# A Guide to MOOSIvP Graphical Tools

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***Abstract*— Documentation for some of the MOOS/IvP graphical tools, including pMarineViewer and polyview. Includes instructions for clients using the tools and for programmers who want to use more advanced features.**

## I. Introduction

This document is designed for people who want to use the graphical tools included in MOOS/IvP. It assumes that the reader is familiar with starting and running a MOOS mission and with basic usage of a GUI. In section II, usage and configuration of pMarineViewer is described. In section III, the mission planning tool polyview is described. Finally, some of the examples are shown in the appendices.

## II. pMarineViewer

For programming reference, the collaboration diagram for pMarineViewer is included in Fig. 1.

### A. Configuration

pMarineViewer is launched by calling `pMarineViewer file.moos` (contrary to the usage instructions, no other arguments are read from the command line).

*1) MOOS Configuration Block:* The pMarineViewer MOOS configuration block looks like:

```
//----------------------------------------------
// pMarineViewer config block
{
  AppTick   = 4
  CommsTick = 4

  TIF_FILE  = Default.tif
  VEHICOLOR = nyak200, darkblue
  VEHICOLOR = nyak201, darkgreen
  VEHICOLOR = nyak204, yellow
}
```

TIF_FILE: Optional. Default value is "Default.tif". The path to the image file to be used as the background for the display window.

VEHICOLOR: Optional. Sets the color of object "label". The format of this string is "label, {colorname OR hex[:], ff, ff, ff OR .050, .071, .125}" See Appendix II for a list of color names.

*2) Background Image Data:* Each tif file should have a .info file with the same name. Comment lines are prefaced with "//". This text file can have the following entries:

img_centx and img_centy: The pixel that represents the origin of the image. UNITS UNKNOWN.

img_offset_x and img_offset_y: FEATURE UNDOCUMENTED.

centlat and centlon: The latitude and longitude (in +N and +E degrees) of the center of the image.

### B. Menus and Interface

All pMarineViewer keyboard shortcuts are documented in the menu system. The mouse performs no action in pMarineViewer.

### C. MOOS Variables

*1) Subscribes:* In all of the requests to plot a figure, if a label is given, requesting to plot that label again with different values will cause the figure to move to that position instead of drawing a duplicate.

AIS_REPORT and AIS_REPORT_LOCAL: An AIS report is a string of the form "NAME=name,TYPE=type,X=valx,Y=valy,SPD=speed,HDG=heading. The name value must match the sending community's name. All of the variables except type are required for a valid AIS report.

GRID_CONFIG: Configures pMarineViewer to plot a new XYGrid on the display. The string must be a valid XYGrid configuration string (of the form "polygon_string@unit_string[@initial_value]") A polygon_string is "poly[gon]:[label,LABELNAME:]segment_list". A segment_list is a colon seperated list of comma separated x,y pairs (e.g. 4,5.5:1,2.2). The unit_string is the dimensions of the rectangle to place inside the bounding polygon. It is of the form "x_width,y_width". Usually, these are the same value. The label is used to uniquely identify the grid.

GRID_DELTA: A string to update the grid. It is of the form "label@index,old_val,new_val[,old_utility,new_utility][:index,old_val,new_

VIEW_POLYGON: Plots the specified polygon. The string is a valid XYPolygon initialization string. Polygons can also be of the form "radial:xval,yval,radius,num_points[,snap_value[,LABELNAME]]" to approximate a circle. (An arc can also be plotted, see XYPolygon.cpp for details.)

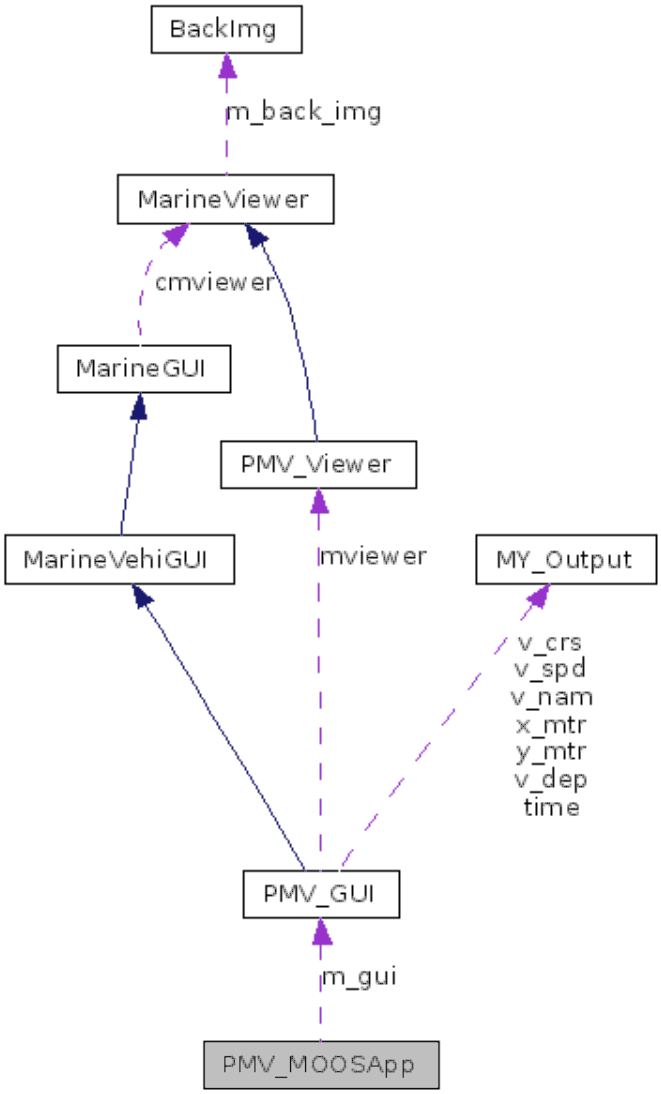


Fig. 1. A collaboration diagram for pMarineViewer

VIEW_SEGLIST: Plots the specified seglist. The string is a valid XYSeglist initialization string. It is of the form "[label,LABELNAME:]segment_list". It can also be of the zigzag form (not described here. See XYSegList.cpp for a description.

VIEW_POINT and VIEW_CIRCLE: VIEW_CIRCLE IS NOT IN SUBSCRIPTION LIST. VIEW_POINT plots a dot. The string is a valid XYCircle initialization string. It is of the form "x_val,y_val,radius[,LABELNAME]".

TRAIL_RESET: Forces pMarineViewer to "forget" the current trails for any vehicles.

*2) Publishes:* No MOOSDB writes are created by pMarineViewer.

## III. POLYVIEW

*A. Configuration*

*B. Menus and Interface*

*C. MOOS Variables*

*1) Subscribes:*

VARIABLE: Description.

*2) Publishes:*

VARIABLE: Description.

[1]

## REFERENCES

[1] Philip E. Agre and David Chapman. What Are Plans For. *Robotics and Autonomous Systems*, 6:17–34, 1990.

## APPENDIX I
## APENDIX EXAMPLE

This is an example in the appendix.

## APPENDIX II
## COLOR NAMES FOR PMARINEVIEWER

antiquewhite, aqua, aquamarine, azure, beige, bisque, black, blanchedalmond, blue, blueviolet, brown, burlywood, cadetblue, chartreuse, chocolate, coral, cornsilk, cornflowerblue, crimson, cyan, darkblue, darkcyan, darkgoldenrod, darkgray, darkgreen, darkkhaki, darkmagenta, darkolivegreen, darkorange, darkorchid, darkred, darksalmon, darkseagreen, darkslateblue, darkslategray, darkturquoise, darkviolet, deeppink, deepskynlue, dimgray, dodgerblue, firenrick, floralwhite, forestgreen, fuchsia, gainsboro, ghostwhite, gold, goldenrod, gray, green, greenyellow, honeydew, hotpink, indianred, indigo, ivory, khaki, lavender, lavenderblush, lawngreen, lemonchiffon, lightblue, lightcoral, lightcyan, lightgoldenrod, lightgray, lightgreen, lightpink, lightsalmon, lightseagreen, lightskyblue, lightslategray, lightsteelblue, lightyellow, lime, limegreen, linen, magenta, maroon, mediumblue, mediumprchid, mediumseagreen, mediumslateblue, mediumspringgreen, mediumturquoise, mediumvioletred, midnightblue, mintcream, mistyrose, moccasin, navajowhite, navy, oldlace, olive, olivedrab, orange, orangered, orchid, palegreen, paleturquoise, palevioletred, papayawhip, peachpuff, pelegoldenrod, peru, pink, plum, powderblue, purple, red, rosybrown, royalblue, saddlebrowm, salmon, sandybrown, seagreen, seashell, sienna, silver, skyblue, slateblue, slategray, snow, springgreen, steelblue, tan, teal, thistle, tomatao, turquoise, violet, wheat, white, whitesmoke, yellow, yellowgreen