



Evaluating the performance of resource access control protocols under the EDH realtime scheduling algorithm

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1 Introduction

- Introduction Real time systems.
- Brief introduction of Energy requirements in real time world
- Energy harvesting techniques for embedded wireless devices.

1.1 Goal and Motivation

- Introducing real time constraints , power managements techniques(DVFS,DPM) and Harvested Energy.
- Minimizing the power consumption and meeting the task deadlines.
- Brief explanation about the simulator and EDH

1.2 Overview

- Real-time scheduling problem in a uni processor platform.
- Related different Energy Harvesting algorithms.
- Relation Brief relation Between EDF and ED-H
- Explaining the structure and various chapter of the report)

2 Real Time Systems

- Introduction of real time systems and General purpose systems.
- Real time systems VS General purpose systems.
- Application of real time systems and it classification hard and soft,firm.

2.1 General concepts of Real-Time Systems

- Explaining the various task states.
- Multicore and Uni-Core processor Explanations.
- Periodic task and aperiodic task

2.2 Task Model

- Explaining various task input parameters and its abbreviations

2.3 Scheduling Algorithms

- Brief explanation about different algorithms and its classificatoin

2.4 ED-F Algorithm

2.4.1 Slack Time

2.4.2 Processor demand

2.5 Importance of Energy efficiency in Real-Time Systems

- Introduction to energy efficiency.
- Relation between Energy in real time systems

3 Environmental Energy for Real-Time systems

- Renewable and Non Renewable energy sources.
- Different Environmental energy sources

3.1 Energy storage systems

- Battery and super capacitors
- Energy Storage model

4 Energy Harvesting Scheduling Algorithms

4.1 Introduction

- Energy production model
- Reducing the energy Consumption.

4.2 Energy Harvesting Scheduling Algorithms

- Brief explanation about research scheduling tasks that operate in real-time energy harvesting systems Different Energy harvesting algorithms

5 ED-H Scheduling algorithm

5.1 Introduction

5.2 Rules for ED-H

5.3 Properties of ED-H

- Feasibility tests, Schedulability Test
- optimality analysis, Clairvoyance test

5.4 Slack Energy

- Calculation of Slack Energy

5.5 Examples

- EDH-Examples

5.5.1 Example 1:

5.5.2 Example 2:

6 ED-H Simulator software

6.1 Introduction

- Explaining the various function Files and the header files

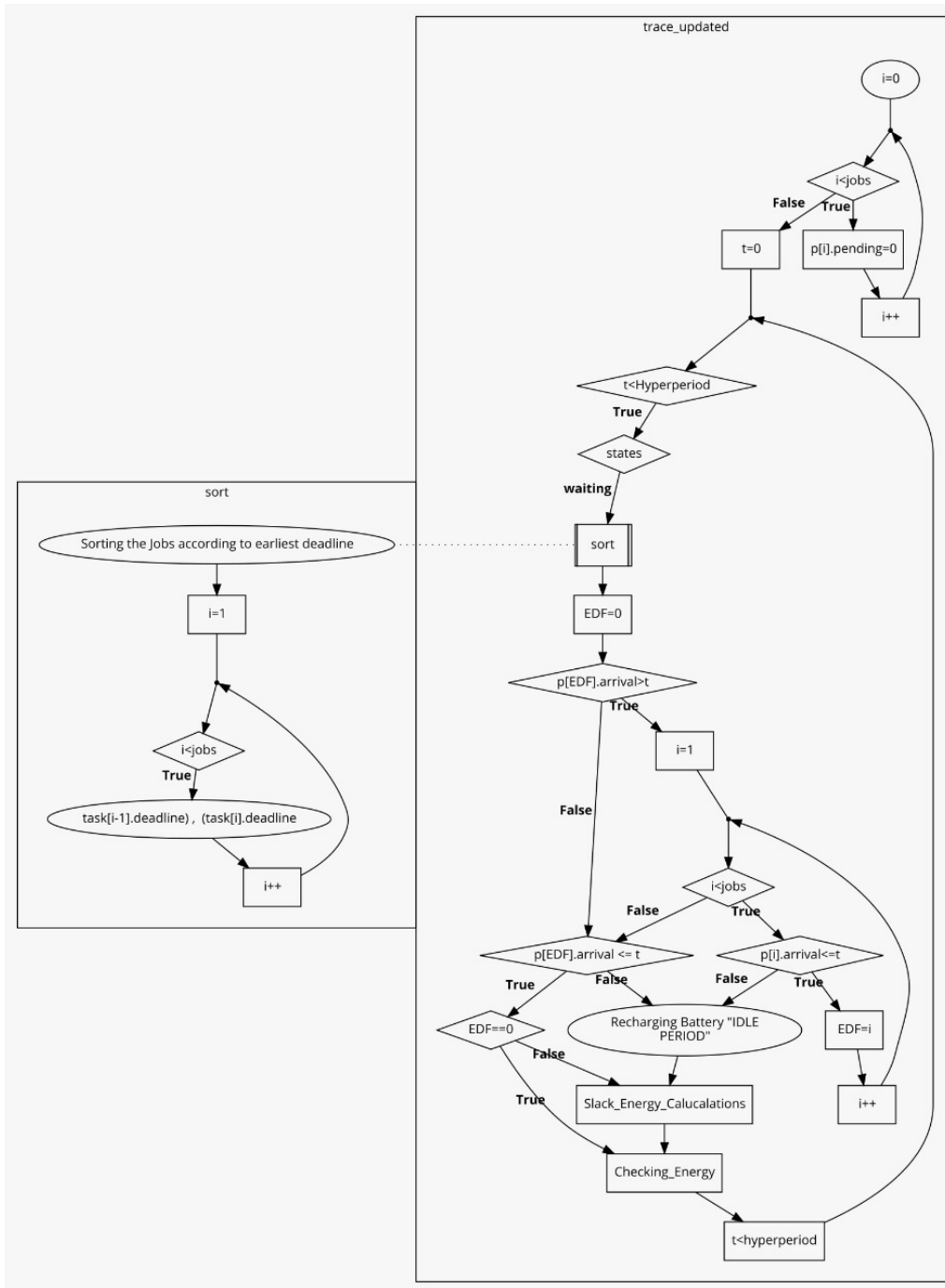
6.2 Simulator Algorithm

- Simulator Pseudo code
- State machine algorithm used for the simulator
- Function Explanations

6.2.1 Simulator Functions

- Explaining the function of the simulator

6.2.2 Simulator Flowchart



6.3 Simulation Tests

6.4 Simulation Results

7 Conclusion