OptimusPi_r1 Overseer Class Hierarchy with Change Highlighted (on Bare-metal)

main.c

ArbitratorClass Arbitrator

StandaloneCopterClass StandaloneCopter

SPISlaveClass RPiSPISlave

RingBufferClass<uint8_t> RXByteQueue, TXByteQueue
RingBufferClass<message_s> messageQueue

MessageParserClass messageParser

SPI from RaspberryPi to Overseer

ControlClass Control

TimerClass Timer

ControlClass* Control

StandaloneCopterClass* StandaloneCopter

PIDClass ratePitchPID, rateRollPID, rateYawPID,
attitudePitchPID, attitudeRollPID

RXInterfaceClass RX

OptimusPiInterfaceClass* OptimusPi

MotorInterfaceClass Motors

(N.B. This class is a wrapper of
OptimusPiInterfaceClass to control motors in higher
level)

OptimusPiInterfaceClass* OptimusPi

OptimusPiInterfaceClass OptimusPi

MotorControllerClass motor0, motor1, motor2, motor3

SPIMasterClass SPI1, SPI2

PinInterface IC0, IC1, IC2, IC3, IC4, IC5, IC6, IC7,
AN0, AN1, AN2, AN3, AN4, AN5

InputCaptureClass inputCaptureController

GPIOInputClass GPIOInputController

GPIOOutputClass GPIOOutputController

AHRSClass AHRS: MerayoCalibClass

ExtendedKalmanClass EKF

Eigen Library

QuaternionClass

QuaternionClass quaternion

OptimusPiInterfaceClass* OptimusPi

MPU9150Class MPU

I2CClass I2C

SPI
from Overseer to
BLDC Controllers

I2C
from Overseer
to MPU9150

RPiControlledCopterClass RPiControlledCopter

SPISlaveClass RPiSPISlave

RingBufferClass<uint8_t> RXByteQueue, TXByteQueue
RingBufferClass<message_s> messageQueue

MessageParserClass messageParser

SPI
from RaspberryPi
to Overseer

OptimusPiInterfaceClass OptimusPi

MotorControllerClass motor0, motor1, motor2, motor3

SPIMasterClass SPI1, SPI2

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MPU9150Class MPU

I2CClass I2C

SPI
from Overseer to BLDC
Controllers

I2C
from Overseer
to MPU9150