# PhotonVisionLib LabVIEW Reference

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# **Function Groups**

# **Packet**

# Packet\_decode\_ByteI8



Decode (or strip out) an unsigned byte from an array of bytes. No conversion or decoding is actually done, the memory is just copied, and the value is cast to the correct type.

#### Inputs

- RawData -- Array of bytes containing the data to be extracted.
- StartByte -- The starting byte number (the first byte starts at 0)

#### Outputs

- Int8\_Value -- Byte in the form of an INT 8 value.
- NextByte -- The starting byte index for the next value (regardless of type).

## Packet\_decode\_Flt64



Decode (or strip out) a double precision floating point value FLT 64. No conversion or decoding is actually done, the memory is just copied, and the value is cast to the correct type.

#### **Inputs**

- RawData -- Array of bytes containing the data to be extracted.
- StartByte -- The starting byte number (the first byte starts at 0)

## Outputs

- FLT64\_Value -- Extracted float 64 (double) value.
- NextByte -- The starting byte index for the next value (regardless of type).

# Packet\_decode\_Int32



Decode (or strip out) a 32 bit integer value from the provided byte array. No conversion or decoding is actually done, the memory is just copied, and the value is cast to the correct type.

#### Inputs

- RawData -- Array of bytes containing the data to be extracted.
- StartByte -- The starting byte number (the first byte starts at 0)

#### Outputs

- INT32\_Value -- Extracted 32 bit integer value.
- NextByte -- The starting byte index for the next value (regardless of type).

# Packet\_decode\_Transform3d



Decode (or strip out) aTransform3d value from the provided byte array. No conversion or decoding is actually done, the memory is just copied, and the value is cast to the correct type.

#### **Inputs**

- RawData -- Array of bytes containing the data to be extracted.
- StartByte -- The starting byte number (the first byte starts at 0)

#### Outputs

- Transform3d -- Extracted Transform3d cluster.
- NextByte -- The starting byte index for the next value (regardless of type).

# Packet\_encode\_ByteI8



Encode (or append) an unsigned byte at the end of an array of bytes. No conversion is actually done, the memory is just copied to the end of the array.

#### Inputs

- RawData In -- Array of bytes to be appended to..
- Int8\_Value -- Byte in the form of an INT 8 value.

#### Outputs

- RawData Out -- Array of bytes containing the appended value.

## Packet\_encode\_FLT64



Encode (or append) a double floating point value (FLT 64) at the end of an array of bytes. No conversion is actually done, the memory is just copied to the end of the array.

#### Inputs

- RawData In -- Array of bytes to be appended to..
- FLT64\_Value -- Double floating point value.

#### Outputs

- RawData Out -- Array of bytes containing the appended value.

#### Packet\_encode\_Int32



Encode (or append) a 32 bit integer at the end of an array of bytes. No conversion is actually done, the memory is just copied to the end of the array.

#### Inputs

- RawData In -- Array of bytes to be appended to..
- In32\_Value -- 32 bit integer the form of an INT 32 value.

# Outputs

- RawData Out -- Array of bytes containing the appended value.

# Packet\_encode\_Transform3d



Encode (or append) a double floating point value (FLT 64) at the end of an array of bytes. No conversion is actually done, the memory is just copied to the end of the array.

## Inputs

- RawData In -- Array of bytes to be appended to..
- FLT64\_Value -- Double floating point value.

## Outputs

- RawData Out -- Array of bytes containing the appended value.

# **PhotonCamera**

# PhotonCamera\_GetDriverMode



Returns whether the camera is in driver mode.

#### Inputs:

- CameraName -- The nickname of the camera (found in the PhotonVision UI).

#### Outputs:

- DriverMode -- Boolean indicating whether the camera is in driver mode.

## PhotonCamera\_GetLEDMode



Returns the current LED mode.

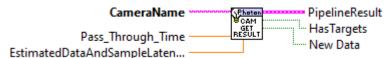
#### Inputs:

- CameraName -- The nickname of the camera (found in the PhotonVision UI).

#### Outputs:

- LedMode -- The current LED mode.

# $Photon Camera\_Get Latest Result$



Returns the latest pipeline result.

#### Inputs:

- cameraName -- The nickname of the camera (found in the PhotonVision UI).
- PassThroughTime -- (Optional. Default: Use FPGA time.) Time. Once time is available from network tables, this won't be needed. (Seconds)
- EstimatedDataAndSampleLatency -- Estimated Network Table packet latency. This is based on the frames per second and other communications latencies. (Optional. Default: 0.050) Once time is available from network tables, this won't be needed.

#### Outputs:

- PipelineResult -- The latest pipeline result data cluster
- HasTargets -- Boolean indicating if any targets were found

# PhotonCamera\_GetPipelineIndex



Returns the active pipeline index.

#### Inputs:

- cameraName -- The nickname of the camera (found in the PhotonVision UI).

#### Outputs:

- PipelineIndex -- Active Pipeline Index

#### PhotonCamera\_IsConnected



Determines if communications to camera is valid.

#### Inputs:

- CameraName -- The nickname of the camera (found in the PhotonVision UI).

#### Outputs:

- IsConnected -- TRUE if communications have been received within the last 0.5 seconds.

# PhotonCamera\_SetDriverMode



Toggles driver mode.

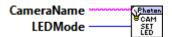
## Inputs:

- cameraName -- The nickname of the camera (found in the PhotonVision UI).
- DriverMode -- Whether to set driver mode.

#### Outputs:

- >none<

# PhotonCamera\_SetLEDMode



Sets the LED mode.

#### Inputs:

- CameraName -- The nickname of the camera (found in the PhotonVision UI).
- LedMod -- The mode to set to.

#### Outputs:

- >none<

# PhotonCamera\_SetPipelineIndex

CameraName PipelineIndex

Allows the user to select the active pipeline index.

#### Inputs:

- cameraName -- The nickname of the camera (found in the PhotonVision UI).
- index The active pipeline index.

#### Outputs:

- >none<

# PhotonCamera\_TakeInputSnapshot

CameraName



Request the camera to save a new image file from the input camera stream with overlays. Images take up space in the filesystem of the PhotonCamera. Calling it frequently will fill up disk space and eventually cause the system to stop working. Clear out images in /opt/photonvision/photonvision\_config/imgSaves frequently to prevent issues.

#### Inputs:

- cameraName -- The nickname of the camera (found in the PhotonVision UI).

#### Outputs:

- >none<

# PhotonCamera\_TakeOutputSnapshot

CameraName



Request the camera to save a new image file from the output stream with overlays. Images take up space in the filesystem of the PhotonCamera. Calling it frequently will fill up disk space and eventually cause the system to stop working. Clear out images in /opt/photonvision/photonvision\_config/imgSaves frequently to prevent issues.

# Inputs:

- Camera Name -- The nickname of the camera (found in the Photon Vision UI).

# Outputs:

- >none<

# **PhotonEstimatedRobotPose**

# PhotonEstimatedRobotPose\_GetAll

Create a new TracedTarget data cluster

#### Inputs:

- Yaw --
- Pitch --
- Area --
- Skew --
- CameraToTarget -- Transform2d
- MinAreaRectCorners -- Array of 4 corners.
- Pose Ambiguity
- Fiducial ID
- Detected Corners

## Outputs:

- TrackedTarget -- Created TrackedTarget cluster.

# ${\bf PhotonEstimatedRobotPose\_New}$

Create a new TracedTarget data cluster

#### Inputs:

- Yaw --
- Pitch --
- Area --

- Skew --
- CameraToTarget -- Transform2d
- MinAreaRectCorners -- Array of 4 corners.
- Pose Ambiguity
- Fiducial ID
- Detected Corners

# Outputs:

- TrackedTarget -- Created TrackedTarget cluster.

# **PhotonPipelineResult**

# PhotonPipelineResult\_CreateFromPacket

RawData PhotonPipelineResult

Internal function to parse the data returned by PhotonCamera\_GetLatestResult.

#### Inputs:

- RawData -- Byte array containing the data to parse.

#### Outputs:

- PipelineResult -- Parsed PipelineResult cluster.

## PhotonPipelineResult\_Equals

PhotonPipelineResult FIRE RESULT RESU

Determines if two PipelineResults are equal.

#### Inputs:

- PipelineResult -- PipelineResult cluster.
- Other PipelineResult -- Other PipelineResult cluster.

#### Outputs:

- Equal -- Returns TRUE, if both pipeline results are equal..

# PhotonPipelineResult\_GetBestTarget

Returns the best target in this pipeline result. If there are no targets, this method will return an empty target. The best target is determined by the target sort mode in the PhotonVision UI.

#### Inputs:

- PipelineResult -- Parsed PipelineResult cluster.

#### Outputs:

- TrackedTarget -- Cluster containing the best target

## PhotonPipelineResult\_GetBestTargetById



Returns the best target in this pipeline result filtered by fiducial ID (April tag numer). If there are no targets, or no targets with this fiducial ID, this method will return an empty target. IF more than 1 targets have the same fiducial ID, the best target is determined by the sort mode in the PhotonVision UI.

#### Inputs:

- PipelineResult -- Parsed PipelineResult cluster.
- Fiducial ID -- The April tag number being searched for.

#### Outputs:

- TrackedTarget -- Cluster containing the best target
- TargetFound -- TRUE if a target matching the search criteria exits.
- TargetIndex -- Index into the targets array of the best target matching the search criteria.

# PhotonPipelineResult\_GetLatency\_Millis



Returns the latency in the pipeline.

#### Inputs:

- PipelineResult -- Parsed PipelineResult cluster.

#### Outputs:

- Latency\_Millis -- The latency in the pipeline.
- TimeStampSec -- Time stamp of packet (FPGA elapsed time) seconds

# PhotonPipelineResult\_GetTargets

PhotonPipelineResult Targets

Returns the targets in this pipeline result. If there are no targets, this method will return an empty target array.

#### Inputs:

- PipelineResult -- Parsed PipelineResult cluster.

#### Outputs:

- Targets -- Array of Target clusters.

# PhotonPipelineResult\_GetTimeStampSecs

PhotonPipelineResult FIFE GET TIME

Returns pipeline packet time stamp

#### Inputs:

- PipelineResult -- Parsed PipelineResult cluster.

#### Outputs:

- TimeStampSec -- Time stamp of packet (FPGA elapsed time) seconds

# PhotonPipelineResult\_HasTargets



Returns whether the pipeline has targets.

#### Inputs:

- PipelineResult -- Parsed PipelineResult cluster.

#### Outputs:

- HasTargets -- Whether the pipeline has targets.

# PhotonPipelineResult\_New



Create a new PhotonPipelineResult cluster.

#### Inputs:

- Latency\_Millis -- Latency, milliseconds
- TrackedTargets -- Array of TracedTarget clusters

#### Outputs:

- PipelineResult -- Parsed PipelineResult cluster.

# $Photon Pipeline Result\_Populate Packet$



Convert a PipelineResult to a Packet array of bytes ready for writing to a Network Table variable.

#### Inputs:

- PipelineResult -- PipelineResult cluster.

#### Outputs:

- Pacet\_RawData -- Byte array containing the encoded PipelineResult.

# PhotonPipelineResult\_SetTimeStampSecs

PhotonPipelineResult
TimeStampSec

| Set |

Returns pipeline packet time stamp

## Inputs:

- PipelineResult -- Parsed PipelineResult cluster.
- TimeStampSec -- Time stamp of packet (FPGA elapsed time) seconds

# Outputs:

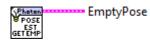
- Out PipelineResult -- Updated PipelineResult cluster.

# **PhotonPoseEstimator**

# ${\bf Photon Pose Estimator\_Calc Difference}$



# PhotonPoseEstimator\_GetEmptyPose



# PhotonPoseEstimator\_GetFieldTags

PhotonPoseEstimator Prose AprilTagFieldLayout

# PhotonPoseEstimator\_GetHighestAmbiguity

PhotonPoseEstimator | Photon | HighestAmbiguity | Pose | SET | GET HA

# PhotonPoseEstimator\_GetLastPose

PhotonPoseEstimator

Pose
EST
GETLST

LastPose

# PhotonPoseEstimator\_GetReferencePose

PhotonPoseEstimator

PhotonPoseEstimator

PhotonPoseEstimator

ReferencePose

EST

GET REF

# PhotonPoseEstimator\_GetRobotToCamera

PhotonPoseEstimator



--- RobotToCamera

# ${\bf PhotonPoseEstimator\_GetStrategy}$

PhotonPoseEstimator •



PhotonPoseStrategy

# PhotonPoseEstimator\_New



Create a new TracedTarget data cluster

#### Inputs:

- Yaw --
- Pitch --
- Area --
- Skew --
- CameraToTarget -- Transform2d
- MinAreaRectCorners -- Array of 4 corners.
- Pose Ambiguity
- Fiducial ID
- Detected Corners

#### Outputs:

- TrackedTarget -- Created TrackedTarget cluster.

# PhotonPoseEstimator\_SetFieldTags

PhotonPoseEstimator

AprilTagFieldLayout

PhotonPoseEstimator

PhotonPoseEstimator

Prose

SEST

SEST

# PhotonPoseEstimator\_SetHighestAmbiguity

PhotonPoseEstimator

HighestAmbiguity

POSE
SET EST
SET HA

#### PhotonPoseEstimator\_SetLastPose

#### PhotonPoseEstimator\_SetLastPose\_Pose2d

PhotonPoseEstimator

Pose
EST
SETUST

PhotonPoseEstimator

## PhotonPoseEstimator\_SetReferencePose

PhotonPoseEstimator

ReferencePose

ReferencePose

PhotonPoseEstimator

PhotonPoseEstimator

Pose

EST

SET REFEREN

# PhotonPoseEstimator\_SetReferencePose\_Pose2d

PhotonPoseEstimator
ReferencePose2D

ReferencePose2D

PhotonPoseEstimator
SEST
SEST SER

# PhotonPoseEstimator\_SetStategy

PhotonPoseEstimator
PhotonPoseStrategy
PhotonPoseStrategy
PhotonPoseEstimator
PhotonPoseEstimator

## PhotonPoseEstimator\_Update

PhotonPoseEstimator

Pose

ST PhotonEstimatedRobotPose

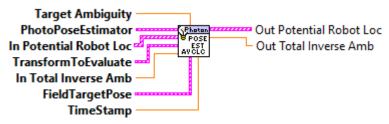
Pos Found

New Data

# PhotonPoseEstimator\_averageBestTargetsStrategy

PhotoPoseEstimator PhotonEstimatedRobotPose
CameraResult PosE Pos Found
PhotonEstimatedRobotPose
VEST Pos Found

# PhotonPoseEstimator\_averageBestTargetsStrategy\_calc



# ${\bf Photon Pose Estimator\_closest To Camera Height Strategy}$

PhotoPoseEstimator

CameraResult

Pose

Find Children

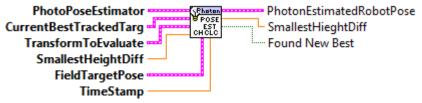
PhotonEstimatedRobotPose

Pose

Pose

Pose Found

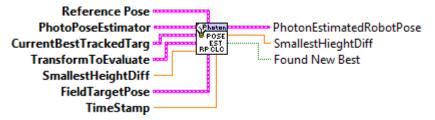
# $Photon Pose Estimator\_closest To Camera Height Strategy\_calc$



# $Photon Pose Estimator\_closest To Reference Pose Strategy$



# $Photon Pose Estimator\_closest To Reference Pose Strategy\_calc$



# ${\bf Photon Pose Estimator\_lowest Ambiguity Strategy}$



# PhotonTrackedTarget

# ${\bf Photon Tracked Target\_Create From Packet}$



Internal function to parse the data for each target returned by PhotonCamera\_GetLatestResult.

#### Inputs:

- RawData -- Byte array containing the data to parse.

## Outputs:

- TrackedTarget -- Parsed TrackedTarget cluster.

## PhotonTrackedTarget\_Equals



Determines if two tracked targets are equal

#### Inputs:

- TrackedTarget -- TrackedTarget cluster.
- OtherTrackedTarget -- Second TrackedTarget cluster.

#### Outputs:

- Area -- Boolean, equals TRUE if both TrackedTargets are the same.

# PhotonTrackedTarget\_GetAltCameraToTarget

TrackedTarget AltCameraToTarget

TRKD

AltCameraToTarget2D

Get CameraToTarget Transform2d from Tracked Target

Inputs:

- TrackedTarget -- Parsed TrackedTarget cluster.

## Outputs:

- CameraToTarget -- Camera to Target Transform2d

# PhotonTrackedTarget\_GetArea

TrackedTarget



Area

Get Area from Tracked Target

#### Inputs:

- TrackedTarget -- Parsed TrackedTarget cluster.

## Outputs:

- Area -- Area value

# PhotonTrackedTarget\_GetBestCameraToTarget

TrackedTarget •



Best Camera To Target
Best Camera To Target 2D

Get CameraToTarget Transform2d from Tracked Target

#### Inputs:

- TrackedTarget -- Parsed TrackedTarget cluster.

#### Outputs:

- CameraToTarget -- Camera to Target Transform2d

# ${\bf Photon Tracked Target\_Get Detected Corners}$

TrackedTarget



■ Detected Corners

Get Detected Corners from Tracked Target

#### Inputs:

- TrackedTarget -- Parsed TrackedTarget cluster.

#### Outputs:

- Detected Corners -- Array of TargetCorner cluster containing detected corners

# PhotonTrackedTarget\_GetFiducialId



Get Area from Tracked Target

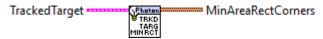
## Inputs:

- TrackedTarget -- Parsed TrackedTarget cluster.

## Outputs:

- Area -- Area value

# $Photon Tracked Target\_Get Min Area Rect Corners \\$



Get Minimum Area Rectagle Corners from Tracked Target

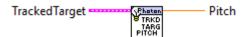
# Inputs:

- TrackedTarget -- Parsed TrackedTarget cluster.

#### Outputs:

- MinAreaRectCorners -- Corners array of TargetCorner cluster

# PhotonTrackedTarget\_GetPitch



Get Pitch from Tracked Target

## Inputs:

- TrackedTarget -- Parsed TrackedTarget cluster.

## Outputs:

- Pitch -- Pitch value

# PhotonTrackedTarget\_GetPoseAmbiguity



Get Area from Tracked Target

## Inputs:

- TrackedTarget -- Parsed TrackedTarget cluster.

#### Outputs:

- Area -- Area value

# $PhotonTrackedTarget\_GetSkew$



Get Skew from Tracked Target

# Inputs:

- TrackedTarget -- Parsed TrackedTarget cluster.

#### Outputs:

- Skew -- Skew value

# PhotonTrackedTarget\_GetYaw



Get Yaw from Tracked Target

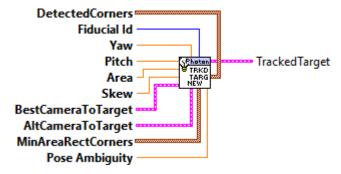
#### Inputs:

- TrackedTarget -- Parsed TrackedTarget cluster.

#### Outputs:

- Yaw -- Yaw value

# PhotonTrackedTarget\_New



Create a new TracedTarget data cluster

#### Inputs:

- Yaw --
- Pitch --
- Area --
- Skew --
- CameraToTarget -- Transform2d
- MinAreaRectCorners -- Array of 4 corners.
- Pose Ambiguity
- Fiducial ID

- Detected Corners

# Outputs:

- TrackedTarget -- Created TrackedTarget cluster.

# PhotonTrackedTarget\_PopulatePacket

TrackedTarget RawData Out

Encode a TrackedTarget cluster into an array of bytes.

## Inputs:

- TrackedTarget -- TrackedTarget cluster.

# Outputs:

- RawDataOut -- Byte array containing the encoded data.

# **PhotonUtils**

# PhotonUtils\_CalculateDistanceToTarget



Algorithm from https://docs.limelightvision.io/en/latest/cs\_estimating\_distance.html Estimates range to a target using the target's elevation. This method can produce more stable results than SolvePNP when well tuned, if the full 6d robot pose is not required. Note that this method requires the camera to have 0 roll (not be skewed clockwise or CCW relative to the floor), and for there to exist a height differential between goal and camera. The larger this differential, the more accurate the distance estimate will be.

Units can be converted using the {@link edu.wpi.first.math.util.Units} class.

#### Inputs:

- CameraHeight\_Meters -- The physical height of the camera off the floor in meters.
- TargetHeightMeters -- The physical height of the target off the floor in meters.

This should be the height of whatever is being targeted (i.e. if the targeting region is set to top, this should be the height of the top of the target).

- CameraPitch\_Radians -- The pitch of the camera from the horizontal plane in radians.

Positive values up.

- TargetPitchRadian -- The pitch of the target in the camera's lens in radians.

Positive values up.

#### Outputs

- DistanceToTarget\_Meters -- The estimated distance to the target in meters.

# PhotonUtils\_EstimateCameraToTarget



Estimates a Transform2d that maps the camera position to the target position, using the robot's gyro. Note that the gyro angle provided \*must\* line up with the field coordinate system -- that is, it should read zero degrees when pointed towards the opposing alliance station, and increase as the robot rotates CCW.

#### Inputs:

- CameraToTargetTranslation -- A Translation2d that encodes the x/y position of the target relative to the camera.
- FieldToTarget -- A Pose2d representing the target position in the field coordinate system.
- GyroAngle -- The current robot gyro angle, likely from odometry.

#### Outputs:

- EstimateCameraToTarget -- A Transform2d that takes us from the camera to the target.

# ${\bf Photon Utils\_Estimate Camera To Target Trans}$



Estimate the Translation2d of the target relative to the camera.

#### Inputs:

- TargetDistance\_Meters -- The distance to the target in meters.
- Yaw -- The observed yaw of the target.

#### Outputs:

- CameraToTarget -- The target's camera-relative translation.

#### PhotonUtils\_EstimateFieldToCamera



Estimates the pose of the camera in the field coordinate system, given the position of the target relative to the camera, and the target relative to the field. This \*only\* tracks the position of the camera, not the position of the robot itself.

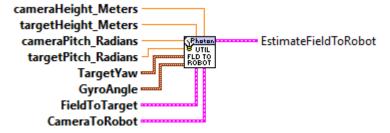
#### Inputs:

- CameraToTarget -- The position of the target relative to the camera.
- FieldToTarget -- The position of the target in the field.

#### Outputs:

- EstimateFieldToCamera -- The position of the camera in the field.

## PhotonUtils\_EstimateFieldToRobot



Estimate the position of the robot in the field.

#### Inputs:

- CameraHeightMeters The physical height of the camera off the floor in meters.
- TargetHeightMeters The physical height of the target off the floor in meters.

This should be the height of whatever is being targeted (i.e. if the targeting region is set to top, this should be the height of the top of the target).

- CameraPitchRadians The pitch of the camera from the horizontal plane in radians. Positive values up.
- TargetPitchRadians The pitch of the target in the camera's lens in radians. Positive values up.

- TargetYaw The observed yaw of the target. Note that this \*must\* be CCW-positive, and Photon returns CW-positive.
- GyroAngle The current robot gyro angle, likely from odometry.
- FieldToTarget A Pose2d representing the target position in the field coordinate system.
- CameraToRobot The position of the robot relative to the camera. If the camera was mounted 3 inches behind the "origin" (usually physical center) of the robot, this would be Transform2d (3 inches, 0 inches, 0 degrees).

#### Outputs

- EstimateFieldToRobot -- The position of the robot in the field.

## PhotonUtils\_EstimateFieldToRobotAprilTag

CameraToTargetTransform3d FieldToRpbotPose3d
FieldRelativeTagPose3d
CameraToRobotTransform3d
FIEDTO
FIEDTO
FOT APPR

Estimates the pose3d of the robot in the field coordinate system, given the pose3d of the fiducial tag, the robot relative to the camera, and the target relative to the camera.

#### nputs:

- CameraToTarget -- Transform3D of the target relative to the camera, returned by PhotonVision
- FieldRelativeTagPose3d -- The field relative pose3d of the target
- CameraToRobot -- Transform3D of the robot relative to the camera. Origin of the robot is defined as the center.

#### Outputs

- FieldToRobot -- Transform3d Robot position relative to the field

# PhotonUtils\_EstimateFieldToRobot\_Alt

CameraToTarget, Phatan EstimateFieldToRobot FieldToTarget FLD TO ROBOT CameraToRobot

Estimates the pose of the robot in the field coordinate system, given the position of the target relative to the camera, the target relative to the field, and the robot relative to the camera.

#### Inputs:

- CameraToTarget -- The position of the target relative to the camera.
- FieldToTarget -- The position of the target in the field.
- CameraToRobot -- The position of the robot relative to the camera. If
  the camera was mounted 3 inches behind the "origin" (usually
  physical center) of the robot, this would be Transform2d(3 inches,
  0 inches, 0 degrees).

#### Outputs:

- EstimateFieldToRobot -- The position of the robot in the field.

## PhotonUtils\_GetDistanceToPose



Returns the distance between two poses

#### Inputs:

- RobotPose -- Pose2d of the robot.
- TargetPose -- Pose2d of the target

#### Outputs

- DistanceToPose -- The calculated distance between the poses.

# PhotonUtils\_GetYawToPose



Returns the yaw between your robot and a target.

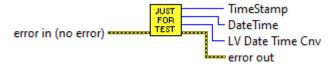
# Inputs:

- RobotPose -- Pose2d of the robot.
- TargetPose -- Pose2d of the target

# Outputs

- YawToPose -- Yaw to the target

# ${\bf Photon Utils\_Test Get Date Time}$



# **TargetCorner**

# TargetCorner\_Equals



Determines if two target corners are equal

#### Inputs:

- TargetCorner -- TargetCorner cluster
- OtherTargetCorner -- TargetConrer cluster to compare

## Outputs:

- Equals -- TRUE if both TargetCorners are equal

# TargetCorner\_GetAll



Get the individual components of a TargetCorner

#### Inputs:

- TargetCorner -- TargetCorner cluster

#### Outputs:

- X --
- Y --

# TargetCorner\_New



Create a new TargetCorner data cluster

# Inputs:

- X --
- Y --

# Outputs:

- TargetCorner -- Created TargetCorner cluster.

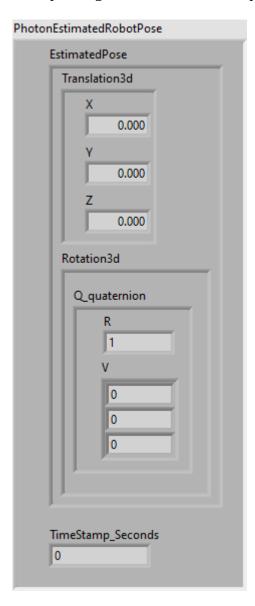
# **Type Definitions**

# **TypeDef**

# TypeDef-PhotonEstimatedRobotPoseType

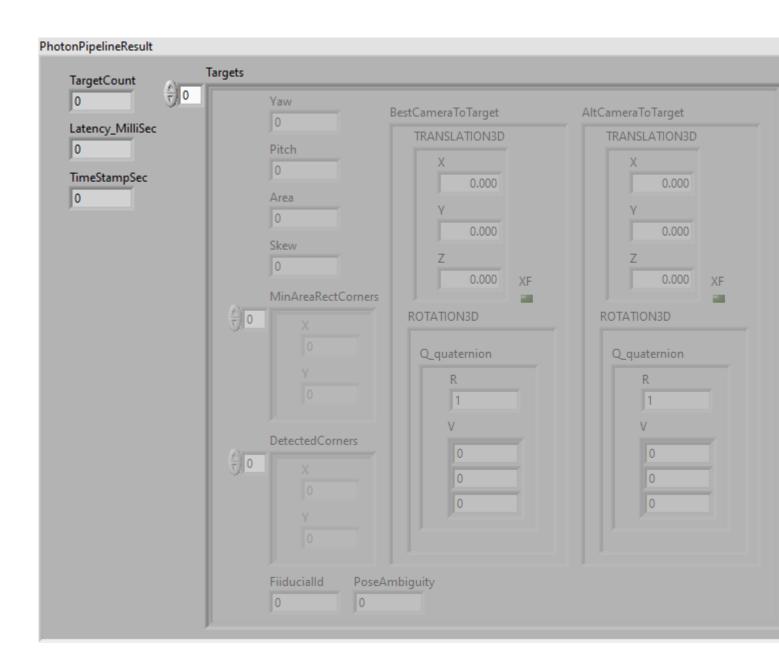


The PhotonPoseEstimator cluster contains data that filters or combines readings from all the fiducials visible at a given timestamp on the field to produce a single robot in field pose, using the strategy set below. Example usage can be found in our apriltagExample example project.



# Type Def-Photon Pipeline Result Type

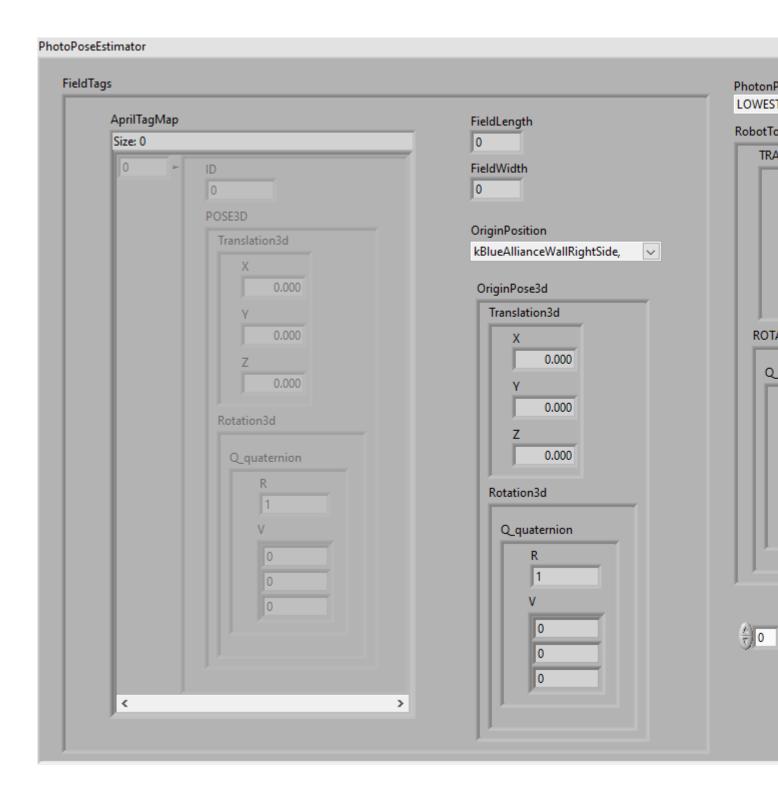




# TypeDef-PhotonPoseEstimatorType

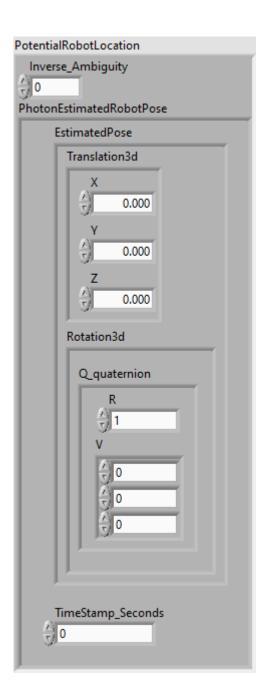


The PhotonPoseEstimator cluster contains data that filters or combines readings from all the fiducials visible at a given timestamp on the field to produce a single robot in field pose, using the strategy set below. Example usage can be found in our apriltagExample example project.



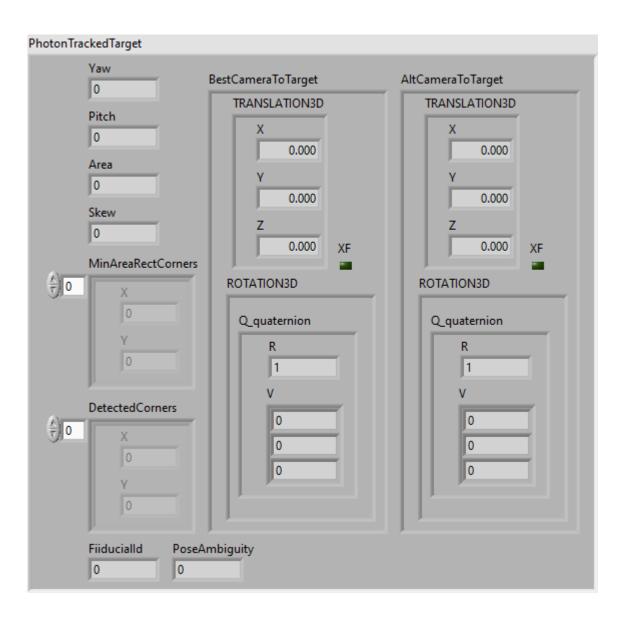
# $Type Def-Photon Pose Estimator\_Potential Robot Location$





# TypeDef-PhotonTrackedTargetType





# TypeDef-TargetCornerType



# **Enumerated Type Definitions**

# **Enum**

# Enum-PhotonPoseStrategy\_ENUM



Position estimation strategies that can be used by the PhotonPoseEstimator VIs.

Values are:

LOWEST\_AMBIGUITY -- Choose the Pose with the lowest ambiguity

CLOSEST\_TO\_CAMERA\_HEIGHT -- Choose the Pose which is closest to the camera height

CLOSEST\_TO\_REFERENCE\_POSE -- Choose the Pose which is closest to a set Reference position

CLOSEST\_TO\_LAST\_POSE -- Choose the Pose which is closest to the last pose calculated

AVERAGE\_BEST\_TARGETS -- Choose the Pose with the lowest ambiguity



# Enum-VisionLEDModeType



