

Coisa

10/11/2025



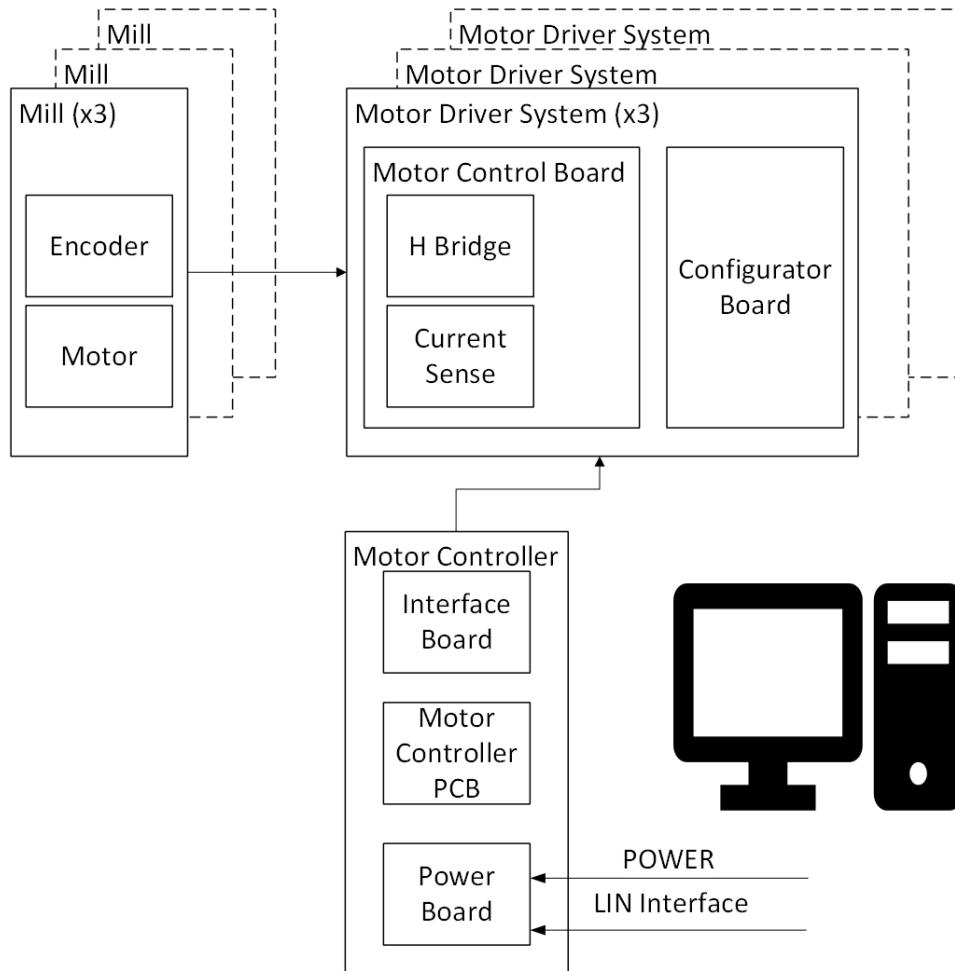


- 1 Goals and Timeline
- 2 PC control software
- 3 Physical system

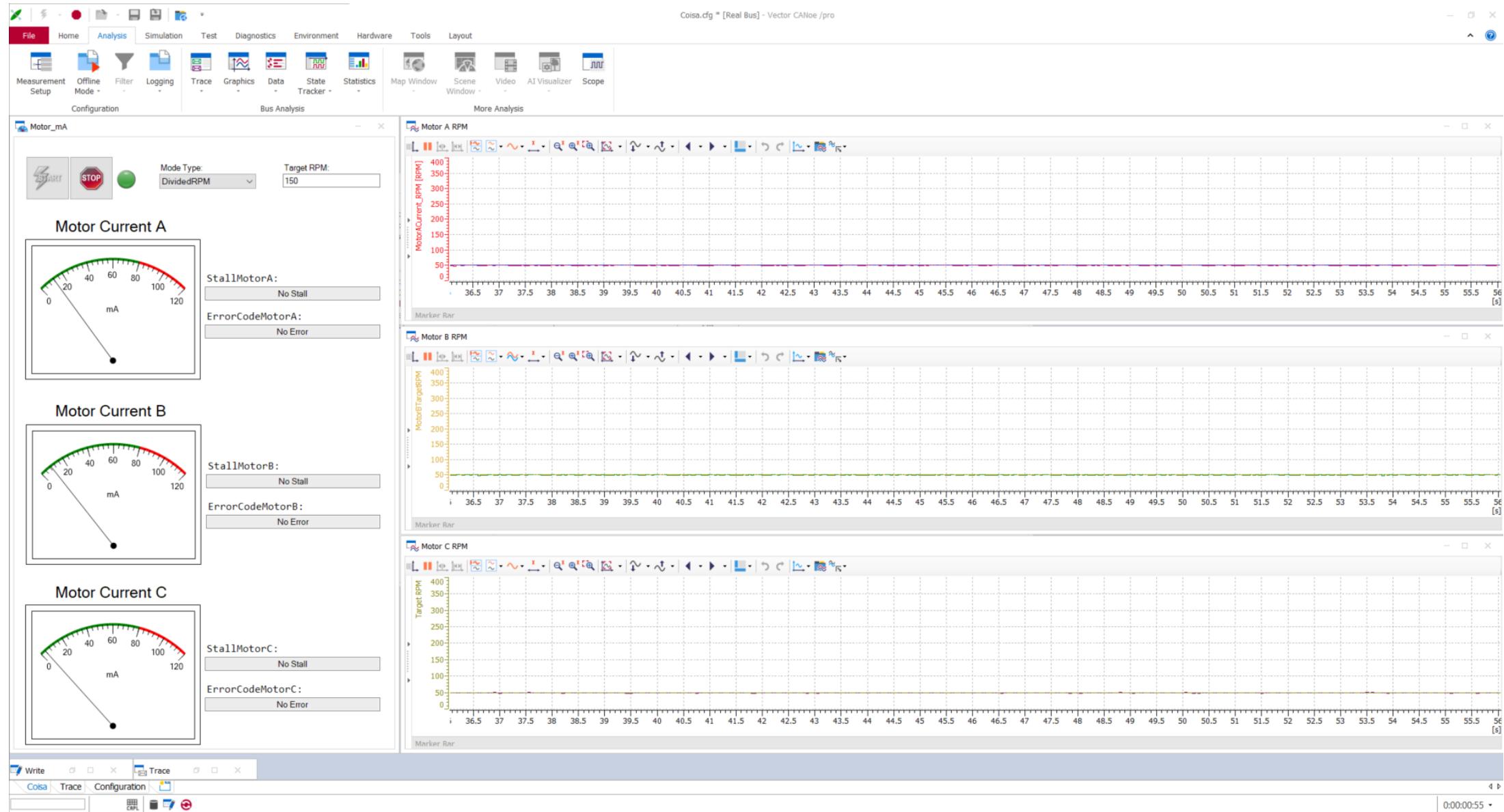
Lessons learned

- Coisa shall present some type of physical movement;
- A user shall be able to interact with Coisa;
- Coisa shall attract the attention;
- Coisa shall present SWJ capabilities.





- The visitor is invited to touch the mills to test the system response;
- PC controls the high level behavior, mills interaction;
- The motor controller controls each mill individually to a setpoint of speed.

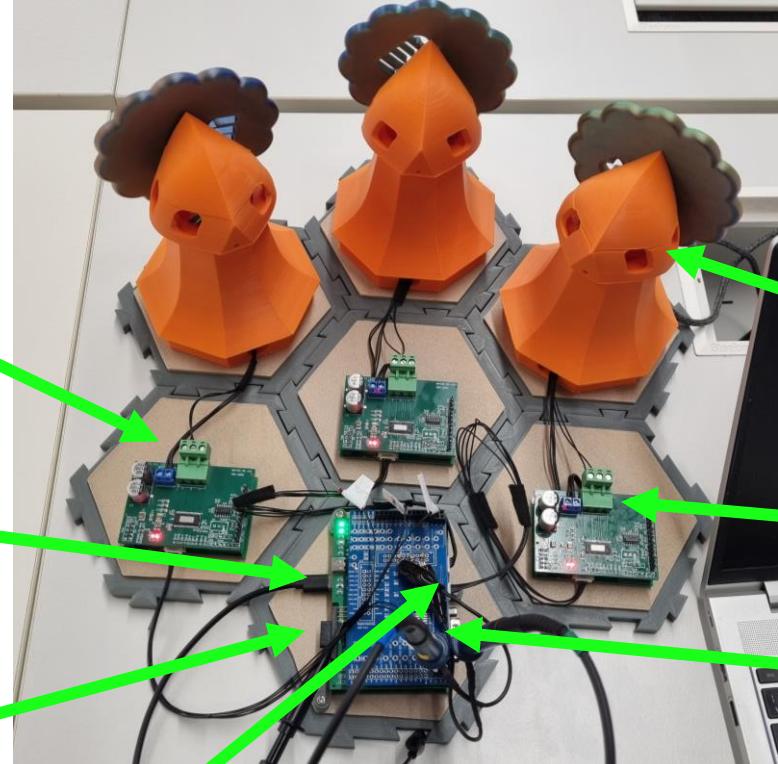


Motor connection
2 cables

USB on the bottom board
Leave middle one disconnected
(From USB adapter)
⚠️ Don't power from PC

Lin connection
From CANOE Adapter CHA

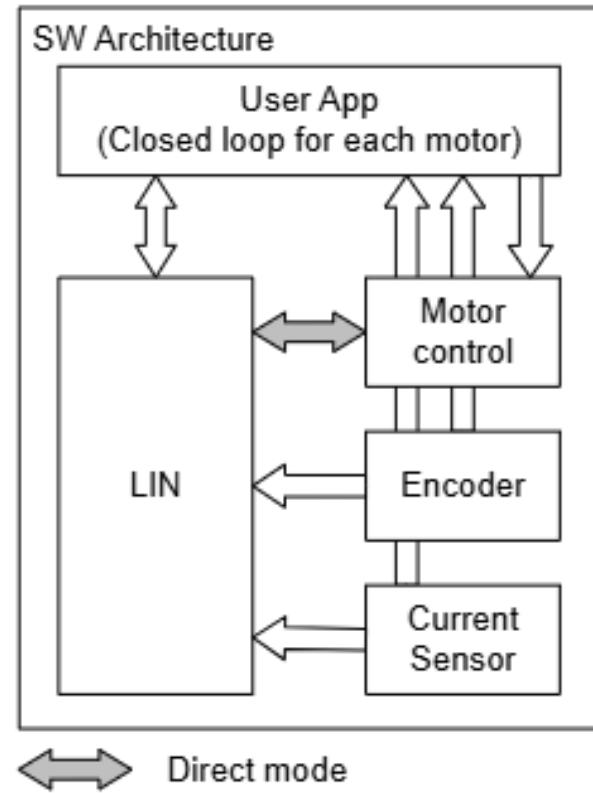
Motors A to C labeled

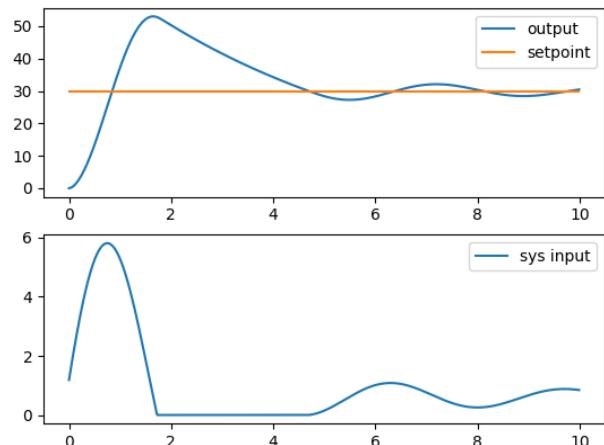
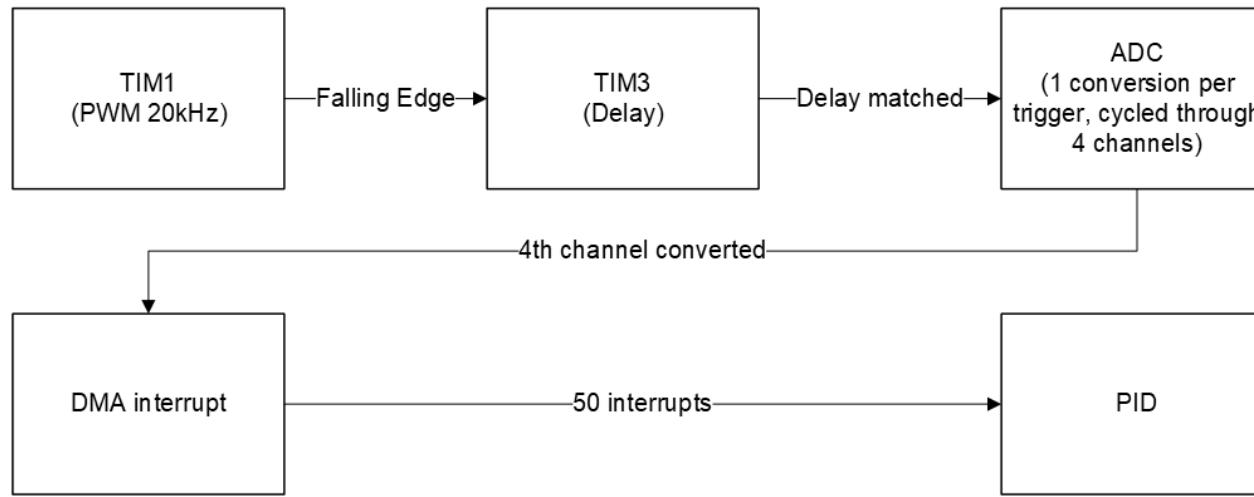


Mills

Motor Driver

Motor Controller





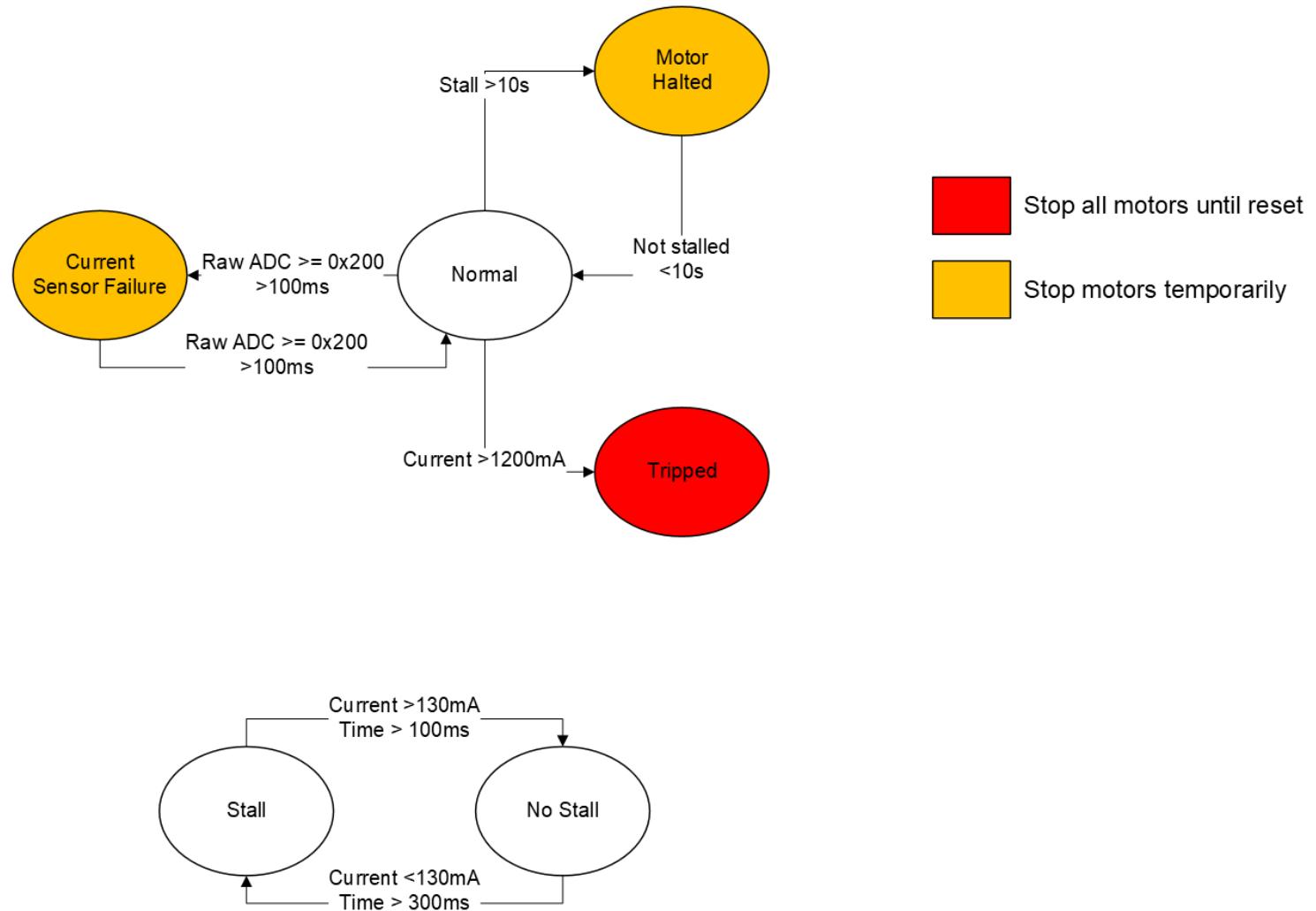
Screenshot of a Python workspace showing a file structure and a script named `test_pid.py`:

```

Folder as Workspace
  pid
    Figure_1.png
    pid.c
    pid.h
    pid_controller.dll
    test_pid.py

test_pid.py
1  """
2   Compilation command to generate dll (cygwin64 in windows)
3   C:\cygwin64\bin\gcc -shared pid.c -o pid_controller.dll -Wl,--add-stdcall-alias -D __PID_TEST__
4
5   This saved me hours of work!
6   https://stackoverflow.com/questions/59330863/cant-import-dll-module-in-python
7
8   For the motor model
9   https://www.monolithicpower.com/en/learning/mpscholar/electric-motors/dc-motors/fundamentals
10  https://ctms.engin.umich.edu/CTMS/index.php?example=MotorSpeed&section=SystemModeling
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```

The script contains comments and code related to PID control and motor modeling.



- Hardware
 - Usage of protection mechanisms.



Thank you for your
attention!