Distributed and Operating Systems Group

Advanced Operating System Issues (AOSI)

Excercise Sheet 1
Due date: 03.11.2011

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1 Definition: Distributed Operating System

a) Characterize the distributed behaviour of the following examples

- A local network of Windows 7 PCs accessing a central file server
- A notebook accessing a Web page over a WLan-Hotspot
- A rendering farm calculating a new Pixar movie
- A car breaking using the ABS system

b) Define and explain the different transparancies, which are beneficial for distributed systems.

c) What are positive aspects of a distributed system and which additional problems may arise from the decision of using a distributed approach?

d) Is a multi-core computer a distributed system? Justify your decision!

2 Programming Abstractions

Charecterize the difference between the following pairs of abstractions:

$$\text{Object} \leftrightarrow \text{Class} \tag{1}$$
$$\text{Object} \leftrightarrow \text{Component} \tag{2}$$
$$\text{Object} \leftrightarrow \text{Actor} \tag{3}$$
$$\text{Component} \leftrightarrow \text{Service} \tag{4}$$