

# Dependable Systems – Wishful Thinking or Realistic Expectation?

Andreas Reuter

European Media Laboratory GmbH, Heidelberg  
University of Kaiserslautern

**Abstract.** A system is dependable if you can trust it to work. This seems to a completely obvious, almost trivial definition. But the question of what it means for a system to “work” is influenced by the type of system and the perspective of the user – among other things. Depending on the function, reliability can be an important criterion, but in other cases it can be throughput, response time, accuracy of computations, immunity against malicious attacks –this list could be continued for a while.

In addition to that, the discussion of dependability does not stop at the boundaries of a technical system. The interaction between (human) actors and a technical system creates a new, larger system, for which dependability needs to be defined, too. Thus dependability is not static property, determined by a set of design decisions, but a behavioural trait that strongly depends on external influences. In particular, different users groups can have different perceptions of what they regard as the system’s dependability.

The presentation will start out by precisely defining dependability as a user-dependent phenomenon. Based on this, we will explore the technical means available for supporting the implementation of highly dependable systems by adequate methods and corresponding tools.