

# Grid Activities in Aalborg

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# Grid Activities in Aalborg

- The agenda
  - “Gridification” of applications
  - Load balancing in heterogeneous clusters
  - Economic scheduling
  - New design for ARC
  - Job Manager
  - ARCLib

# Grid Activities in Aalborg

- “Gridification” of applications
  - Distributed UPPAAL
    - UPPAAL
      - Model checker for real time systems
      - Likes memory (50+ GB)
      - Checking is non-interactive
    - MPI to distribute application on a cluster
    - Not capable of using several clusters yet
    - Computer Scientist Application

# Grid Activities in Aalborg

- Heterogeneous cluster load balancing
  - We have one of these
  - UPPAAL is used as application
  - Nodes steal and create work
  - Queue length modulo speed
  - Control theory for optimal distribution

# Grid Activities in Aalborg

- Economic scheduling
  - Alternative to benchmark based
  - Resource specify minimum price
  - Clients can overbid for preference
  - Resource prices are dynamic
  - Simulation underway

# Grid Activities in Aalborg

- ARC Redesign
  - Group of students writing master thesis
  - Same functionality as ARC
  - Still very new (1½ month)

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- Job Manager
  - Framework for managing jobs
  - Introduces layer / grid proxy
  - Reacts to changes in job status
    - Executes handlers for different states
    - Almost anything is done in handlers
  - Many interesting uses
    - Production system, moving jobs, alternative user interface

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- ARCLib
  - Client library for ARC
    - Will perhaps be more
  - Makes is possible to build frontends
    - CLI, GUIs, Job Manager
  - Some basic functionality still missing



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Questions?