

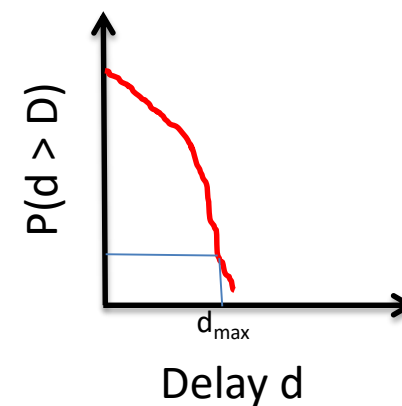
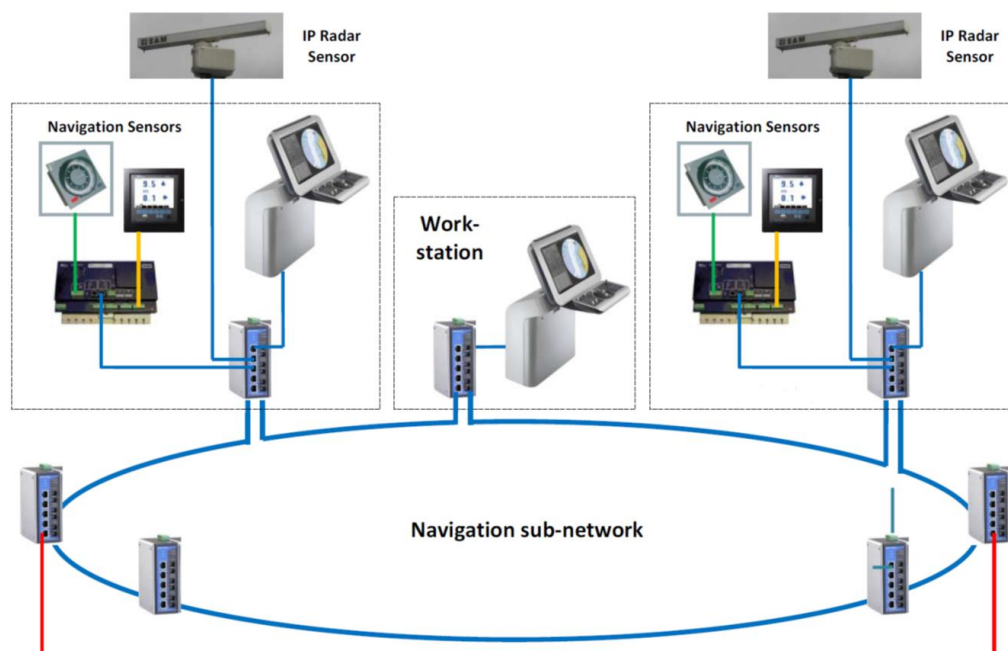
***Safe and Reliable Maritime Communication  
Sichere und zuverlässige Kommunikation  
für Schiffe (SiKoS)***



28. FFV- Workshop  
René Steinrücken

Goal: **Reliable** and **low-maintenance** networks for ships

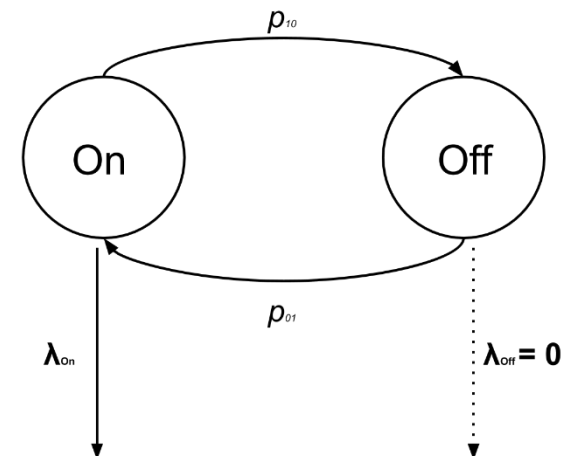
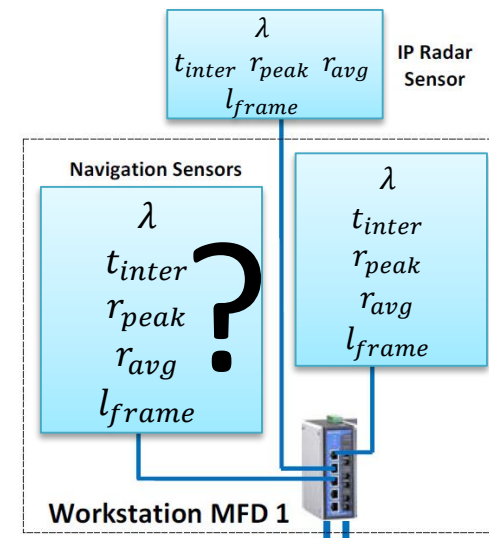
- Plan, certify and install networks
- On the basis of „commercial off-the-shelf (COTS)“ components
- Calculate violation probabilities for delay and loss



## Model traffic sources

Requirements: Mathematically workable

- Constant Rate
- Poisson Process
  - Worst case
- Interrupted Poisson-Process (IPP)



- Calculating bounds:
  - Use Product-Form-Solutions of Queueing Networks
    - Assumptions about queueing disciplines, service times etc.
  - Joint probability of queue sizes in the network is the product of the probabilities of the individual queue sizes
  - Find a specific poisson-bound
    - Bounds hold across a network
- Future: Usage of Stochastic Network Calculus
- Ongoing & Future: Queueing network simulation
  - OMNet++ with queueinglib

