



TECHNISCHE UNIVERSITÄT  
CHEMNITZ



Professur  
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## 8. Exercise

# Dependable Systems

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### Task 1

Theoretical Questions:

- a) Describe the initial Byzantine generals problem.
- b) Think of the real examples for such algorithms.
- c) What extensions/generalisations can you think of?

### Task 2

Consider the proof of the theorem given in the lecture, according to which at least  $3f + 1$  nodes are required in the system with  $f$  Byzantine nodes so that agreement could be achieved. Try to use the concept of the proof and prove that connectivity of  $2f + 1$  is needed in order to make the same problem solvable.

Source: Dirk Müller - Dependable Systems, TU Chemnitz 2013

## Literatur

- [1] Nancy Lynch - Distributed Algorithms. Morgan Kaufmann Publishers, 1996.