

Critical Systems Lab - MESCC

Water Pumping Automated System

Ricardo Mendes
1201779

Arthur Gerbelli
1220201

ISEP, January 2024, **Third Delivery**

Contents

1	Introduction	3
2	Requirement Specifications	3
2.1	System Requirements	3
2.2	System Structure and Traceability	3
3	Implementation	4
3.1	CCSYA - Assembly	4
3.2	RTAES - Concurrency and Real Time Scheduling	4
3.3	COMCS - Communication	4
3.4	Prototype	4
3.4.1	WPS	4
3.4.2	RSS	4

1 Introduction

2 Requirement Specifications

2.1 System Requirements

2.2 System Structure and Traceability

3 Implementation

3.1 CCSYA - Assembly

3.2 RTAES - Concurrency and Real Time Scheduling

3.3 COMCS - Communication

3.4 Prototype

3.4.1 WPS

3.4.2 RSS

References

- [1] Espressif documentation: https://docs.espressif.com/projects/esp-idf/en/latest/esp32/api-reference/system/freertos_idf.html#id23/
- [2] C.L.Liu, J.Layland: Scheduling algorithms for multiprogramming in a hard-real-time environment. Journal of the Association of Computing Machinery, Vol.20, N^o.1, (1973)
- [3] ESP-WROOM-32 Specs: https://www.mouser.com/datasheet/2/891/esp-wroom-32_datasheet_en-1223836.pdf