

# ROS Falcons architecture diagram

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status: DRAFT

**Prefixes:**  
 s\_ ROS service  
 g\_ ROS topic  
 t\_ ROS type  
 c\_ ROS configuration

**Message rules:**  
 all shared message types must be stored centrally in 'falconsMsgs' and use the name of the topic/service counterpart, but with t\_ prefix.

**on coach CPU**  
 (namespace teamX [A B])

Reponsibilities:  
 \* static role assignments  
 \* refbox event relay

simarbiter

refbox

refbox\_listener

g\_refbox\_coach

teamplay\_coach

g\_refbox\_local

g\_coach\_commands

visualize Cambada?

g\_matchlog

main\_logger

All configuration uses local  
 rqt-reconfigure rather than  
 one global configuration topic

Legend:

Motion

Teamplay

World Sensing

Simulator

Robot Communication System

information flow

**on robot CPU**  
 (namespace robotN [1..5])

teamplay\_robot

(multiple nodes)

event\_interface

g\_event

state\_manager

g\_state

reasoning

g\_action

actionhandler

lib\_basic\_actions

lib\_advanced\_actions

goalkeeper()

go\_to\_ball()

...

Teamplay services:

s\_have\_ball()

s\_get\_my\_pos()

s\_get\_ball\_pos()

s\_closest\_to\_ball()

...

worldstate\_main

worldmodel\_interface

worldstate

simteam

all info

simteam

worldmodel

(multiple nodes)

s\_get\_ball\_location

s\_get\_teammembers

s\_set\_member\_location

s\_get\_opponents

s\_set\_obstacle\_location

s\_get\_own\_location

s\_set\_own\_location

s\_get\_ball\_possession

s\_claim\_ball\_possession

c\_worlddomain\_config

c\_worldsharing\_config

frame2pos

simrobot

g\_sim\_position

set\_robotspeed

g\_robotspeed

set\_robotspeed

simrobot

g\_sim\_position

frame2pos

simball

g\_has\_ball

ball\_handling

s\_set\_ballhandling

ball\_handling

diagnostics I/O board

ballhandling motors

ballhandling sensors

kicker

encoders

wheel motors

compass

camera

middleware / firmware library