SWEN 755
Software Architecture

Assignment 3

Active Redundancy Implementation

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1- Active Redundancy

As it is shown in Diagram 01, the architecture of the system divides the overall system into different subsystem, where each subsystem is a process of its own. For simplicity, the diagram only includes a subset of the system's components.

- Critical Monitor
- Non-Critical Module
- Non-Critical Modules:
    - Adverse Weather Detection
- Critical Modules:
    - Telemetry
    - Redundant_Telemetry

Communication between components is achieved using NamedPipes.

To demonstrate Active Redundancy, the critical module Telemetry has a Redundant Node (hot spare) called Redundant_Telemetry. A NamedPipe between these two components facilitates synchronization. As shown in Diagram 02, both components are deployed on separate CPU's. If the process Telemetry were to be killed, Redundant_Telemetry becomes the active node. The Weather component connects to Telemetry and Redundant_Telemetry to send data.

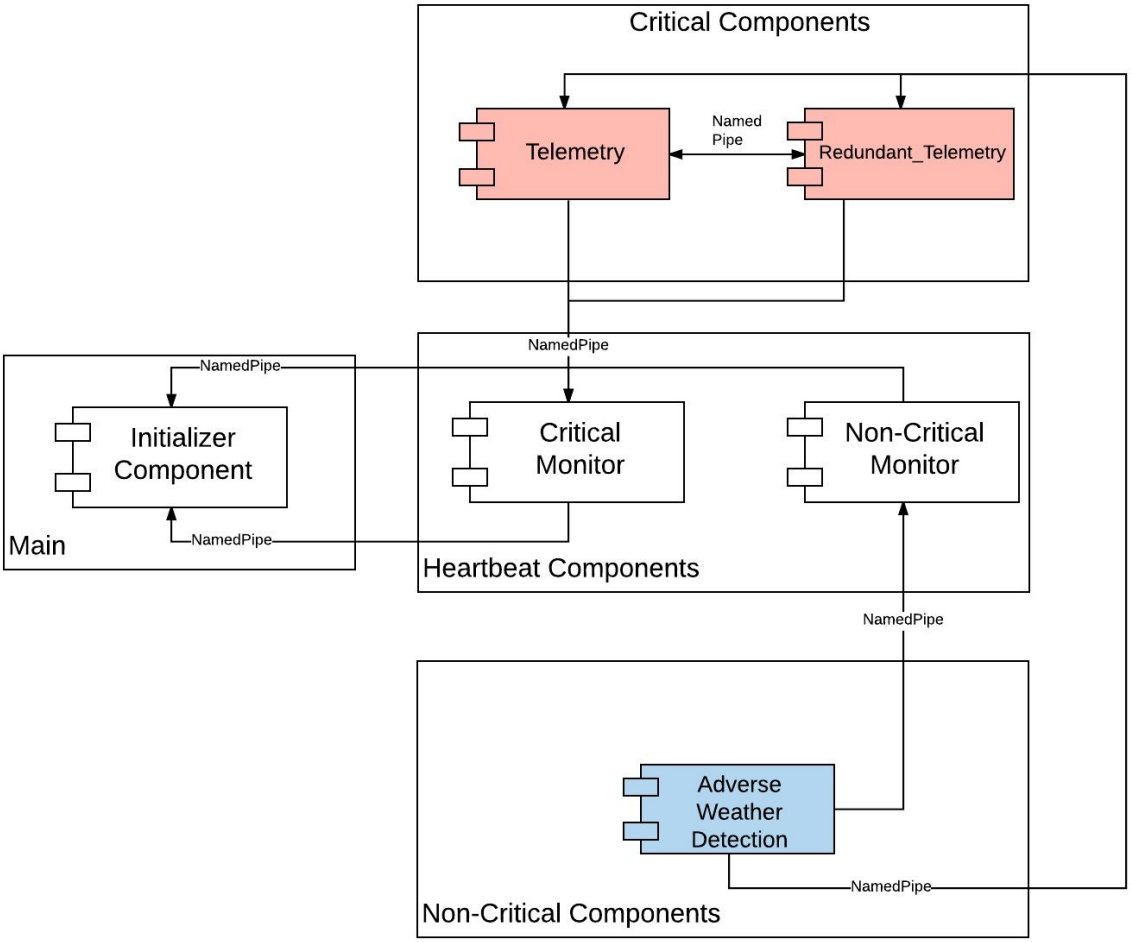

Diagram 01: Component View

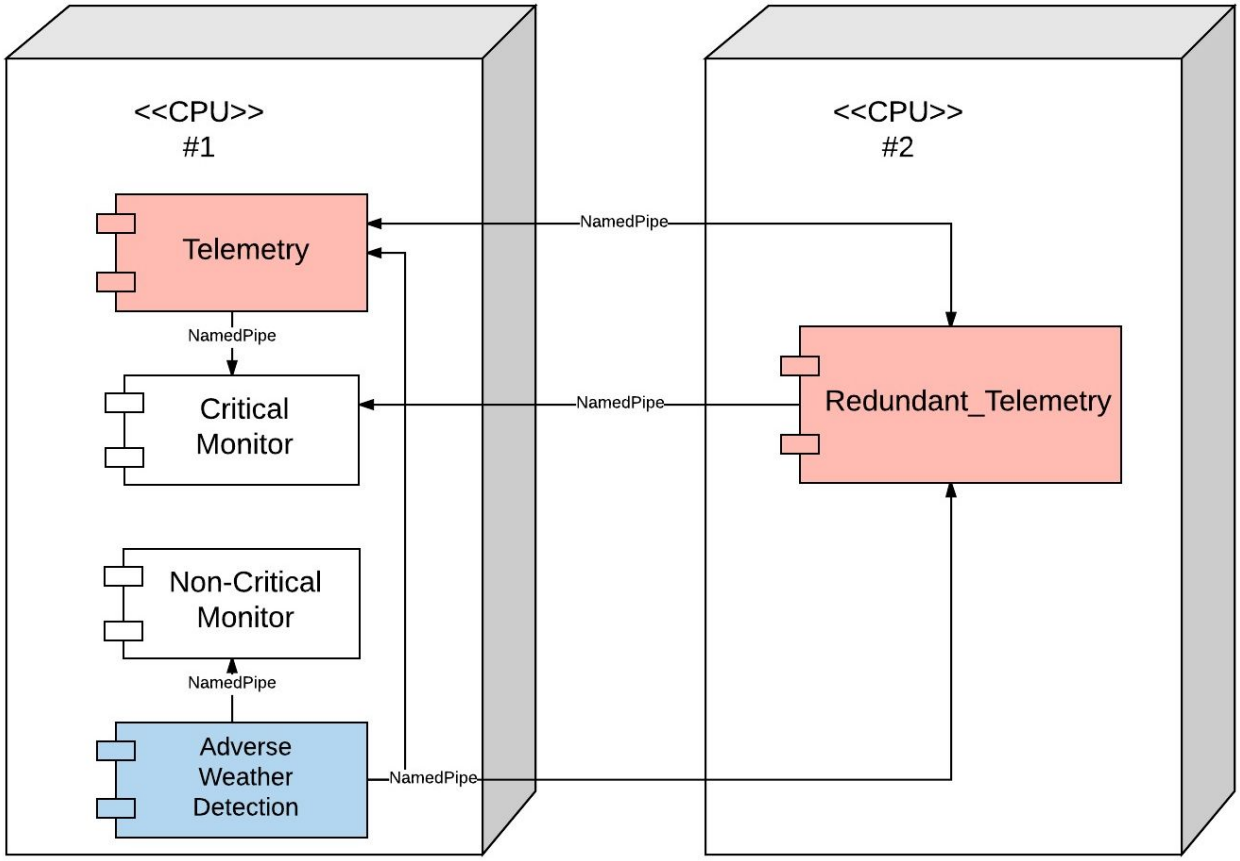

Diagram 02: Deployment View