

Analysis of technical risks for project «STM32-bootloader»

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Risks

Learning how to work with STM32 device

Description

We need to learn how to work with STM32 device to understand how it works, how it works with I/O, how to configure pins and transmit data by them. IF we can't do this THEN we won't be able to continue in implementation of our project.

Action for Reduce the Impact

We want to write a game that will use external components. Also we'll ask help from our mentor.

The problems with encryption

Description

The main part of our project is encryption of the firmware. IF our encryption method isn't suitable THEN we'll need to work with another encryption method thus wasting time.

Action for Reduce the Impact

We will test whether the encryption method we chose is working properly.

The problems with universality

Description

We want to make our project device-independent. IF we won't be able to do this THEN our project will work correctly only for several select chips thus making the bootloader severely limited in its usefulness.

Action for Reduce the Impact

We'll write a program that configures a bootloader for specific devices.

Learning how to transmit data via UART

Description

We need to learn how to transmit data via UART to understand how UART works. IF we can't do this THEN we'll need to transmit data via another port.

Action for Reduce the Impact

We'll write a test-program that sends debug information by UART to a python client.

Testing of our project

Description

Every project needs to be tested to get at least some guarantee that it works. IF we do not cover our project with tests THEN there will be potential errors in our project.

Action for Reduce the Impact

We will create a testing prototype based on the framework (we don't know which exactly now). And we will cover our bootloader by some tests to resolve our risk.

Installing bootloader on the devices with a small flash memory

Description

We need to make sure that our bootloader fits comfortably on devices with little memory. IF it won't be able to do it THEN the scope of our project will be reduced a bit.

Action for Reduce the Impact

We will create a bootloader prototype and install it on STM32 with small memory storage.