*3D Delta Printer*

3D Delta Printer Product Design Specification

Version *1.0*

*2014.10.31*

VERSION HISTORY

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Version #** | **Implemented**  **By** | **Revision**  **Date** | **Approved**  **By** | **Approval**  **Date** | **Reason** |
| 1.0 | *L.LAVY* | *2014.10.31* | */* | */* | Initial Design Definition draft |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

TABLE OF CONTENTS

[1.1 Purpose of The 3D Delta Printer Product Design Specification Document 4](#_Toc402524606)

[2.1 Assumptions / Constraints / Standards 4](#_Toc402524607)

[3.1 Logical View 4](#_Toc402524608)

[3.2 Hardware Architecture 4](#_Toc402524609)

[3.2.1 Mechanical design 4](#_Toc402524610)

[3.2.2 Electronic design 5](#_Toc402524611)

[3.3 Software Architecture 5](#_Toc402524612)

[3.4 Security Architecture 5](#_Toc402524613)

[3.5 Communication Architecture 5](#_Toc402524614)

[3.6 Performance 5](#_Toc402524615)

[3.7 Fonctional requirements 5](#_Toc402524616)

[4.1 General Material 6](#_Toc402524617)

[4.2 BOM 6](#_Toc402524618)

# Introduction

## Purpose of The 3D Delta Printer Product Design Specification Document

The 3D Delta Printer Product Design Specification document documents and tracks the necessary information required to effectively define architecture and system design in order to give the development team guidance on architecture of the system to be developed. The 3D Delta Printer Product Design Specification document is created during the Planning Phase of the project. Its intended audience is the project manager, project team, and development team. Some portions of this document such as the user interface (UI) may on occasion be shared with the client/user, and other stakeholder whose input/approval into the UI is needed.

# General Overview and Design Guidelines/Approach

This section describes the principles and strategies to be used as guidelines when designing and implementing the system.

## Assumptions / Constraints / Standards

CE Marking if possible.

# Architecture Design

This section outlines the system and hardware architecture design of the system that is being built.

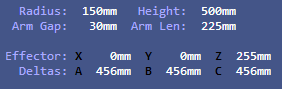
## Logical View

N/A

## Hardware Architecture

### Mechanical design

* "Delta" design called "DeltaBot" or "Rostock".
* Tabletop design.
* **Dimensional printed part** :
  + Recommended diameter surface : **300mm** with minimal of 200mm.
  + Height : **250mm**.
* External dimensions : According to DeltaBot calculator (<http://www.thinkyhead.com/_delta/>) (to be verified) :



### Electronic design

* Power supply 12V or 24V , more than 200W
* Arduino DUE main board electronic
* Ramps FD (Arduino DUE shield)
* DRV8825 stepper driver (or equivalent (A4988))
* Motor : NEMA17, 0.9deg/step, 0.42Nm (42BYGHM809)
* LCD panel with SDcard slot [optional]

## Software Architecture

* Main board Arduino software : **Repetier Firmware** up to 0.91 ; 0.92 recommended for Arduino DUE
* **Host Repetier software** 1.0.6 (PC, Linux) [Main software]

## Security Architecture

## Communication Architecture

## Performance

## Fonctional requirements

| Req# | Requirement | Comments | Priority | Date Rvwd | SME Reviewed / Approved |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

# Material / BOM

## General Material

## BOM

| Ref.# | Designation | Comments | Price [€] | Web Link |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
|  |  |  |  |  |

3D Delta Printer Product Design Specification Approval

The undersigned acknowledge they have reviewed the *3D Delta Printer* **3D Delta Printer Product Design Specification** document and agree with the approach it presents. Any changes to this Requirements Definition will be coordinated with and approved by the undersigned or their designated representatives.

|  |  |  |  |
| --- | --- | --- | --- |
| Signature: |  | Date: |  |
| Print Name: |  |  |  |
| Title: |  |  |  |
| Role: |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Signature: |  | Date: |  |
| Print Name: |  |  |  |
| Title: |  |  |  |
| Role: |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Signature: |  | Date: |  |
| Print Name: |  |  |  |
| Title: |  |  |  |
| Role: |  |  |  |

Appendix A: References

The following table summarizes the documents referenced in this document.

|  |  |  |
| --- | --- | --- |
| **Document Name and Version** | **Description** | **Location** |
| *<Document Name and Version Number>* | *[Provide description of the document]* | *<URL or Network path where document is located>* |
|  |  |  |

Appendix B: Key Terms

*[Insert terms and definitions used in this document. Add rows to the table as necessary. Follow the link below to for definitions of project management terms and acronyms used in this and other documents.*

*http://www2.cdc.gov/cdcup/library/other/help.htm*

The following table provides definitions for terms relevant to this document.

|  |  |
| --- | --- |
| **Term** | **Definition** |
| *[Insert Term]* | *[Provide definition of the term used in this document.]* |
| *[Insert Term]* | *[Provide definition of the term used in this document.]* |
| *[Insert Term]* | *[Provide definition of the term used in this document.]* |