

Chapter 15

ARM –

Architecture, Programming

and

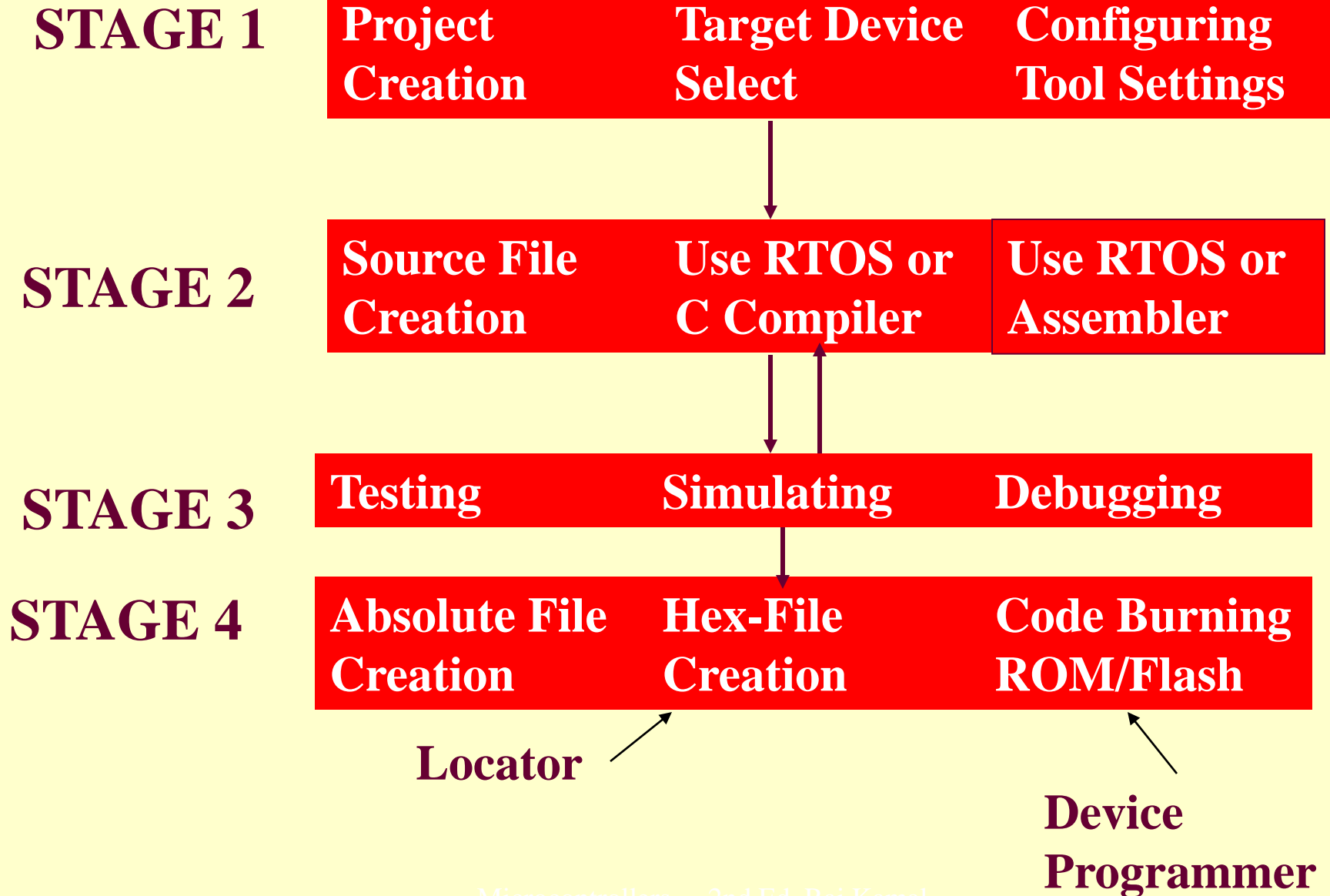
Development Tools

Lesson 08

ARM MICROCONTROLLER System Development Tools

Project Creation/System Development

System Development Procedure



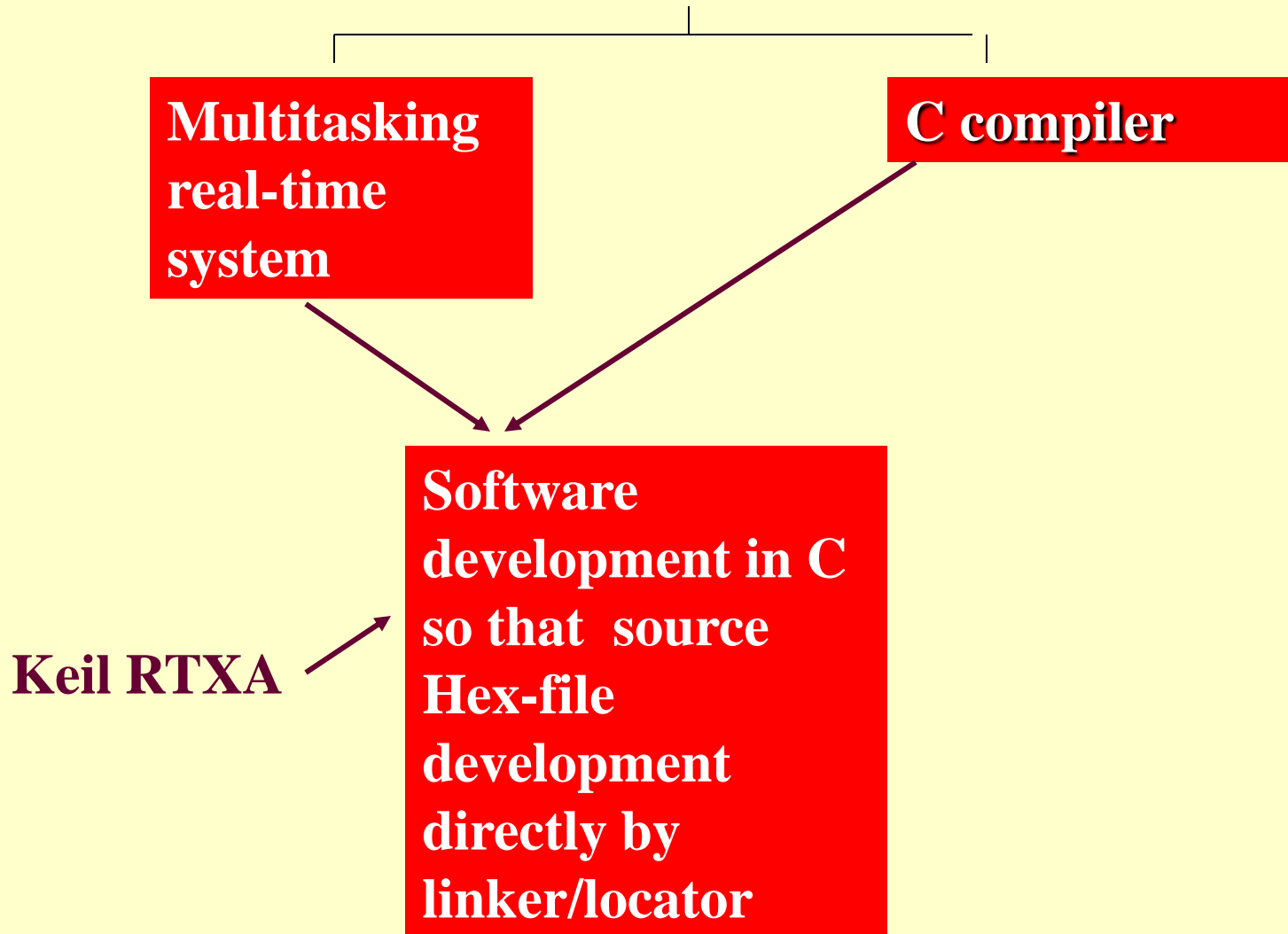
DARM from Keil

A development tool support example

- ST Microelectronics ST30, STR710 and STR720,
- Atmel AT91x,
- Philips LPC2104, LPC2105, LPC2106, and NetSilicon NS7520 and NET+50 in the IDE.

RTOS

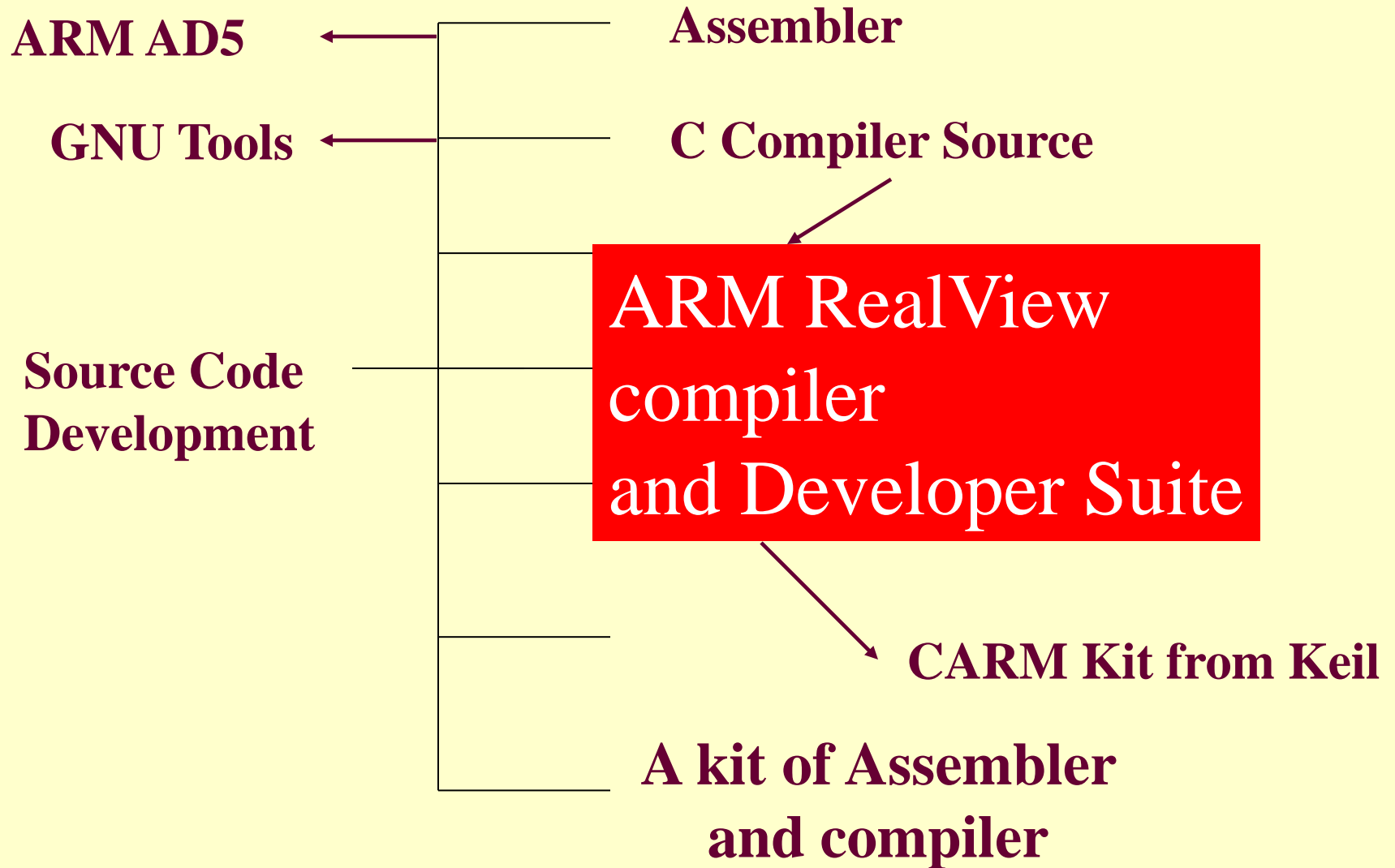
RTOS functions integrate



Source Code Development

Assembler and Compiler Options

Industry standard for Assembler and compiler



Integrated Development Environment

IDE Features

Control structures for loops and decision blocks

Assembler

C Compiler Source

Linking

Integrated Development

Library

Library Manager

Linker/Locator

Specific target hardware support

Integrated Development Environment (IDE)

- Include flash programming and target debugging

Integrated Development Environment (IDE)

- Accurate peripheral simulation and timing.

Integrated Development Environment (IDE)

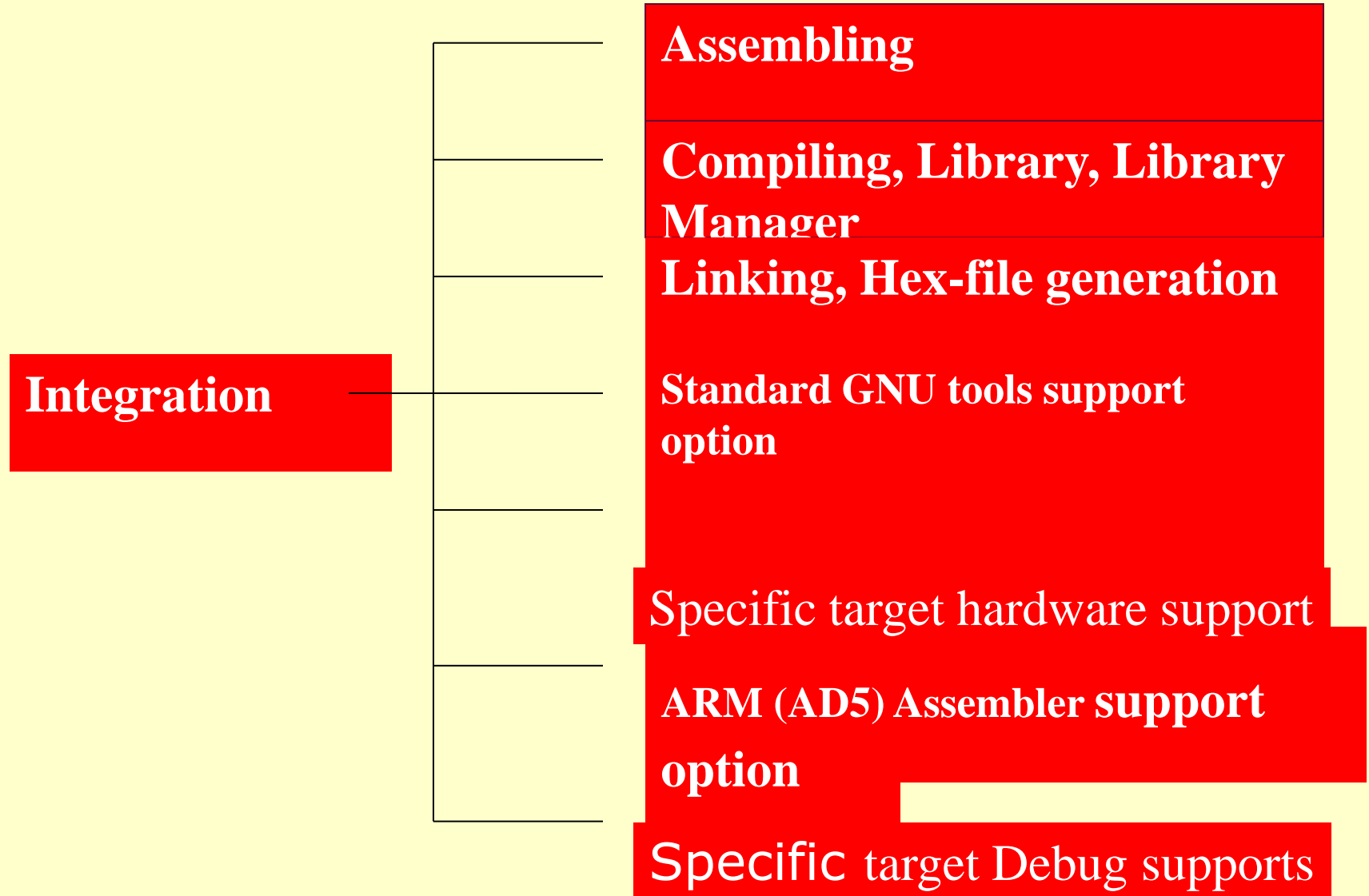
- support to standard device databases

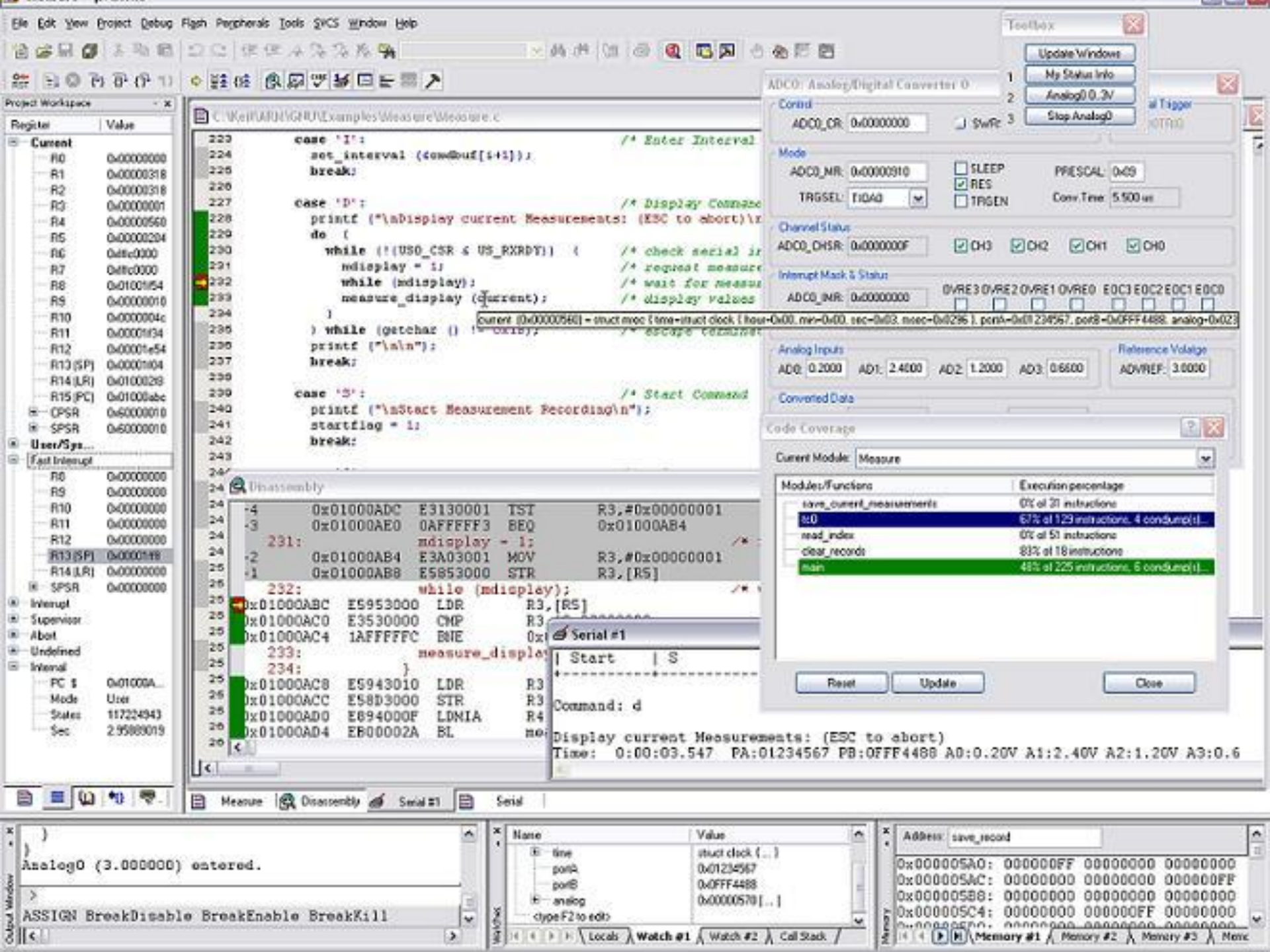
Keil μ Vision IDE

Development complete set of tools (IDE)

- Project manager
- Editor and make features (means integrating assembling, compiling and linking for the embedded application)

Keil μ Vision IDE





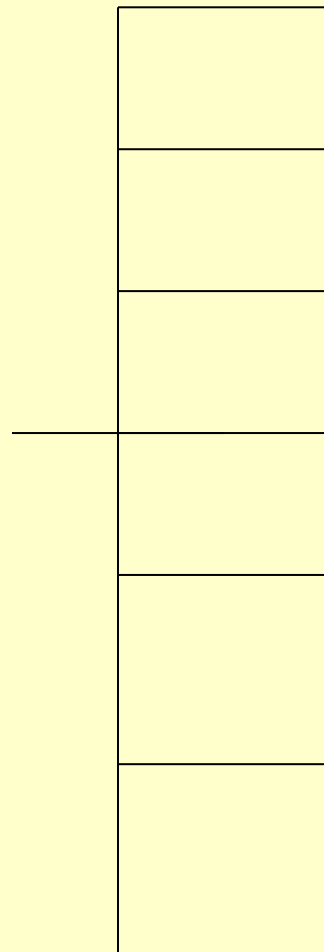
Hex-file development

For programming a device for the application using assembly language program developed with use of macros and control structures

ARM RealView® developer kit

ARM RealView® developer kit

**ARM
RealView®**



Targeted compiler

Targeted GUI debugger

Reduced system memory cost

Smaller code size

**Increased system
performance/mW**

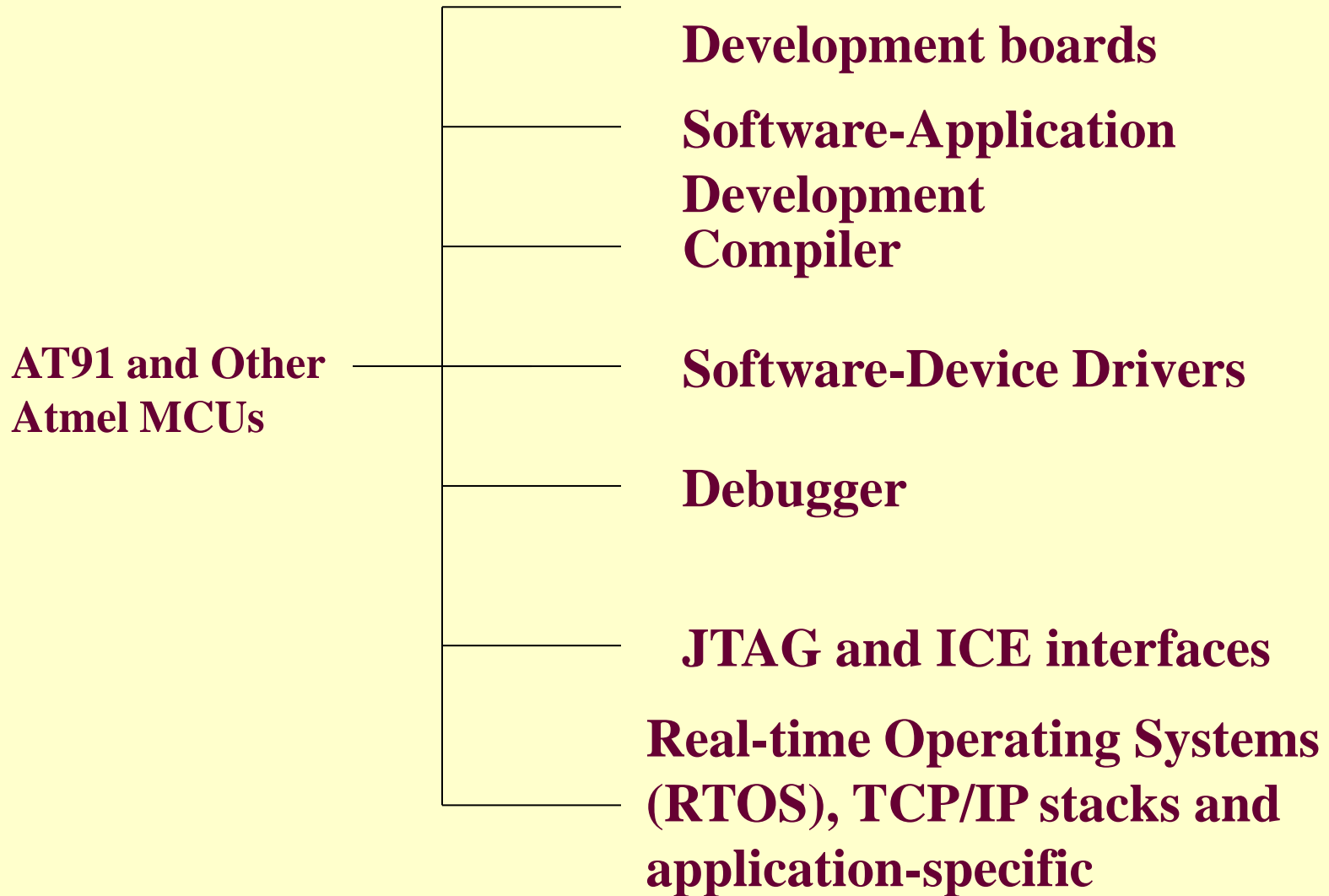
JTAG run control device

ST specific

ICE micro edition

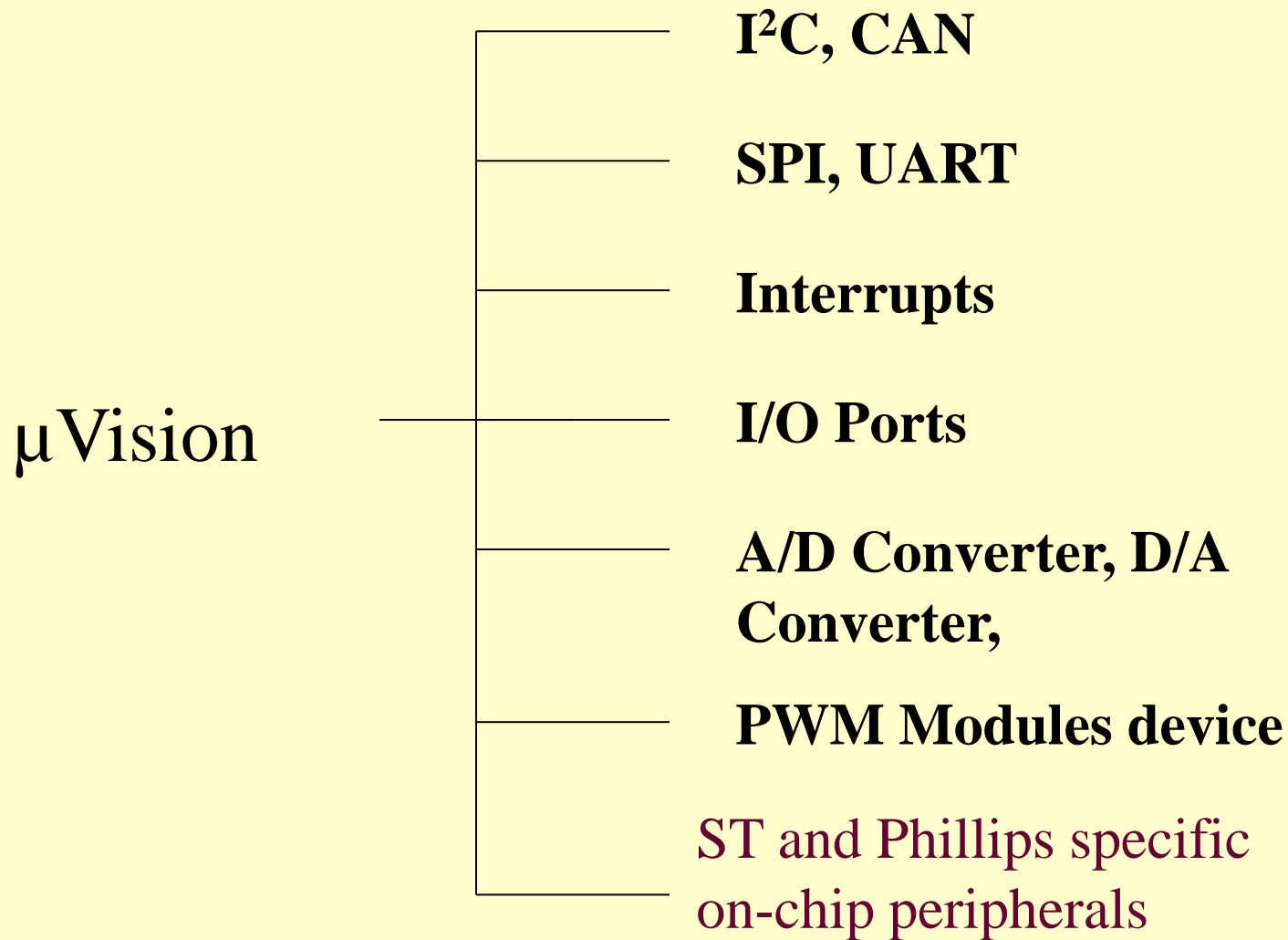
Atmel development tools

Atmel development tools



Keil μ Vision IDE debugger

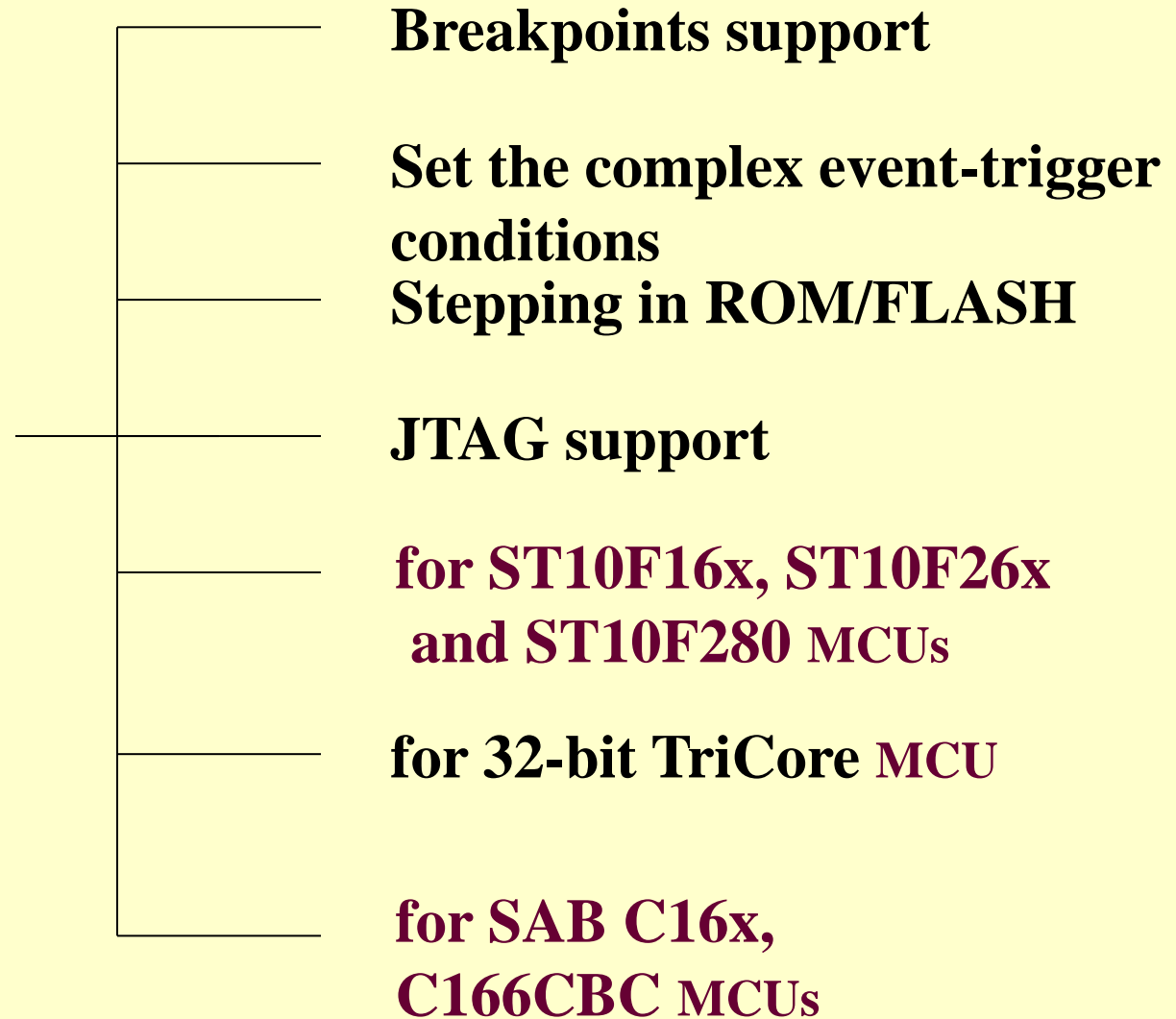
Keil μ Vision debugger Accurate Simulation



UDE (Universal Debug Engine)

UDE Tool

UDE



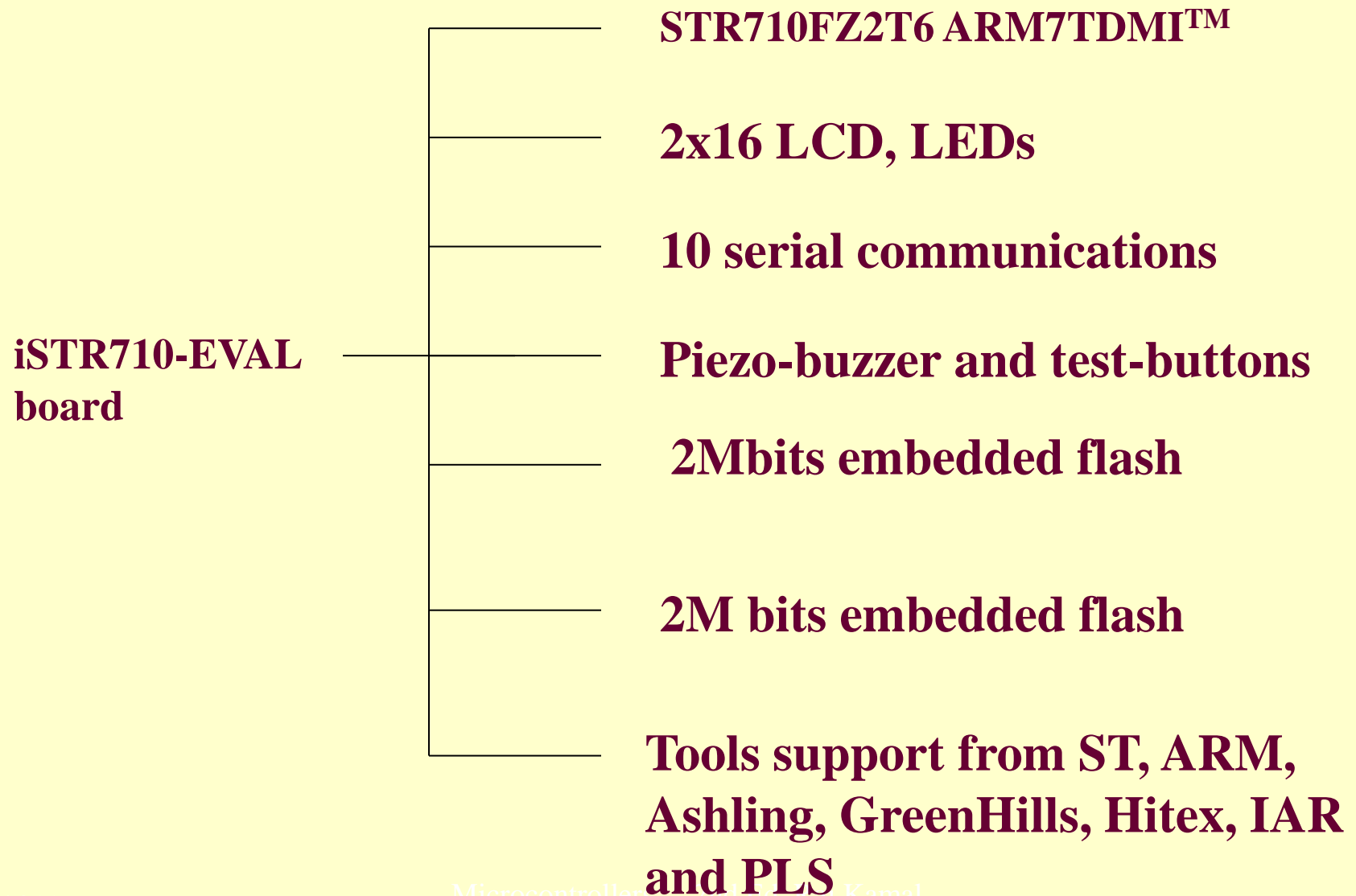
Evaluation/Demonstration Board

ST Evaluation board



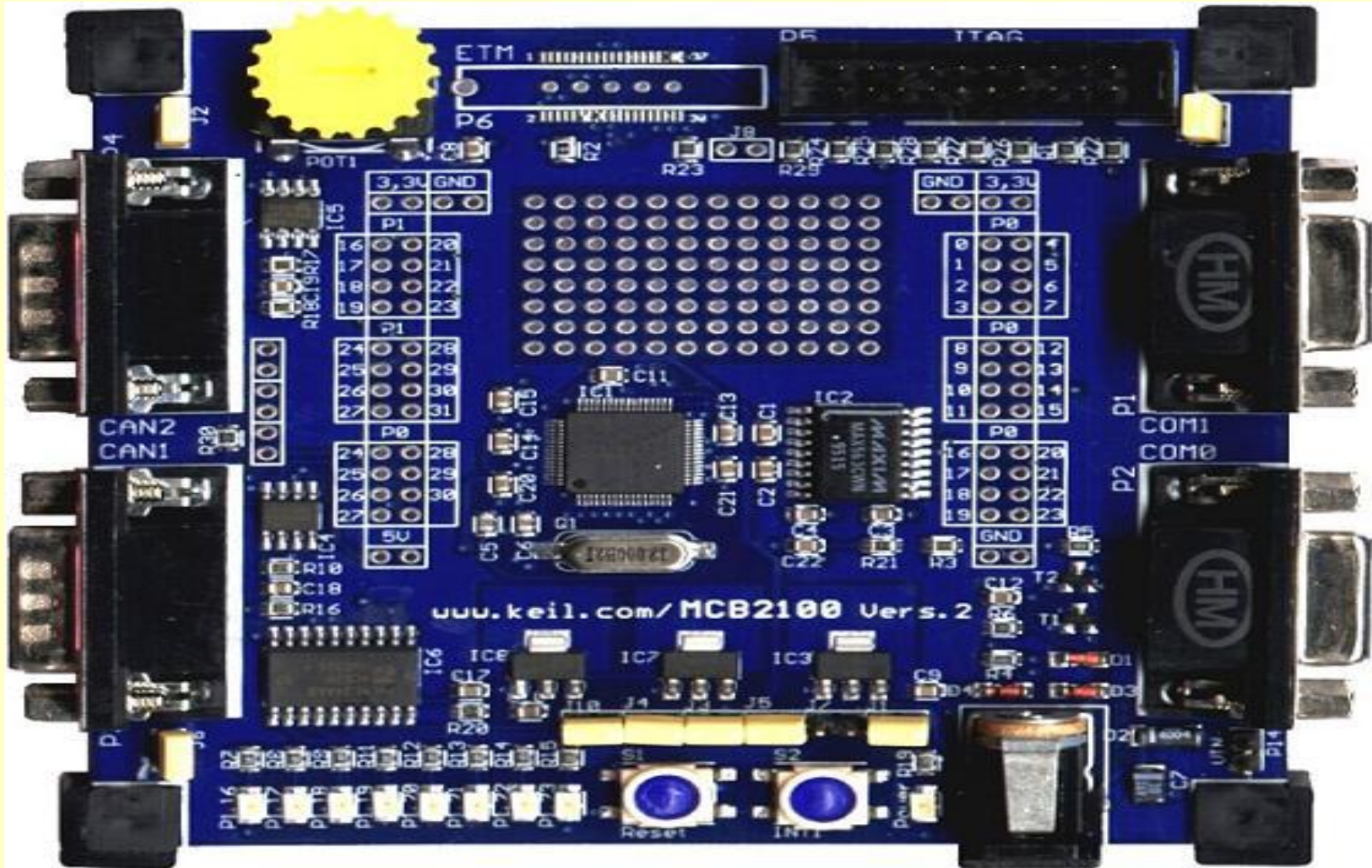
ARM Powered STR710 ARM MCU System Development Board

Complete development platform for the STR71x flash MCUs for development target



Phillips LPC 21xx development board

Keil DemoBoard for LPC21xx ARM MCUs



Summary

We learnt

Development tools needed

- **RTOS, Assembler, C Compiler, IDE, Target debugging tool, Linker/Locator, Monitor and PROM programmer**

We learnt

- Need of IDE device databases, on-line help, automatic correction help and interactive feature using the dialogs

We learnt

- Demo/Evaluation Boards need
- Accurate Device Debuggers need

End of Lesson 08 on
ARM MICROCONTROLLER
System Development Tools