FPGAConfigurationSubsystem

On-board FPGA bitstream loader

block diagram:

```
┌────────────────────┐          ┌────────────────────┐
│ Bitstream selector │          │  Bitstream flow    │
│                    │          │     start !        │
└────────────────────┘          └────────────────────┘
                │                          │
                ▼                          ▼
        ┌──────────────────────────────┐        Tx only SPI      ┌──────────────────┐
        │       FPGALoader by Niko      │ ──────────────────────▶│ FPGA - CCLK, DIN │
┌────────────┐   ┌──────────────────┐                            │      pins        │
│ Micro USB  │◀─▶│    STM32 MCU     │                            └──────────────────┘
└────────────┘   │  STM32F103C8T6   │        Full duplex SPI
                 └──────────────────┘ ◀──────────────────────┐
                       │        │                            ▼
                       ▼        ▼                    ┌──────────────────┐
        ┌──────────────┐  ┌──────────────────┐       │ SPI Flash W25Qxx │
        │  Debug UART  │  │ SWD programming  │       └──────────────────┘
        └──────────────┘  │   interface      │
                          └──────────────────┘
```

Soldered connectors	Button	Other chip
Pinout on PCB - no connector	DIP Switch	
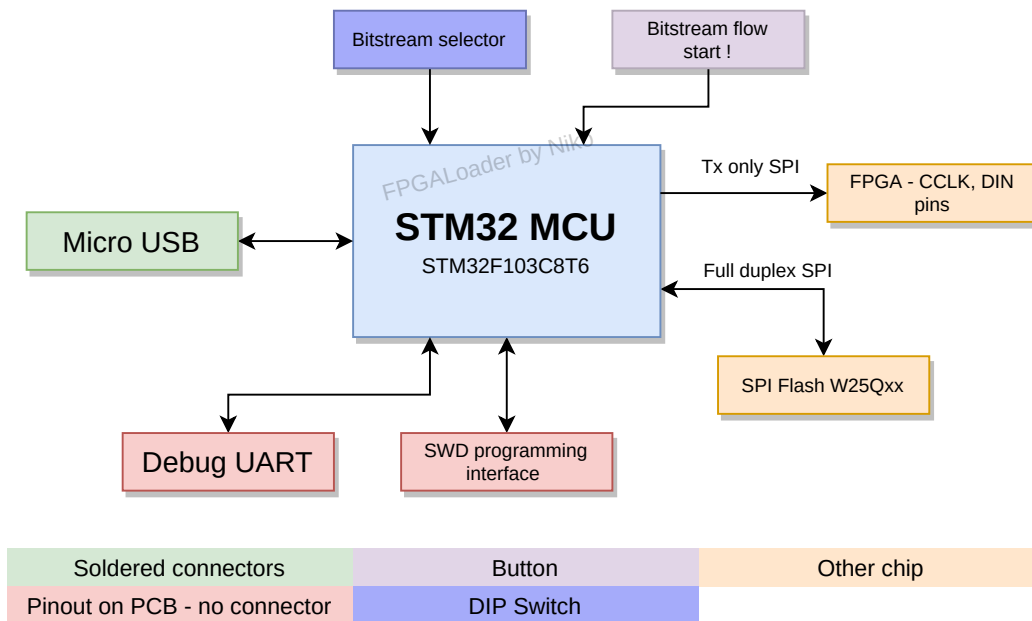
How it works?

- Device waits for user action

- User can select a bitstream

- When user starts bitstream flow - data is sent to FPGA

- User can write a new bitstream(s) to SPI Flash using an USB, with a special PC application which interacts with STM32 on-chip firmware