Verification and Validation Report: Measuring Microstructure Changes During Thermal Treatment

Team #30, ReSprint
Edwin Do
Joseph Braun
Timothy Chen
Abdul Nour Seddiki
Tyler Magarelli

March 8, 2023

1 Revision History

Date	Developer	Notes/Changes
Mar 8, 2023	Timothy Chen	Added performance to the Nonfunctional Test Evaluation
Date 2	1.1	Notes

2 Symbols, Abbreviations and Acronyms

symbol	**description**
T	Test
MIN_USER_ACCEPT_RATE	90% - minimum acceptance rate
TARGET_TIME	60 seconds
INTERACT_TIME	5 seconds
MAX_MISTAKE	2
MAX_SIZE	8GB
MIN_UPTIME	30 minutes
MIN_SAMPLE_RATE	60 samples per second
TIME_ACCEPTED	1 second
ACCEPTED_SIGFIG	3 decimals

Contents

1 Revision History i

2 Symbols, Abbreviations and Acronyms ii

3 Functional Requirements Evaluation 1

4 Nonfunctional Requirements Evaluation 1
- 4.1 Usability . . . 1
- 4.2 Performance . . . 1
- 4.3 etc. . . . 2

5 Comparison to Existing Implementation 2

6 Unit Testing 3

7 Changes Due to Testing 3

8 Automated Testing 3

9 Trace to Requirements 3

10 Trace to Modules 3

11 Code Coverage Metrics 3

List of Tables

List of Figures

This document ...

3 Functional Requirements Evaluation

4 Nonfunctional Requirements Evaluation

4.1 Usability

Usability Tests				
Requirement	Related Unit Tests	Description	Expected Result	Result
Afghanistan	AF	AFG	004	PASS
Aland Islands	AX	ALA	248	
Albania	AL	ALB	008	
Algeria	DZ	DZA	012	
American Samoa	AS	ASM	016	
Andorra	AD	AND	020	
Angola	AO	AGO	024	

4.2 Performance

The following is the list of Non-functional Test performed on the application to evaluate the performance of the application in respect to the test requirement. Each test will be mapped to unit test that are related to the corresponding requirement.

Performance Tests				
Test Requirement	Related Unit Tests	Description	Expected Result	Result
NF-PT1	-	Checking the minimum sampling rate of the application.	The sampling rate of the application will be equal or greater than *MIN_SAMPLE_RATE*	PASS
NF-PT2	-	Checking the time required for parameters to reflect in the application.	The parameters will reflect in the application by within *TIME_ACCEPTED*	PASS
NF-PT3	-	Checking the significant digits used for calculations and display in the application.	The significant digits seen and used in the application is accurate to *ACCEPTED_SIGFIG*.	PASS
NF-PT4	-	Checking the up-time of the application during and after usage.	The application will have a up-time equal to or more than *MIN_UPTIME* after the user completes a set of tasks.	PASS

4.3 etc.

5 Comparison to Existing Implementation

This section will not be appropriate for every project.

6 Unit Testing

7 Changes Due to Testing

8 Automated Testing

9 Trace to Requirements

10 Trace to Modules

11 Code Coverage Metrics

References

Appendix — Reflection

The information in this section will be used to evaluate the team members on the graduate attribute of Lifelong Learning. Please answer the following questions:

1.

2.