

# Homework 14

(36 points)

“Preemptive Scheduling of Multi-Criticality Systems with Varying Degrees of Execution Time Assurance”

1. What conjecture is made as the basis of this paper? (2 points)
2. What do the four given levels represent, and how do they contribute to constraints on the task system? (4 points)
3. Briefly describe how Audsley’s priority assignment algorithm can be used here. (4 points)
4. How was the multi-criticality workload constructed and analyzed? (4 points)

“Towards the design of certifiable mixed-criticality systems”

5. What are the primary contributions of this paper? (2 points)
6. What are the two meanings given for mixed-criticality systems? (4 points)
7. What is another example (not related to flying) of an application that has “flight-critical” and “mission-critical” components? What are the corresponding components in this application? (6 points)
8. What complexity does the mixed-criticality scheduling problem have? (2 points)
9. Does this change if we restrict all deadlines to be equal, and if so, how? (2 points)
10. In at most four sentences, summarize Sections 4 and 5. (6 points)

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## Feedback

1. How much time did you spend completing this assignment (ignoring interruptions)?
2. How much time did you spend doing the assigned reading (ignoring interruptions)?
3. Any other feedback?