ST Robotics

HELP! An error message!

Getting started

>START NOT DEFINED! ABORTED
Your keyswitch is in cold start position. If you already have a project in the controller simply turn the key to warm start and press reset. If you have not yet started programming then enter ROBOFORTH then turn the key to warm start. After you have programmed something enter USAVE to save your program to controller flash memory.
If your keyswitch is not in the cold start position then your program may be corrupted. In that case switch it to the cold start position, press reset then enter ROBOFORTH and turn back to warm start.

On loading a project or reloading the ed2 text using the red down-arrow:

>| >>>>>>>XXXX NOT DEFINED!   ABORTED
and a dialog box that says >expected with an OK button.
(where XXXX is just an example)
Click the OK box and you see
>IOFLAG COSET
>

This is because a word you have used in your text file was not defined already. Perhaps it is mis-spelled. Try to find the word in your text file and correct it.

If the word that is undefined is a word after a colon, for example : NEWPART but you get
NEWPART UNDEFINED! ABORT
then the most likely reason is a missing semi-colon from your previous definition. The system is still in compile mode when it got to your new word. For example:
: SETUP
words
words
missing semi-colon
: NEWPART
etc

>| >>>>>>>> ABORTED
>
but no reason given. also a dialog box that says >expected with an OK button.
The most probable reason is a stack underflow resulting from an improper use of loop words, or a missing loop word, for example UNTIL with no BEGIN.
You can see better where the error occurs like this: go to settings, configuration and un-check hide mode. Now load the file again. If the error comes right after a word like UNTIL or LOOP or THEN then that is the reason – missing BEGIN or missing DO or missing IF.

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While using the robot

Using RUN or any word that contains RUN you get
ILLEGAL! ABORTED
or
STACK UNDERFLOW ABORTED
You must select a route first. Either type its name now or make sure the name of the route is in your code.

Too tight line x ABORTED

See the RoboForth manual, section 7.2.6. If two lines are right close to each other in coordinate values the DSP can not change the direction in the time allowed at the SPEED and ACCEL values given. Simply reduce SPEED or increase ACCEL and try again. There is a word ADJUST which reduces speed automatically to a value that works.

If you have a SPEED value embedded in the route as a function then ADJUST will not work. It will hang and you need to press escape to get out. Your only recourse is to edit the speed values in the route or increase the value of ACCEL.

Another recourse is to list the route and see if two lines are very close to each other in values and maybe edit those two positions further apart.

You might possibly by mistake have two lines next to each other one being a duplicate of the other. This can never work. Delete one of them.

STOP BUTTON PRESSED but it wasn't. Check the jack in the rear of the controller.

ENCODER-STEPPER MISMATCH AXES n n n
Where n n n is a list of the axes which failed.
If all the axes have failed then maybe you didn't type START at the beginning, or the sensor cable is not properly plugged into the robot.

One or more axes could be a result of:
collision, obviously
running too fast – reduce the value of SPEED and ACCEL. If you lose track of what SPEED or ACCEL you have then try NORMAL or start afresh with START CALIBRATE
tolerances too tight – type WHERE and compare the top and bottom lines. The top line is the target position and the bottom line is where the encoders think the robot is.
If there is a difference of 8 or more for an R17 or more than 50 for an R12 it could be all you need is to increase the tolerances. The tolerance for each axis is in an array ENCTOLS as follows
ENCTOLS – the waist
ENCTOLS 2+ - shoulder
ENCTOLS 4 + - elbow
ENCTOLS 8 + - hand and wrist

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Suppose you had ENCODER-STEPPER MISMATCH AXES 2
This is the shoulder encoder complaining. Suppose you see that the difference between the top and bottom lines for the encoder is 12. This is acceptable. Enter
ENCTOLS 2+ ?
What is the value? Suppose it is 10. Then the actual error exceeds the tolerance. Increase the tolerance to, say, 20
20 ENCTOLS 2+ !
similarly for the other axes. (note R12 values will be much larger than R17 values)

ENCODER-STEPPER MISMATCH AXES

And no axes given.
This means the error was fleeting and less than the tolerance by the time the report was given. Again enter WHERE and see if one axis is close to the tolerance.

For other errors type WWW. This reports an error number that you can look up in the RoboForth manual, section 11.2

Run file too short

When loading a project you get this message. This is the reason why: when you shut down RobWin and there is an unsaved data it tries one last communication with the controller. If the controller is switched off it can save the run file back with length zero.

What to do: If you did a USAVE before you switched off the controller then the good news is the data is in the controller. Switch back on, run RobWin but do not load a project. Find the file DECOMP on the disk, or download from strobotics.com downloads. Choose file, Download file and choose this file. When it has loaded type
DECOMP
This re-creates the ed1 text file in the edit buffer at location EDBUF. There are now two memory areas you can save back to disk. The memory bank, start address and length are given by the recovery program.

First save the ed1 file as e.g. tem.ED1 using file, save binary. Enter bank (0), start (2D00) and length as given by DECOMP. Write the full file name e.g. tem.ED1 in the text box and ignore the note about file type .RAM

Then save the run file using file, save binary. Enter bank (1), start (0) and length as given by DECOMP. Write the file name in the dialog box e.g. tem but with NO extension, just tem. This will be saved as tem.RAM

Finally use Windows explorer to change the extension of tem.RAM to tem.RUN

If you still have the original ed2 file then copy it to tem.ed2 using an editor or by making a copy and changing the name of the copy to tem.ed2

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