Automated Anechoic Chamber

## Requirements Specification

Revision 1.0

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# 1. Introduction

## 1.1 Purpose

## 1.2 Scope

## 1.3 Definitions, Acronyms, and Abbreviations

## 1.4 References

## 1.5 Overview

# 2. Overall Description

## 2.1 Product Perspective

## 2.2 Product Functions

## 2.3 User Characteristic

## 2.4 Design Constraints

## 2.5 Assumptions and Dependencies

# 3. Specific Requirements

## 3.1 Marketing Requirements

1. Product will position antennas in an anechoic chamber to automate RF research.
2. Product will be user friendly.
3. Product will be low cost.
4. Product will be able to test a variety of different antennas.
5. Product will enable different measurement modalities.
6. Product will be easily maintainable.
7. Product is modular and expandable to additional functionality.

## 3.2 Engineering Requirements

|  |  |  |
| --- | --- | --- |
| Marketing Requirements | Engineering Requirement | Justification |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

# 4. Use Cases

### 4.0.1 UC1: System Initialization

* **Primary Actor**: User (Researcher)
* **Stakeholders/Interests**:
  + *User*: Wants to be able to begin using the system and receive clear indication when the device is ready to use.
  + *Measurement Equipment*: Needs to be powered on without damaging itself or the DUT.
  + *Anechoic Chamber*: Measuring equipment [Could we say startup won’t damage chamber?]
* **Preconditions:** 
  + User has basic knowledge of the use of lab equipment and anechoic chamber access.
  + Antenna is not mounted already
  + Measuring equipment is already configured and connected to power sources.
* **Success Guarantee**:
  + All required equipment’s indicator light is turned on and both antennas are securely mounted.
* **Main Success Scenario**:
  1. User places the selected antenna to test and reference the antenna on corresponding to the antenna mount.
  2. User turns on the motor controller system.
  3. User turns on the function generator.
  4. User turns on the receiving power measurement device.
  5. User turns on the connected computer.
* **Extensions:**

1a. The antenna cannot be mounted onto the device.

* + - The antenna cannot be tested.
    - User switches the antenna that fits the antenna mount.

2-5a. Measurement equipment does not have power.

* + - User plugs in equipment to an appropriate power source or outlet.
* **Special Requirements**: N/A
* **Open Issues**: N/A

### 4.0.2 UC2: Creation of Custom Scripts

* **Primary Actor**: User (Researcher)
* **Stakeholders/Interests**:
  + Fill out
* **Preconditions:** 
  + Fill out
* **Success Guarantee**:
  + Fill out
* **Main Success Scenario**:

1. Fill out

* **Extensions:**
* **Special Requirements**: N/A
* **Open Issues**: N/A

### 4.0.3 UC3: Run Automated Scripts

* **Primary Actor**: User (Researcher)
* **Stakeholders/Interests**:
  + Fill out
* **Preconditions:** 
  + Fill out
* **Success Guarantee**:
  + Fill out
* **Main Success Scenario**:

1. Fill out

* **Extensions:**
* **Special Requirements**: N/A
* **Open Issues**: N/A

### 4.0.4 UC4: Power Off

* **Primary Actor**: User (Researcher)
* **Stakeholders/Interests**:
  + Fill out
* **Preconditions:** 
  + Fill out
* **Success Guarantee**:
  + Fill out
* **Main Success Scenario**:

1. Fill out

* **Extensions:**
* **Special Requirements**: N/A
* **Open Issues**: N/A