

Embedded Operating Systems

Oral Examination SoSe 2018

The exam took a bit less than 30 minutes and I could decide with which topic I wanted to start.

1st Part: Embedded Operating Systems

- Differences: Commercial-of-the-shelf-systems & embedded operating systems
(table from the first slides)
- Features of tasksets
(Period, execution time, ...)
- Kinds of scheduling algorithms
- (What is a harmonic taskset? [only bc I mentioned it before])
- (Proof that scheduling with harmonic tasksets is simpler [usually not part of the exam as well, the professor said I don't have to know that])
- How does the normal Linux become RTLinux?
- Where does the problem of medium access appear? What is the problem exactly?
- How are the parts of an automotive connected?
= with which bus?
- The last question I could chose on my own.

2nd Part: Dependable Systems

- What is dependability?
(definition from the slides)
- What problems are there with dependability?
- What can you do in order to make a system more dependable?
redundancy, hazard analysis
- Kinds of redundancy
- Kinds of hazard analysis techniques
- What is RAID?
- What is the problem with byzantine agreement?
 $n \geq 3f$!
- The other conditions and where they're needed
 $n \geq f$ for fail stops & $n \geq 2f$ for checking consistent computation
- When are two variables independent?