SPECIFICATIONS

# Software

# Specifications IF tool

Ver1.0 : 25th, Sep 2023

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## 2. Introduction

We will develop a development support tool (simulation board) to facilitate embedded SW development.

By developing this tool, the embedded SW development period is shortened, and the same development environment as DZ and DEVN can be built, making it easier to perform remote development activities more smoothly. It can be expected.

And the IF tool application that operates input/output signals on a PC and communicates with the development board. It mainly has the following functions.

- Config file reading function
- UI auto-setting/update function
- UART communication function
- CAN communication function
- Input signal monitoring function
- Output signal control function
- Logging
- Timestamp function
- Sequence control function



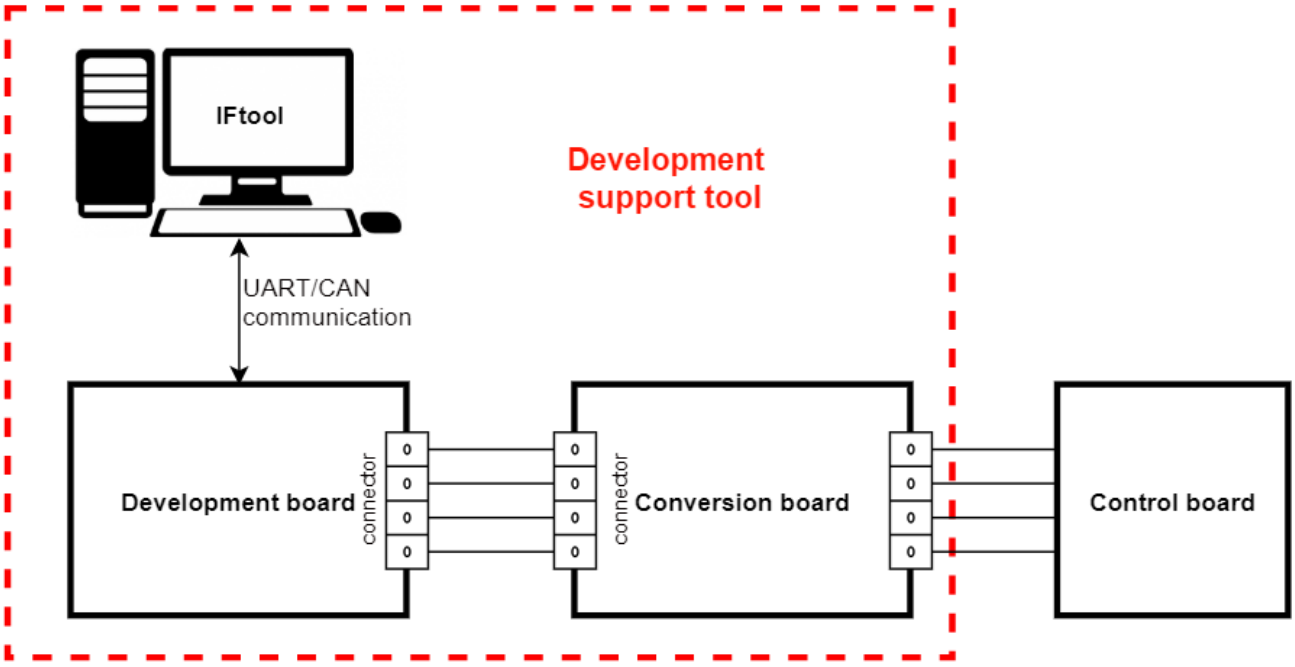


Figure 2-1 Support tool system overview

# 3. Overview

## 3.1. System Overview

With Hardware's processing ability, users can fix signals in the file to use for different projects.

In the application window of the application, users can choose the port to connect CAN/UART communication and change the output control value, sent the output control signal to the Development Board. At the same time, users can view the input value that the Development Board circuit sent.

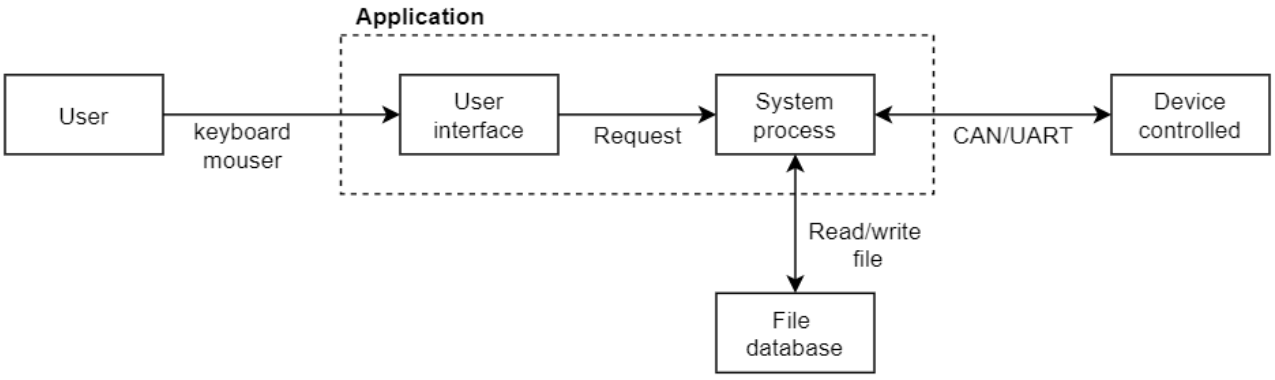


**Figure 3-1 IF tool system overview**

## 3.2. Function of application

**With user:**

- Open app/Close app
- Import file
- Save
- Save as
- Reset to value default
- Clear to value before
- Select type Communication
- Select COM port
- Connect/Disconnect device
- Setting autocontrol
- Save auto control
- Start/Stop write log
- Export log
- Import log
- Setting output control
- Save ouput control
- Choose signal to view
- Choose property to view
- Control Run/Stop output with current setting
- Resize form

**With Device:**

- Monitor COM port to get COM active
- Warnig COM state
- Connect/Disconnect
- Transmit output control data
- Recieve input data

**With file database:**

- Save/Get link location file
- Read/write excel file
- Read/write csv file
- Read/write json file
- Warning file format
- Warning overwrite file

## 3.3. Data flow

Users can save the signal and data for the next time and operating history by log file:

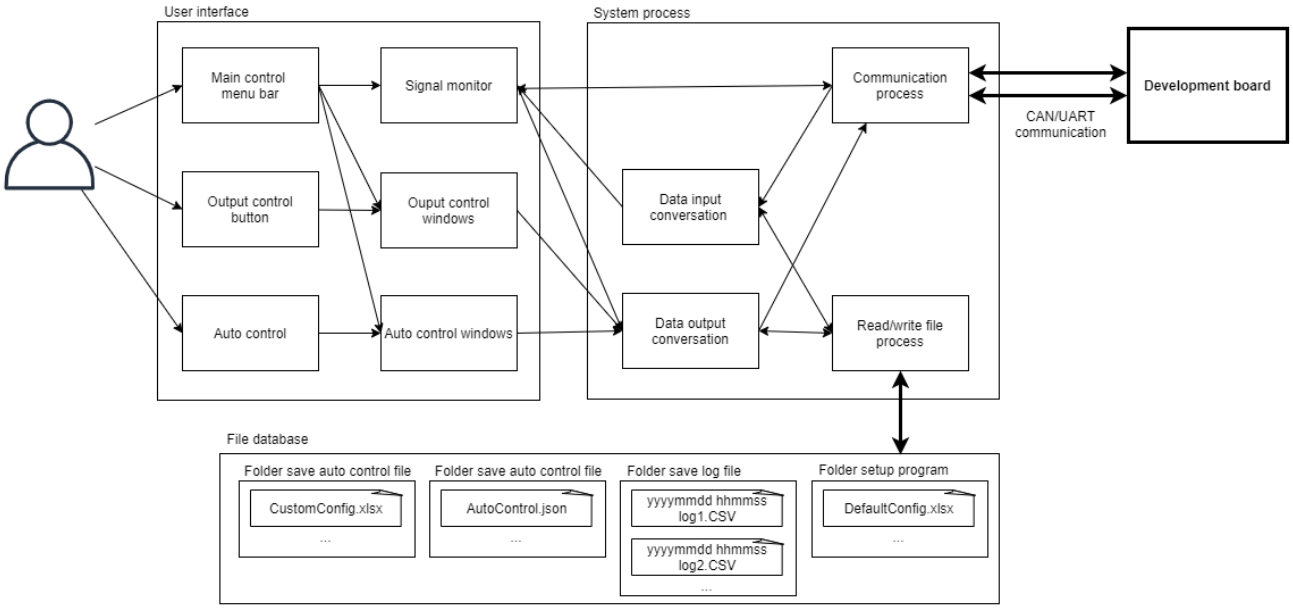


**Figure 3-2 Data flow diagram**

## 3.4. Design Guidelines

Programing language: C#

Framework: Windows forms

Environment design tools: Visual studio (2019)

Database storage: xlsx file

Environment using: extract file, open by icon application