Possible contribution of FESB research group to O^2 project

Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture

Sven Gotovac

Sven Gotovac

- Full professor at FESB

- Research interests:

  - Computer architecture

  - Operating systems

  - Embedded systems

  - Parallel and distributed systems (GPU)

  - Programming

Previous reaserch within ALICE collaboration

- Since 2004. member of ALICE colaboration

- **Eugen Mudnić**
  PhD Thesis: SIMULATION AND OPTIMIZATION OF DATA PROCESSING IN ALICE EXPERIMENT
  Sven Gotovac, Frederico Carminati and Predrag Bunčić

- **Linda Vicković**
  PhD Thesis: MANAGEMENT AND OPTIMIZATION OF MASS DATA STORAGE SYSTEM FOR THE ALICE EXPERIMENT
  Sven Gotovac, Pierre Vande Vyvre

Simulation of O^2 offline (online) processing - tools and models

- Eugen Mudnić is assistant professor at FESB

- Eugen thesis presents models and techniques used to construct DE simulator (Ptolomey) that can be used to study the grid framework based on distributed agent model and to verify its efficiency in ALICE or other complex data processing environment.

- Simulation of the O^2 offline and? online processing is natural extension of his work

  Eugen can participate with his full research capabilities

- Eugen will afterwards present this part of the project proposal

Simulation of O^2 offline (online) processing - tools and models

- Željko Šeremet PhD student in computer engeneering on our Faculty
- Željko is full time assistant at the University of Mostar.
- Željko will work under Eugen supervision.
- He will participate with 100% of his research capabilities.

- The plan is that Željko, from this research make his PhD thesis and Eugen will be his advisor.

Simulation of O^2 offline (online) processing - tools and models

- Linda Vicković is assistant professor at FESB

- For her PhD thesis Linda worked on data storage simulation of transient data storage system for the ALICE experiment.

- At this point there is an idea to check if the simulation can be applied or adjusted for modern disks.

- So there are plans to run performance measurements on:

    - "Traditional" SATA disk (2TB),

    - "Modern" SAS disk that are used for Run2 at this moment,

    and compare this measurements with simulation results.

- As both types of disks are available in DAQ lab the measurements are planned for the near future.

- Linda can participate with her full research capabilities

Simulation of O^2 offline (online) processing - tools and models

- Vesna Gotovac, Teaching assistant, Faculty of science, Department for mathematics, University of Split
- Vesna is PhD student on Faculty of science, Department for mathematics, University of Zagreb
- RESEARCH INTERESTS: Applied probability
- In this project she can participate:
  - Reliability modeling and analysis of souch complexity and large system
    - Determining the distribution of failure time and time to data loss of data storage system
    - Analysis of reliability for data storage system and other system components.
  - Modeling and analysis of computing availability
  - Scaling analysis
- Vesna will participate with 100% of his research capabilities.
- The plan is that Vesna, from this research make her PhD thesis

Simulation of O^2 offline (online) processing - tools and models

- Julije Ožegović is full profesor at FESB.
- He is expert in:
  - computer networks, network protocol, …
  - Digital electronics, FPGA, DSP, ….
- Ante Kristić is postdoctoral research assistant working under Julije supervision

- In this project they can participate:
  - Computer network modeling and analysis
  - Network protocol adoption and customization
  - FPGA programming
  - …..