CEC Continuing Education Center

DesignNews

How to Select the Right Microcontrollers for an Application

DAY 5 : Microcontroller Selection Best Practices

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Webinar Logistics

- Turn on your system sound to hear the streaming presentation.
- If you have technical problems, click “Help” or submit a question asking for assistance.
- Participate in ‘Group Chat’ by maximizing the chat widget in your dock.
- Submit questions for the lecturer using the Q&A widget. They will follow-up after the lecture portion concludes.

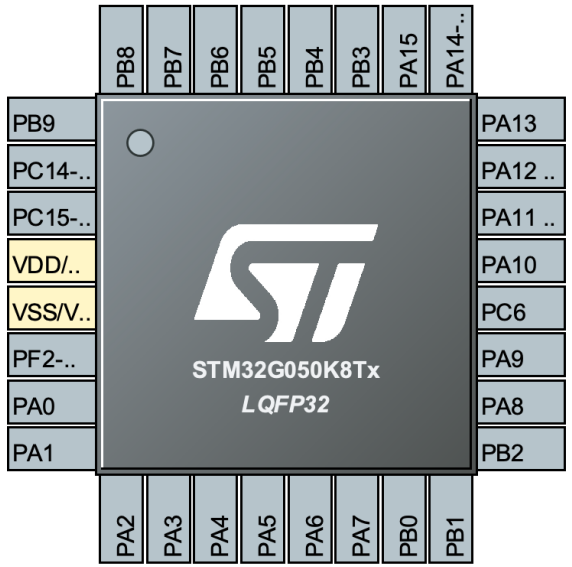
Course Sessions

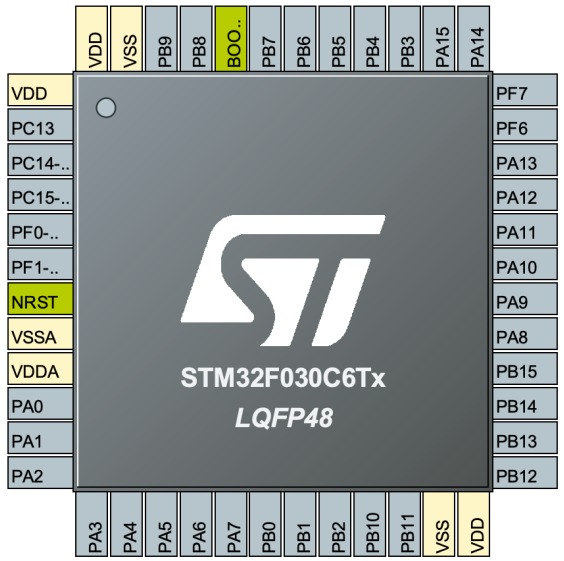
- The Microcontroller Industry Today
- MCU Selection Criteria
- The Modern MCU Selection Process
- Microcontroller Selection Use Cases
- **Microcontroller Selection Best Practices**

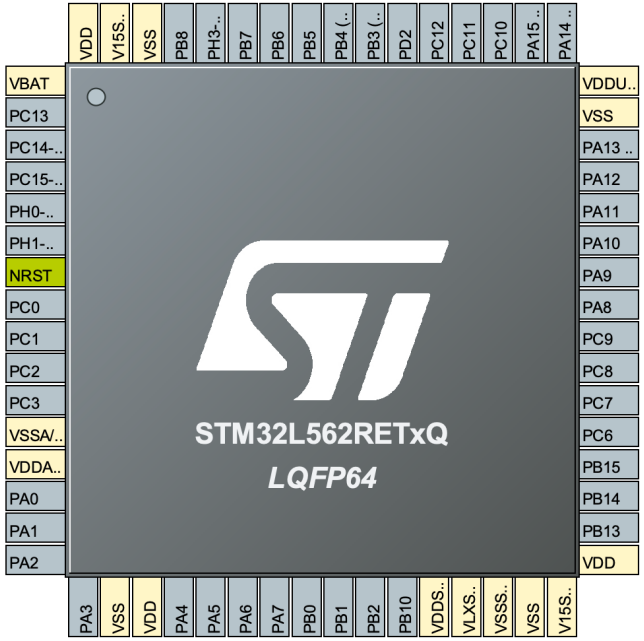
1 Hardware Best Practices

Things to look for in hardware . . .

Select microcontrollers that have pin compatible family members







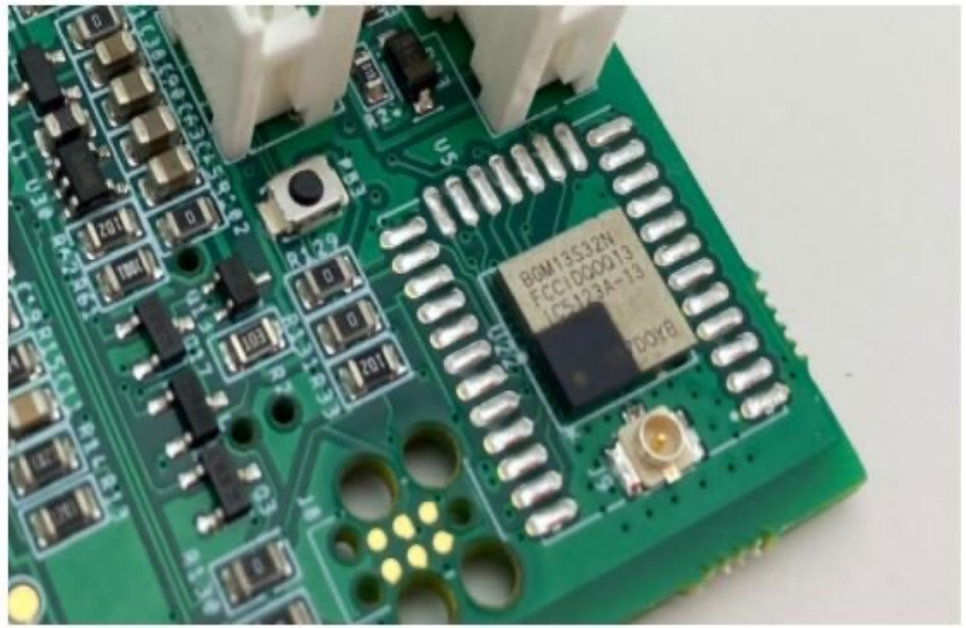
Evaluate the lead times and supply chain carefully!

Mfr Part #	Quantity Available
STM32L475RET6TR IC MCU 32BIT 512KB FLASH 64LQFP *STMicroelectronics*	0 In Stock
STM32L475RCT3 IC MCU 32BIT 256KB FLASH 64LQFP *STMicroelectronics*	0 In Stock
STM32L475RGT6 IC MCU 32BIT 1MB FLASH 64LQFP *STMicroelectronics*	0 In Stock

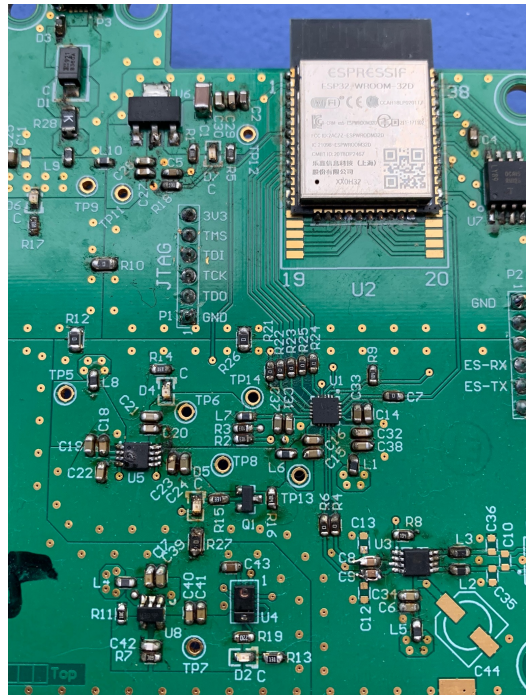
STM32L010F4P6 IC MCU 32BIT 16KB FLASH 20TSSOP *STMicroelectronics*	500 In Stock
STM32L010C6T6 IC MCU 32BIT 32KB FLASH 48LQFP *STMicroelectronics*	30 In Stock
STM32L151QEH6 IC MCU 32BIT 512KB FLSH 132UFBGA *STMicroelectronics*	30 In Stock
STM32L011E4Y6TR IC MCU 32BIT 16KB FLASH 25WLCSP *STMicroelectronics*	9,480 In Stock

Always have a back-up!

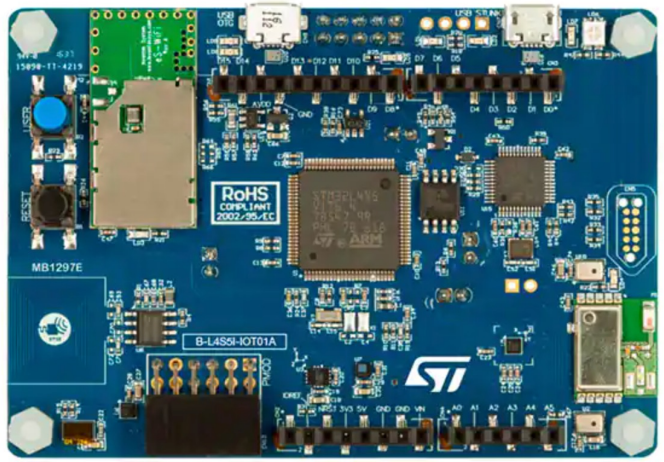
Dual Footprint

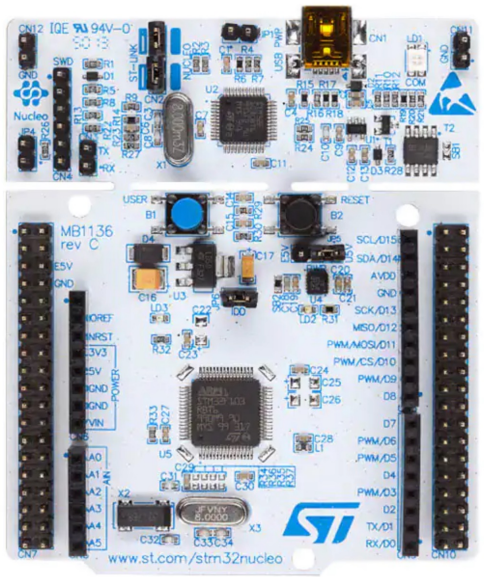


Extra Space for fast Turn around

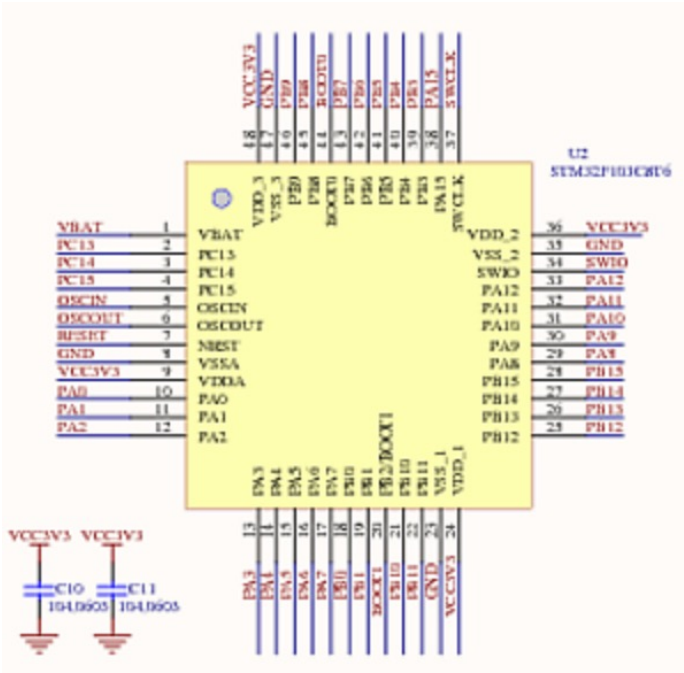


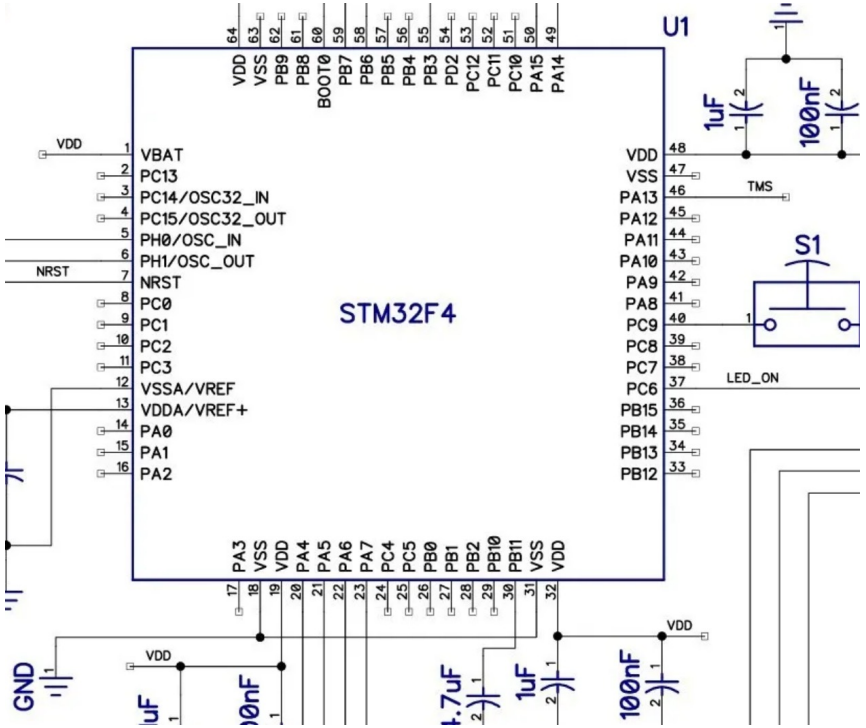
Use development boards to flesh out high risk areas of the design early and verify selection.





Leave a few spare pins in your design for future functionality to minimize rework.



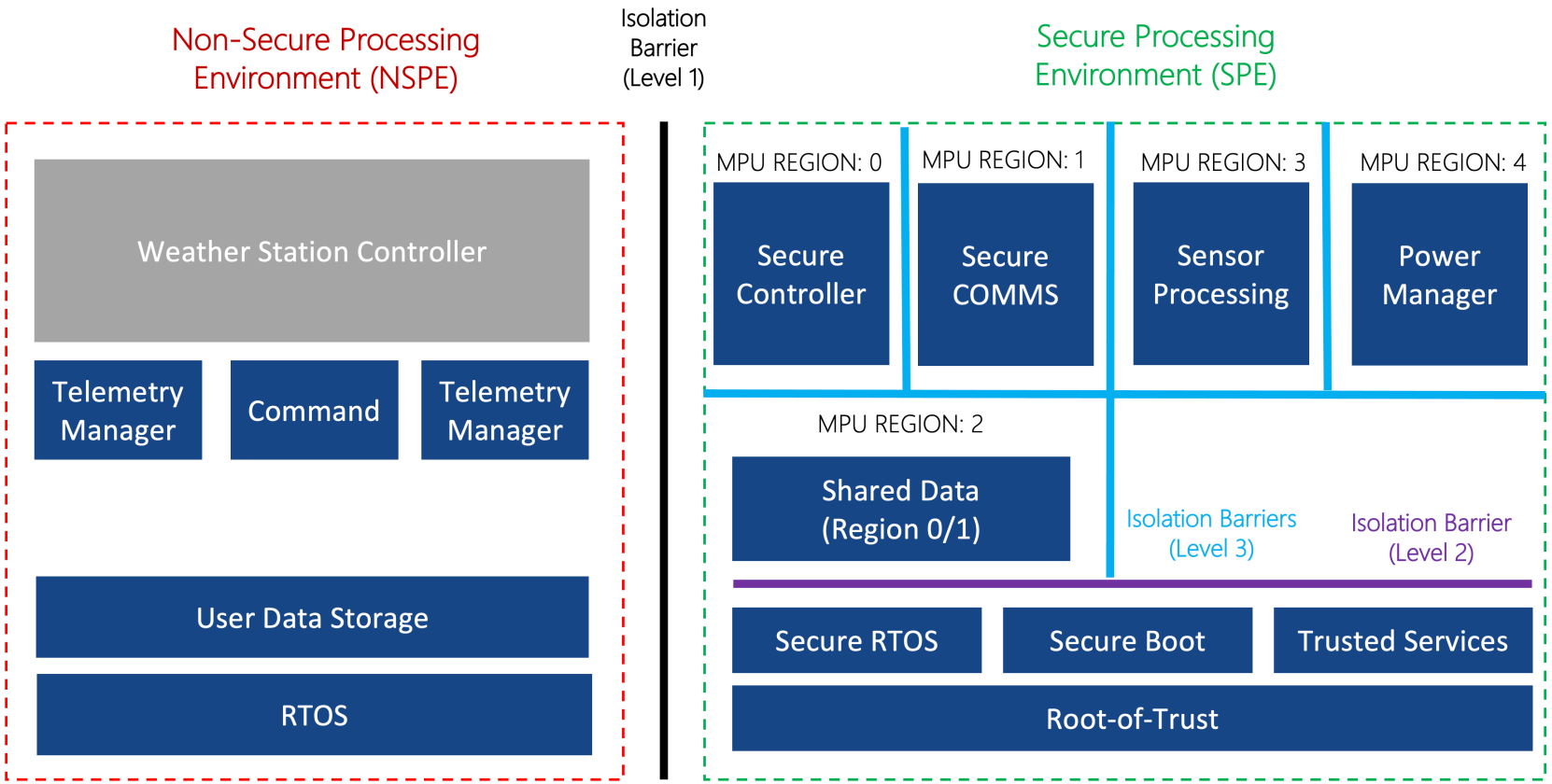


Which best practices do you think is the most important?

- Select microcontrollers that have pin compatible family members
- Evaluate the lead times and supply chain carefully!
- Always have a back-up!
- Use development boards to flesh out high risk areas of the design early and verify selection.
- Leave a few spare pins in your design for future functionality to minimize rework.

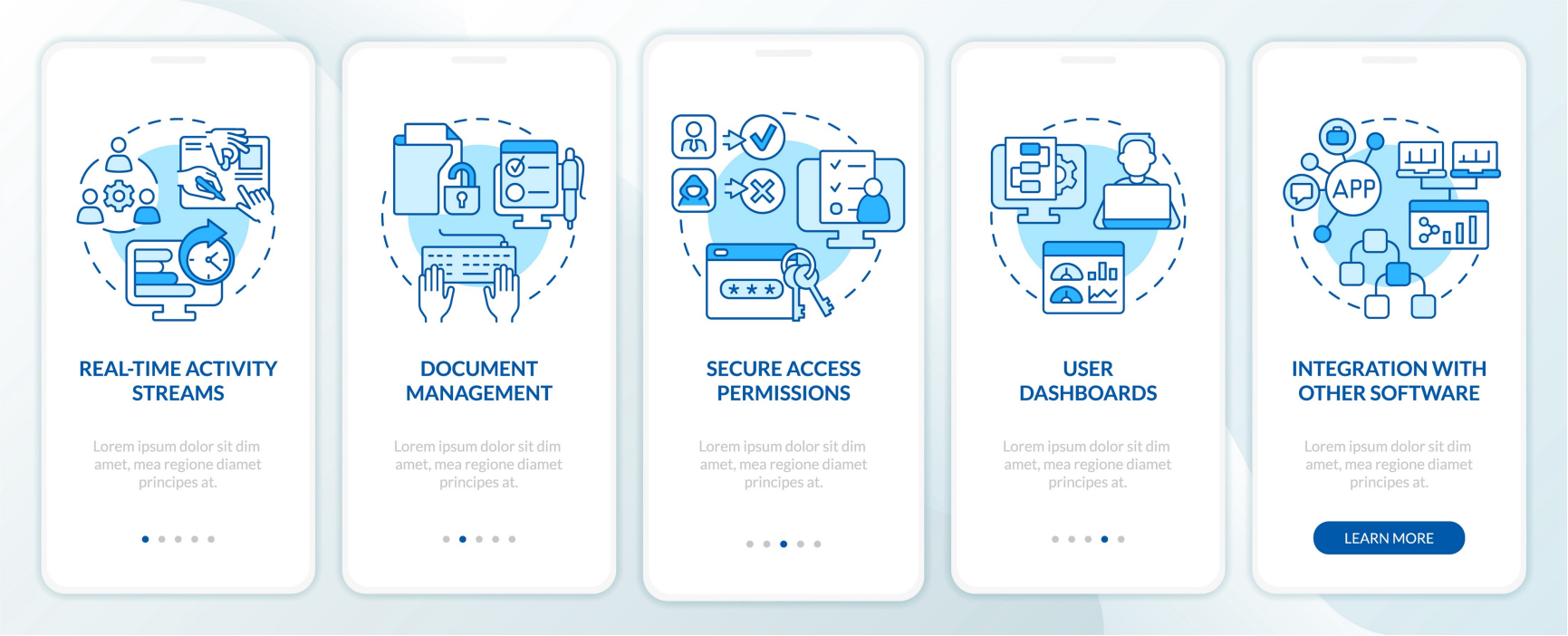
2 Software Best Practices

Let software dictate the microcontroller capabilities, not the hardware.

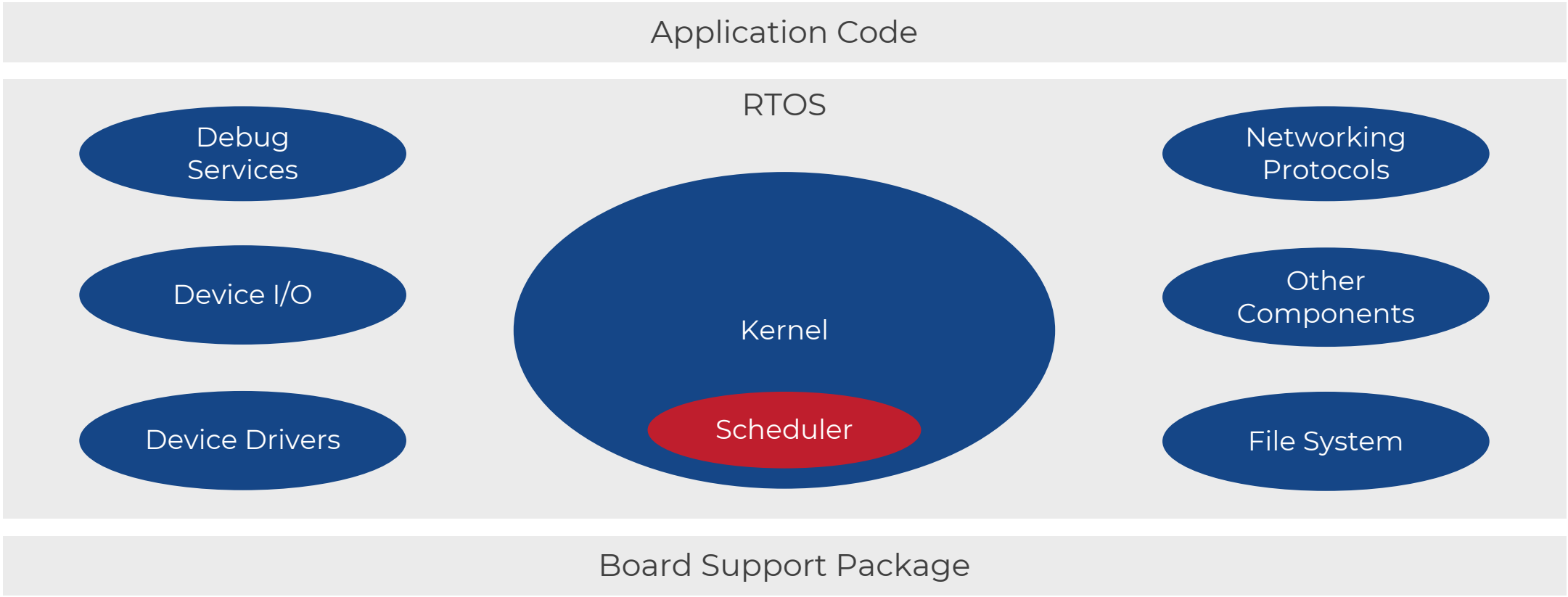


Look for MCU's that have a strong ecosystem! They can dramatically decrease time and cost.

Let software features be your differentiator, not hardware . . .

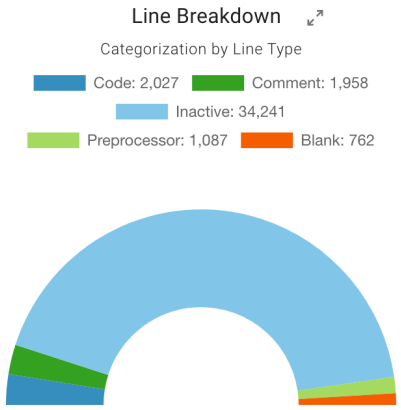


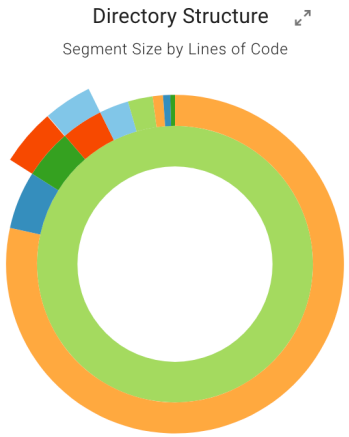
Leverage proven libraries as much as possible

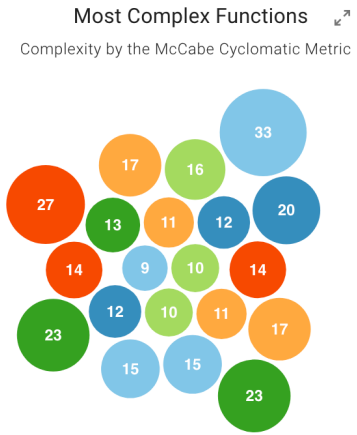


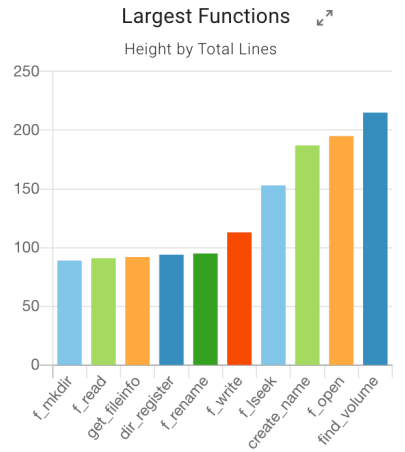
Evaluate, test, and analyze provided software solutions

38,805	17	67
Lines	Files	Functions









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- Look for MCU's that have a strong ecosystem! They can dramatically decrease time and cost
- Let software features be your differentiator, not hardware
- Leverage proven libraries as much as possible
- Evaluate, test, and analyze provided software solutions

4 Going Further

What course topics would you like to hear about in 2023?

Thank you for attending

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- Blog > CEC – How to Select the Right Microcontroller for an Application

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