Assignment nr.2
FSMs and Task-based Architectures: Smart Waste Disposal System

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1 Introduction

This project implements a Smart Waste Disposal System for liquid waste using an Arduino-based embedded system and a PC application for monitoring and operator control. It is based on a finite state machine (FSM) and task-based architecture.

2 Finite State Machine and Task Decriptions

1. **WasteTask**
   Manages waste disposal operations, the main task for the proper functioning of the entire system. It provides for the following states:
   - **CLOSED** (initial state)
   - **OPEN**
   - **RECEIVED**
   - **ERRORED**
   - **FULL**
   - **EMPTYING**
2. **SleepingTask**
   Manages the shutdown of the system when no user is detected in the proximity of the waste container. It provides for the following states:
   - **AWAKE**

- **SLEEPING**

3. **TemperatureTask**
   Manages the temperature changes of the waste inside the container. It provides for the following states:

   - **STABLE**
   - **UNSTABLE**
   - **DANGER**