GA04 Deliverable

M.U.P

massively underdeveloped project

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## Introduction

In this assignment we were to evaluate a premade architecture of a forest harvesting machine control system called Blunderjack using the formal architecture evaluation AADL with the program OSATE. We were to complete the AADL model after certain specifications and then evaluate it using two specific scenarios we were given.

## Evaluation result

1. the changes made to the model

Each subsystem now has its own budget for MIPS and RAM resources, based upon the specification given in the assignment.

The predefined flow paths for Device Manager and Safety Manager have been connected successfully. Furthermore, we added a rotation\_inout\_flow to the Safety Manager for usage in scenario 2.

In the system configuration we created 3 different flow paths, the first one (F1) for scenario 1 and the last two (F2 & F3) for scenario 2.

We assigned the subsystems to processor and their memory banks based upon configuration 2 & 3 as can be seen in our AADL model. Based upon the specification we concluded that we could not assign the subsystems in configuration 1.

2. the result of the evaluations

Our result for scenario 1 the highest latency was 265ms, this was well below the requirement given. Our conclusion is that given the current system architecture the system fulfils the requirements.

The result for scenario 2 had a latency of 435ms with the asynchronous test and a latency of 345ms with the synchronous test. Our conclusion is that for the system to fulfil the requirements, the system has to be run synchronous.