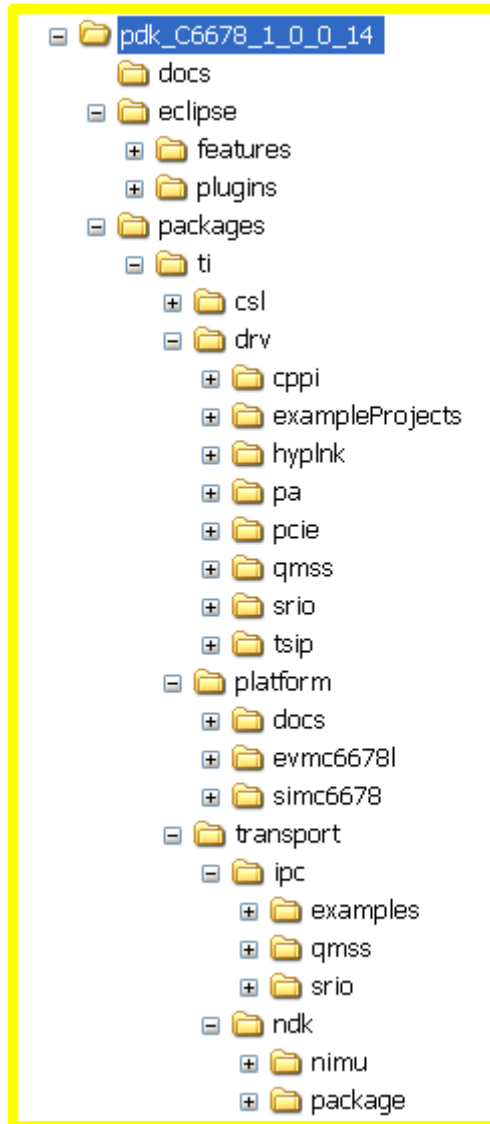
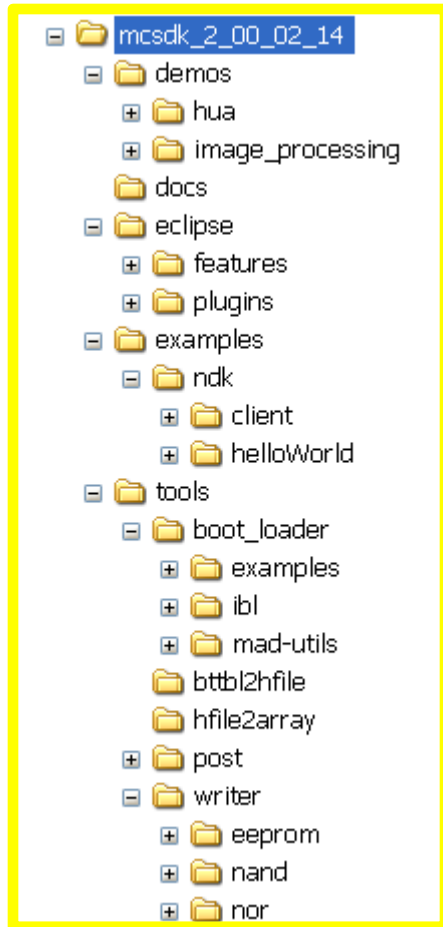
# Interprocessor Communication (IPC)



IPC Transports	Task to Task	Core to Core	Device to Device
Shared Memory	x	x	
Navigator/QMSS	x	x	
SRIO	x	x	x
PCIe	x	x	x
HyperLink	x	x	x



# Packaging (BIOS-MCSDK)



# Evaluation Module (EVM)

- MCSDK Overview
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# Linux/BIOS MCSDK C66x Lite EVM Details

## DVD Contents

- **Factory default recovery**
  - EEPROM: POST, IBL
  - NOR: BIOS MCSDK Demo
  - NAND: Linux MCSDK Demo
  - EEPROM/Flash writers
- **CCS 5.0**
  - IDE
  - C667x EVM GEL/XML files
- **BIOS MCSDK 2.0**
  - Source/binary packages
- **Linux MCSDK 2.0**
  - Source/binary packages

## EVM Flash Contents

**EEPROM**  
128 KB

POST

IBL

**NOR**  
16 MB

BIOS MCSDK  
"Out of Box" Demo

**NAND**  
64 MB

Linux MCSDK  
Demo

## Online Collateral

### TMS320C667x processor website

<http://focus.ti.com/docs/prod/folders/print/tms320c6678.html>

<http://focus.ti.com/docs/prod/folders/print/tms320c6670.html>

### MCSDK website for updates

<http://focus.ti.com/docs/toolsw/folders/print/bioslinuxmcsdk.html>

### CCS v5

[http://processors.wiki.ti.com/index.php/Category:Code\\_Composer\\_Studio\\_v5](http://processors.wiki.ti.com/index.php/Category:Code_Composer_Studio_v5)

### Developer's website

Linux: <http://linux-c6x.org/>

BIOS: [http://processors.wiki.ti.com/index.php/BIOS\\_MCSDK\\_2.0\\_User\\_Guide](http://processors.wiki.ti.com/index.php/BIOS_MCSDK_2.0_User_Guide)

# MCSDK Benefits

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# MCSDK Benefits

- Faster time to market for end-customer products
- Stable foundation of optimized software components
- Multicore programming methodologies
- Free, full source code
- Easy-to-use, hardened API
- Modular software architecture to simplify migration to future SOC
- Built-in demonstrations showcasing SOC strengths and multicore software framework
- Positive customer out-of-box experience
- Software ecosystem with third-party tools
- Documentation: Online wiki
- Support: E2E forum

# For More Information

## Download MCSDK software:

<http://focus.ti.com/docs/toolsw/folders/print/bioslinuxmcsdk.html>

The screenshot shows the TI MCSDK product page. It includes a navigation bar with links like Products, Applications, Design Support, and Sample & Buy. The main content area features a table with download links for different processor families (C64x, C647x, C645x) and their respective development kits. A large orange arrow points from this page towards the 'Download Software' text.

Processor	TI MCSDK	Status	Price (USD)
TI MCSDK for C64x, C647x and C645x	Red Software	ACTIVE	Free
TI MCSDK for C64x, C647x and C645x	Red Software	ACTIVE	Free
TI MCSDK for C64x, C647x and C645x	Red Software	ACTIVE	Free

Download  
Software

## Refer to the MCSDK User's Guide:

[http://processors.wiki.ti.com/index.php/BIOS MCSDK 2.0 User Guide](http://processors.wiki.ti.com/index.php/BIOS_MCSDK_2.0_User_Guide)

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User's  
Guide

For questions regarding topics covered in this training, visit the following e2e support forums:

[http://e2e.ti.com/support/dsp/c6000\\_multi-core\\_dsps/f/639.aspx](http://e2e.ti.com/support/dsp/c6000_multi-core_dsps/f/639.aspx)

The screenshot shows the TI E2E Community forum page for C6000 Multicore DSP. It includes a navigation bar with links like Products, Applications, Design Support, and Sample & Buy. The main content area features a table with download links for different processor families (C64x, C647x, C645x) and their respective development kits. A large orange arrow points from this page towards the 'Software Forums' text.

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TI MCSDK for C64x, C647x and C645x	Red Software	ACTIVE	Free

Software  
Forums

<http://e2e.ti.com/support/embedded/f/355.aspx>

The screenshot shows the TI E2E Community forum page for Embedded Software. It includes a navigation bar with links like Products, Applications, Design Support, and Sample & Buy. The main content area features a table with download links for different processor families (C64x, C647x, C645x) and their respective development kits. A large orange arrow points from this page towards the 'Software Forums' text.

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TI MCSDK for C64x, C647x and C645x	Red Software	ACTIVE	Free
TI MCSDK for C64x, C647x and C645x	Red Software	ACTIVE	Free