

TimingAnalyzer

Functionality and Usage

TimingAnalyzer – a tool for software design

The TimingAnalyzer is supplied with the following operating systems:

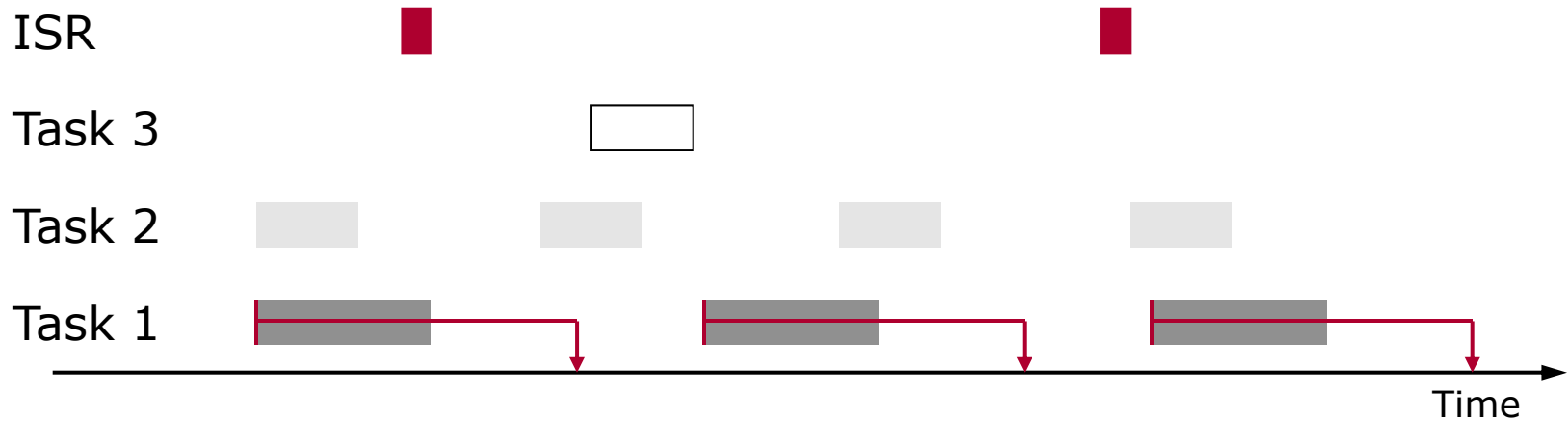
- ▶ osCAN OSEK/VDX
- ▶ MICROSAR-OS AUTOSAR

TimingAnalyzer

Problem definition

- ▶ Periodic tasks
- ▶ Sporadic tasks
- ▶ Interrupts
- ▶ One processor core, i.e. parallel processing is not possible
- ▶ The operating system is pre-emptive
- ▶ How does the time behavior appear?

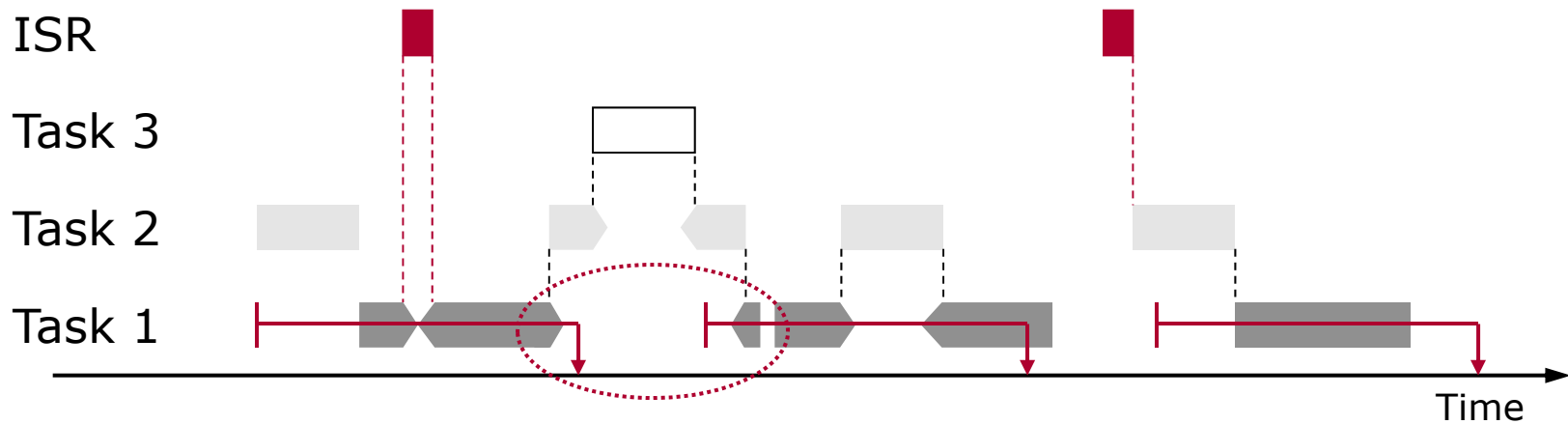
- ▶ Critical: Tasks with deadline



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Problem definition

- ▶ The operating system provides for timely execution of high priority tasks.
- ▶ The developer must ensure that the tasks fulfil time constraints.
- ▶ The developer must document results of the analysis



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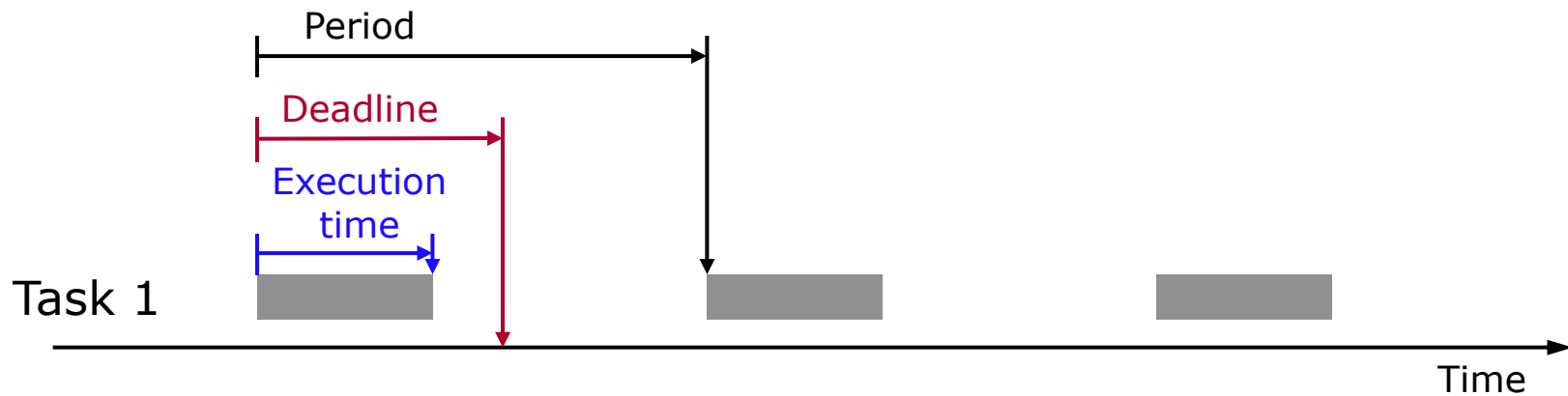
Deadline Monotonic Analysis

Approach

- ▶ All tasks are sorted according to the duration of their deadline
- ▶ Tasks with the shortest deadlines are executed first

Necessary parameters:

- ▶ Execution time (net time)
- ▶ Deadline
- ▶ Period

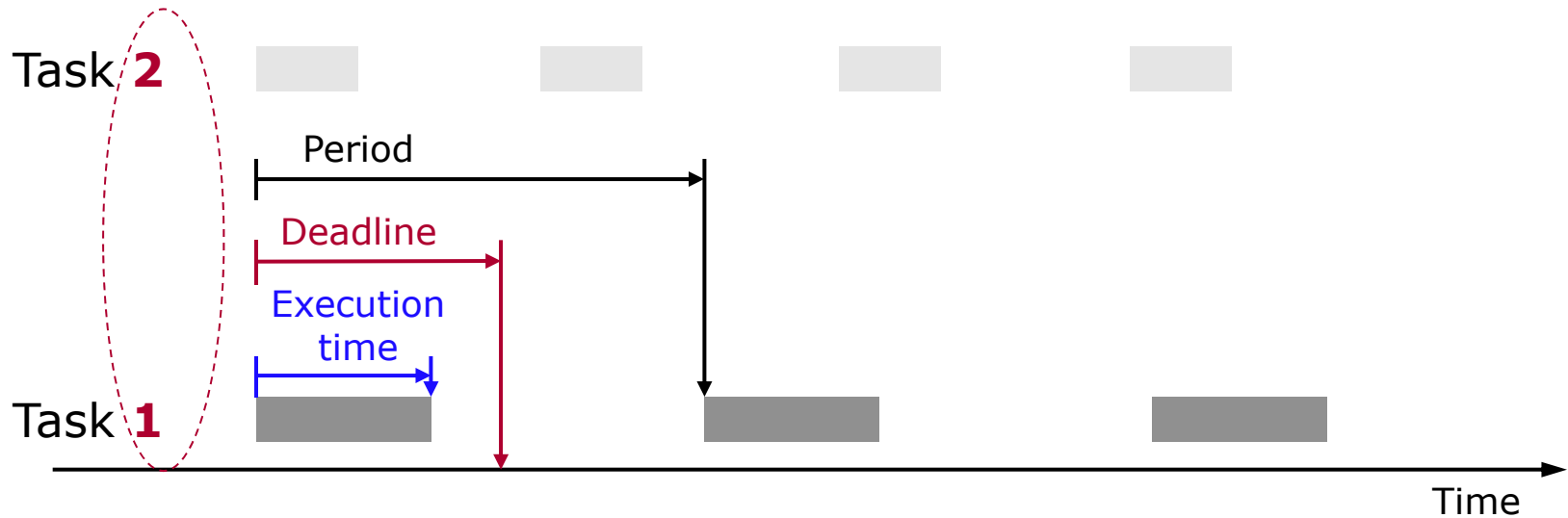


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Deadline Monotonic – User Priority

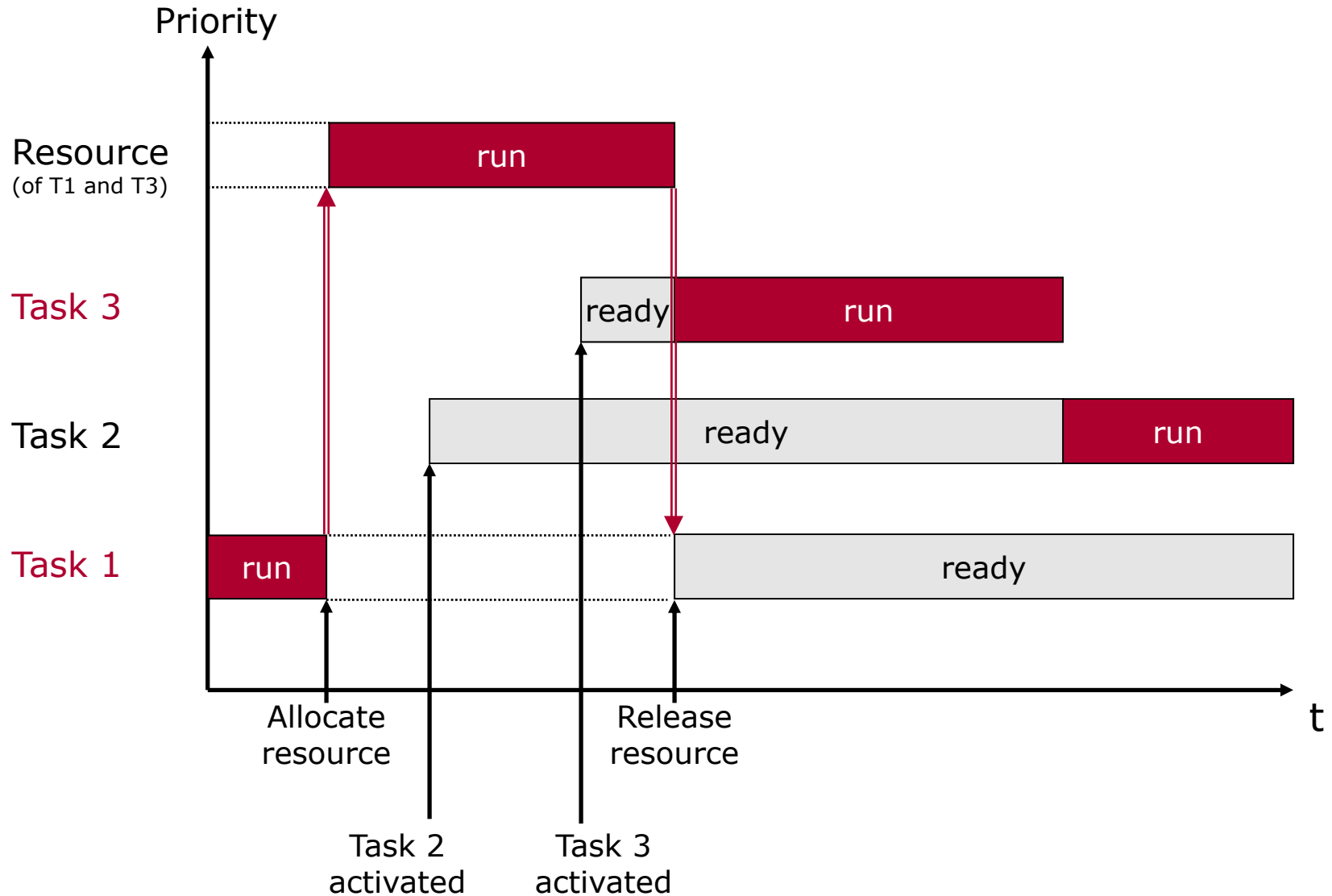
Tasks are executed according to their priority

- ▶ Execution time (net time)
- ▶ Priority
- ▶ Deadline
- ▶ Period



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Resource concept



- ▶ The webinar series about operating systems
 - ▶ 2011-10-25 MICROSAR OS - a pre-emptive realtime multitasking operating system
 - ▶ 2011-11-08 TimingAnalyzer – schedulability analysis of task runtime
 - ▶ 2011-11-22 Memory and runtime protection of the MICROSAR OS operating system
 - ▶ 2011-11-29 Introduction into the multi-core operating system from Vector

- ▶ Registration to the upcoming Webinars and the list of recorded Webinars:
http://www.vector.com/vi_webinars_en.html

- ▶ The overview of Vector's training services:
http://www.vector.com/vi_training_en.html

- ▶ We stay online for some more minutes to answer your questions. Please write your questions in the **Q&A window** and submit them to all **participants**.

- ▶ Contact data for additional questions, product information or presentation :
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Thank you for your attention.

For detailed information about Vector
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www.vector.com

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