SPEED DREAMS ROBOT PROGRAMMING

Speed Dreams Robot Framework

Installation of the Files for a new Robot

Tutorial

Status: Top secrete - Pre view – for your eyes only

Release 0.00.000
from: 2011-10-16

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1 Introduction

The Speed Dreams Robot Framework was developed to simplify the coding of a Speed Dreams Robot. The files needed have to be installed into your Speed Dreams source code to become part of the project. In this tutorial we will go through the list of things step by step.

Talking about the different topics we have to distinguish between the Robot Framework and the FrameworkRobot. If we use Robot Framework we mean the files that contain the code for the set of features provided. But if we want to use the framework we have to create a robot. You will use your own name for the robot but writing the tutorial I do not know what name it will be. So I will talk about FrameworkRobot if I should use your robot name.

Using the Robot Framework I decided to use addisco as name for my instance of a robot. It will become part of the Speed Dreams distribution later. So you will have two instances of a robot based on the Robot Framework. This allows you to compare your code changes against an unchanged robot. If we talk about addisco we will mean a robot without changes to the provided Robot Framework code and using FrameworkRobot we will mean the modified robot that has your own robot name.

1.1 Requirements

You want to program a Speed Dreams Robot, so we assume you have installed the Speed Dreams Source Package. Speed Dreams is available for Windows and for Linux. In both cases the build system used is CMake. This makes it possible to have only one set of source files for the Speed Dreams Robot Framework..

The file set you should start from is contained in FrameworkRobot.zip. You can download it from www.wdbee-AoRP.de.

2 Installation

A Speed Dreams Source Code Package can be installed in different folders on your computer. Therefore I cannot say go to folder XYZ and do what should be done. As work around we will use the others robots folders as reference.

To find the place where we should start look for the folder of the simplix robot in the source tree of your Speed Dreams installation:

...\src\drivers\simplix

Beside a lot of other files it should contain a sub folder src and a file called CMakeLists.txt. And here we go:

- Create a folder for your robot

It should be ...\src\drivers\FrameworkRobot and instead of FrameworkRobot you should use your robot name.

- Copy the content of the FrameworkRobot.zip into this folder

Now you should have a file "...\src\drivers\FrameworkRobot\CMakeLists.txt" and a sub folder "...\src\drivers\FrameworkRobot\src". To make the Robot Framework know about your robot name you have to replace the name FrameworkRobot used as place holder in the file "...\src\drivers\FrameworkRobot\CMakeLists.txt". Open the file with a text editor search for FrameworkRobot and replace it by your robot name.

- Rename the robot in SET(ROBOT_NAME "FrameworkRobot")

Now the folder where the files are located in the Speed Dreams Source tree drivers folder has the same name as the ROBOT_NAME set in "...\FrameworkRobot\CMakeLists.txt".

To connect the new robot to the build system you have to add it to the list of robots. Go to the drivers folder in the source tree and open the file "...\drivers\CMakeLists.txt". This is another CMake file that was installed with the Speed Dreams Installation. Here you will find a list of robots that is grouped to two different lists, the official robots as simplix and usr and the unofficial like hymie or bt. Here you have to add a line for your robot name. If you used the OPTION_OFFICIAL_ONLY switch while installation it has to be in the section of the official list. As we do not know here we do it in the section where the simplix is. But instead of FrameworkRobot use your own robot name.

- Add the line "ADD_SUBDIRECTORY(FrameworkRobot)"

For developers working on the Speed Dreams code we got an issue here. We have to change the file "...\drivers\CMakeLists.txt" and if you commit changes you should never commit this local version of the file.

The following is stuff as usual for all the robots contained in Speed Dreams.

A robot uses a robot setup file. Initially it is located in the src folder of the robot. Rename the file "...\src\drivers\FrameworkRobot\src\FrameworkRobot.xml" to your robot name and then open it and rename the robot in the params line. To make sure you will recognise your driver in the selection lists you should rename the driver as well.

- `Rename "...\src\drivers\FrameworkRobot\src\FrameworkRobot.xml"`
- `Rename <params name="FrameworkRobot" type="robotdef">`
- `Rename <attstr name="name" val=" FrameworkRobot 0"></attstr>`

The car that is used for the driver is set in the robot setup file as well. Initially you should find the reference car. You can change it to another car. If you change it you will have to setup a car type folder for the car.

- setup car type folder like "...\FrameworkRobot\src\ref-boxer-gt3-rs-2010"

In the car type folder there should be a default car setup file. For the initially used car it is contained and you can use it as template. Keep in mind that you will have to change the name of the private section to match your robot name. In this file you can change parameters that are defined in the car type setup file as it was done for the brake balance in the template file.

- Rename private section in default.xml "FrameworkRobot private"
- Adjust parameters if wanted (i.e. brake balance)

If wanted you can add more drivers as well. The first driver defined is the driver with the index 0. See the template file for examples, there are some additional drivers but the lines are commented out. For each driver index defined in the robot setup file there should be a driver folder named as the index number, the first gets the folder "0" the second the "1" and so on. In the driver folders there can be files that should be used for the car as replacement of the files stored in the Speed Dreams car data folder. As example you find the texture file for the reference car modified with the text "Speed Dreams Robot Framework" at the sides. A modified logo file for the pit can be used as well. All the texture files should be PNG files, as this is assumed in the CMake files.

If you added another car or additional drivers, you have to add it to the file "...\FrameworkRobot\CMakeLists.txt". In example for a second driver using the sc-boxer-96 as car it should be SET(ROBOT_SUBDIRS 0 1 ref-boxer-gt3-rs-2010 sc-boxer-96). Here all driver folders and car type folders of the robot are listed.

- Add the additional folders for the driver and the car type
- Add the customized files
- Add the folders to the CMake file "...\FrameworkRobot\CMakeLists.txt"

Now all is prepared for use. Before you compile your Speed Dreams including the new robot you have to rerun CMake to configure and generate the new project files. This should work as you used it for Speed Dreams up till now. After building and installing the project you should find the robot in the runtime tree of Speed Dreams:

"...\speed-dreams-2\lib\drivers\FrameworkRobot\FrameworkRobot .xxx" (xxx = dll or so)

and

"...\speed-dreams-2\data\drivers\FrameworkRobot\...".