# Introduction

The Rocket Switch Interface is intended to be a low-cost switch interface, alternative to commercial options. The device needs to perform the main functions offered by commercial devices.

# Problem Definition

**Who**

Who will be using the product?

* The Switch Interface is intended to be used primarily by anyone wishing to use adaptive switches and switch control software, to interface with computers or smartphones.

**What**

What must the device do?

* The source Switch Interface must convert the assistive switch activations, to inputs readable by the host devices (computers or smartphones).
* The Switch Interface must be easy to use.

**Where**

Where will the device be used?

* The Switch Interface is primarily intended to be used in an assistive switch user’s home, school or office environment.

**When**

* The Switch Interface is primarily intended to be used during computer or smartphone access/usage sessions.

**Why**

Why will the device be used?

- The Switch Interface is primarily intended to be used as a low cost, open source switch interface option, alternative to commercial options.

# Functional Properties

## Goals

|  |  |
| --- | --- |
| G01 | Cost-effective |
| G02 | Cost Effective (Low cost comparing to alternative options) |
| G03 | Easy to use |
| G04 | Easy to assemble |
| G05 | Minimal size |

## Functional Requirements

|  |  |
| --- | --- |
| **ID** | **Description** |
| F01 | The device shall have one or more input channels. |
| F02 | The device shall send output data via USB HID to the host device. |
| F03 | The device shall be compatible with switch control software. |
| F04 | The device switch shall incorporate minimal input protection. |
| F05 | The device latency shall not exceed 50 milliseconds. |
| F06 | The device shall support visual feedback for user interactions. |
| F07 | The device shall not consume more than 20 mA of current from the USB port. |
| F08 | The device shall be able to perform Mouse button, joystick button and keyboard emulation. |
| F09 | The device shall weigh less than 25 grams. |
| F10 | The device shall be smaller than 50mm x 40mm x 20mm. |

## Non-functional Requirement

|  |  |
| --- | --- |
| **ID** | **Description** |
| NF01 | Shall look professional with tight tolerance on case size. |
| NF02 | Input ports should be legibly labelled for easy identification |

## Constraints

|  |  |
| --- | --- |
| ID | Description |
| C01 | Shall be able to be built as a single unit for ≤ $40 CAD |
| *C02* | *Shall be easily manufacturable by a moderately skilled maker* |