ECAM
BRUSSELS ENGINEERING SCHOOL

Winter 2020
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SS201μ Introduction to the Internal Design of Operating Systems

Mission 1: System program

This assessment evaluates the following competencies:

- *OS101 – Understand and define what is an operating system* *(+1)*
- *OS102 – Explain mechanisms used by the operating system to abstract the CPU, the memory and the input/output* *(+1)*

You may also be assessed on the following competencies:

- *OS821 – Retrieve information about the data structures manipulated by Linux with system commands* *(+2)*
- *OS121 – Understand how the user mode interacts with the kernel mode and explain the system call mechanism* *(+2)*

In this mission, you have to select a system program and analyse how it works and what interactions it performs with the operating system. To succeed the mission, you have to:

1. Choose a system program, read through its documentation and understand how to use it.
2. Understand what services from the OS it is using and find the interactions is has with the CPU, the memory and/or input/output devices.
3. Explain to the teacher your findings, based on some slides you have to prepare to support your explanations.

Optionally, you may work on the two following elements:

- If your system program requires the OS to interact with its internal data structures, understand which ones are involved and what are the effects of running the system program on these data structures.
- If you briefly checked the source code of your system program, find one system call that it uses and explain what interactions between the system program and the OS it allows.