Verification and Validation Report: The Nursery Project

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1 Revision History

Date	Version	Notes
2023-03-08	1.0	Initial Revision

2 Symbols, Abbreviations and Acronyms

symbol	description
ART	Accessibility Requirements Test
CR	Conveyor Functional Requirement
CST	Conveyor Subsystem Test
EPET	Expected Physical Environment Test
LCD	Liquid-Crystal Display
LED	Light Emitting Diode
LRT	Learning Requirements Test
MG	Module Guide
MIS	Management Information Systems
NFR	Non-Functional Requirement
PDST	Pot Dispenser Subsystem Test
PDR	Pot Dispensing Functional Requirement
PCST	Pot-pulator Complete System Testing
PT	Precision Test
RT	Reliability Test
SCT	Safety Critical Test
SRS	Software Requirements Specification
SRT	Speed Requirements Test
TDST	Tray Dispenser Subsystem Test
TDR	Tray Dispensing Functional Requirement
VST	Verification Subsystem Test
VR	Verification Functional Requirement

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3 Functional Requirements Evaluation

3.1 Pot-pulator Complete System Testing

Test Number	Description	Input	Expected Output	Actual Output	Result
PCST-01	Tray Dispenser Operation	Sensor reading of status of tray stack	Normal system operation	Normal system operation	Pass
PCST-02	On Switch for Tray Dispenser Error				

Table 1: PCST Evaluation

3.2 Tray Dispenser Subsystem Testing

3.3 Pot Dispenser Subsystem Testing

3.4 Conveyor Subsystem Testing

3.5 Verification Subsystem Testing

4 Nonfunctional Requirements Evaluation

4.1 Safety Critical Testing

4.2 Precision Testing

4.3 Reliability Testing

4.4 Expected Physical Environment Testing

4.5 Speed Requirements Testing

4.6 Learning Requirements Testing

4.7 Accessibility Testing

5 Comparison to Existing Implementation

This section will not be appropriate for every project.

6 Unit Testing

7 Changes Due to Testing

The changes due to testing are summarized below:
1. The bases of the verification mounts were recently expanded away from the conveyer by approximately 5 cm on either side, to address issues with the pots being too close to the sensor when travelling down the conveyer, resulting in inaccurate readings.

8 Automated Testing

9 Trace to Requirements

The following table outlines all of the system tests and how they relate to the relevent requirements. The requirements can be referenced in the SRS document.

—p4cm—p8cm— Corresponding Test IDs and Requirements

Test ID	**Supporting Requirements**
TDST-01	TDR3, TDR5
TDST-02	TDR4, TDR5
TDST-03	TDR2
TDST-04	TDR2
PDST-01	PDR2
PDST-02	PDR2
PDST-03	PDR3
PDST-04	PDR4
PDST-05	PDR5, PDR6
PCST-01	TDR1
PCST-02	TDR5, TDR6
PCST-03	TDR7
PCST-04	PDR1
PCST-05	PDR6, PDR7
PCST-06	PDR8
PCST-07	CR1

PCST-08	CR5
PCST-09	CR6
VST-01	VR1
VST-02	VR2
SCT-01	NFR12
SCT-02	NFR12
SCT-03	NFR12
SCT-04	NFR12
PT-01	NFR13
PT-02	NFR14
RT-01	NFR17
EPET-01	NFR20
LRT-01	NFR6
ART-01	NFR7
SRT-01	NFR8
SRT-02	NFR9
SRT-03	NFR10

10 Trace to Modules

The following table outlines all of the system tests and how they relate to the relevent modules. The modules can be referenced in the MG document.

—p4cm—p8cm— Corresponding Test IDs and Requirements

Test ID	**Supporting Requirements**
TDST-01	
TDST-02	
TDST-03	
TDST-04	
PDST-01	
PDST-02	
PDST-03	
PDST-04	
PDST-05	
PCST-01	
PCST-02	
PCST-03	
PCST-04	
PCST-05	
PCST-06	
PCST-07	
PCST-08	
PCST-09	

VST-01
VST-02
SCT-01
SCT-02
SCT-03
SCT-04
PT-01
PT-02
RT-01
EPET-01
LRT-01
ART-01
SRT-01
SRT-02
SRT-03

11 Code Coverage Metrics

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.