Aim Assist 2D

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4.4 Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode Namespace Reference

Classes

- class AimAssistBase

  Base class for all aim assist classes that handles the setup of the target selector.

4.5 Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.AimLock Namespace Reference

Classes

- class AimLock

  Smoothly rotates the player's aim towards the target. A curve is available to smooth out the rotation and allow some wiggle room.

4.6 Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.Helper Namespace Reference

Classes

- class Cache

  Improve performance by storing which game objects have certain components on them.
- class SelectedTargetStore

  Contains logic that handles the selection of a single target and calling its notification events.
- class **Utils**

  Contains additional logic for the aim assist.

4.7 Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.Helper.Info Namespace Reference

Classes

- class PlayerTransformInfo

  Physics information that returns the player's velocity.

4.8 Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.Magnetism Namespace Reference

Classes

- class Magnetism

  Compensates for the player's movement by loosely following the target while it's still in assist range.

4.9 Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.Model Namespace Reference

Classes

- struct AimAssistResult

  Contains output from the aim assist calculations.

4.10 Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.PrecisionAim Namespace Reference

Classes

- class PrecisionAim

  Slows down the look input using a curve to ease up aim on the target.

4.11 Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.Target Namespace Reference

Classes

- class AimAssistTarget

  GameObjects with this component can be targeted by the Aim Assist component to adjust the aim.

4.12 Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.TargetSelector Namespace Reference

Classes

- class TargetSelector

  Finds and selects a given target for the aim assists and invokes events on the target if any are defined.
- class TargetSelectorDebugDrawer

  Debug drawer that shows what the target selector sees in the Scene view.

4.13 Assets Namespace Reference

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Classes

- class AngleLimiter

  Limits the angle considering the addition it will receive.

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4.22 Assets.Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.↩ PrecisionAim Namespace Reference

Classes

- struct PrecisionAimInput

4.23 Assets.Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.Target↩ Selector Namespace Reference

Classes

- class NotifyTargetFound

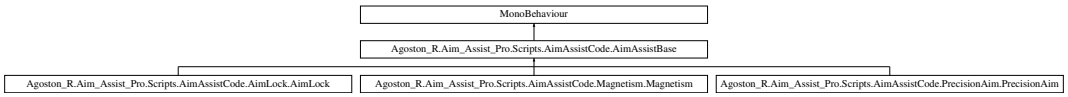
Chapter 5

Class Documentation

5.1 Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.AimAssistBase Class Reference

Base class for all aim assist classes that handles the setup of the target selector.

Inheritance diagram for Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.AimAssistBase:



Public Attributes

- bool **aimAssistEnabled** = true

Protected Member Functions

- virtual void **Awake** ()

Properties

- AimAssistTarget **Target** `[get]`

  The current target available from the selector
- float **AimAssistRadius** `[get]`

  The radius of the selector in metres
- float **NearClipDistance** `[get]`

  The near clip distance of the selector
- float **FarClipDistance** `[get]`

  The far clip distance of the selector
- Vector2 **AimDirection** `[get]`

  The aim direction vector of the gun. Adjusted for flipping and using either the X or Y axis to aim.
- Transform Gun `[get]`

  The aim origin, or gun of the aim assist. Can be the player itself, or a gun object on the player.
- NotifyTargetFound **OnTargetFound** `[get]`

  Event that triggers once on a target is found.
- NotifyTargetFound **OnTargetLost** `[get]`

  Event that triggers once a target is lost.

5.1.1 Detailed Description

Base class for all aim assist classes that handles the setup of the target selector.

5.1.2 Property Documentation

5.1.2.1 Gun

`Transform Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.AimAssistBase.Gun [get]`

The aim origin, or gun of the aim assist. Can be the player itself, or a gun object on the player.

It will be rotated as the aim assist takes effect.

The documentation for this class was generated from the following file:

- AimAssistBase.cs

5.2 Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.Model.AimAssistResult Struct Reference

Contains output from the aim assist calculations.

Public Member Functions

- **AimAssistResult** (float rotationAdditionInDegrees)

Properties

- float **RotationAdditionInDegrees** `[get]`

  The rotation addition calculated, in degrees.
- Vector3 **RotationAddition** `[get]`

  The rotation addition in degrees, that is represented along the forward Z axis.
- static AimAssistResult **Empty** `[get]`

  Returns an empty result. You can add this to your rotations as if they were actual populated values and they'll make no difference.

5.2.1 Detailed Description

Contains output from the aim assist calculations.

The values are unclamped - they are additions. When assigning to properties with a limit like the camera pitch, the resulting value has to be clamped before assigning to the camera pitch.

The result is valid for one frame, when it is calculated. Do not store the data as it needs to be updated every frame.

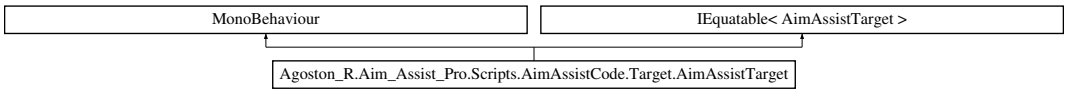
The documentation for this struct was generated from the following file:

- Model/AimAssistResult.cs

5.3 Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.Target.AimAssistTarget Class Reference

GameObjects with this component can be targeted by the Aim Assist component to adjust the aim.

Inheritance diagram for Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.Target.AimAssistTarget:



Public Member Functions

- bool **Equals** (AimAssistTarget other)

Public Attributes

- readonly UnityEvent TargetSelected = new UnityEvent()

  Can be invoked when the target is picked up by the aim assist.
- readonly UnityEvent **TargetLost** = new UnityEvent()

  Invoked when the target is no longer picked up by the aim assist.

5.3.1 Detailed Description

GameObjects with this component can be targeted by the Aim Assist component to adjust the aim.

5.3.2 Member Data Documentation

5.3.2.1 TargetSelected

```
readonly UnityEvent Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.Target.AimAssistTarget.↩
TargetSelected = new UnityEvent()
```

Can be invoked when the target is picked up by the aim assist.

Invoked once when the target is picked up but is not repeatedly invoked while the aim assist lasts.

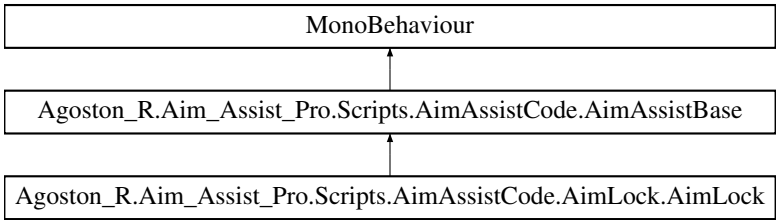
The documentation for this class was generated from the following file:

- Target/AimAssistTarget.cs

5.4 Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.AimLock.AimLock Class Reference

Smoothly rotates the player's aim towards the target. A curve is available to smooth out the rotation and allow some wiggle room.

Inheritance diagram for Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.AimLock.AimLock:



Public Member Functions

- AimAssistResult AssistAim ()

  Smoothly snaps aim to the target's position, at its center.

Public Attributes

- float **timeToAim** = 0.8f
- bool **enableAngularVelocityCurve** = true
- AnimationCurve **angularVelocityCurve**
- float **angleLimit** = 89f

Additional Inherited Members

5.4.1 Detailed Description

Smoothly rotates the player's aim towards the target. A curve is available to smooth out the rotation and allow some wiggle room.

5.4.2 Member Function Documentation

5.4.2.1 AssistAim()

```
AimAssistResult Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.AimLock.AimLock.AssistAim ( )
```

Smoothly snaps aim to the target's position, at its center.

Returns the needed adjustment in degrees for the rotation. This adjustment is an addition - you need to add it to your Z axis rotations.

The documentation for this class was generated from the following file:

- AimLock/AimLock.cs

5.5 Assets.Agoston_R.Aim_Assist_2D.Scripts.AimAssistCode.Helper.↩ AngleLimiter Class Reference

Limits the angle considering the addition it will receive.

Public Member Functions

- bool IsRotationOutsideLimit (float addition, float angleLimit, float angle)

  Limit the angle considering the addition.

5.5.1 Detailed Description

Limits the angle considering the addition it will receive.

Converts degrees over 180 to negatives.

5.5.2 Member Function Documentation

5.5.2.1 IsRotationOutsideLimit()

```
bool Assets.Agoston_R.Aim_Assist_2D.Scripts.AimAssistCode.Helper.AngleLimiter.IsRotation↩
OutsideLimit (
            float addition,
            float angleLimit,
            float angle )
```

Limit the angle considering the addition.

Parameters

addition	The addition the angle will receive
angleLimit	The limit for the angle + addition
angle	The angle whom we'll increase with the addition

Returns

If the angle + addition is outside of the limit.

The documentation for this class was generated from the following file:

- Helper/AngleLimiter.cs

5.6 Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.Helper.Cache< T > Class Template Reference

Improve performance by storing which game objects have certain components on them.

Public Member Functions

- void RegisterItem (T item)

  Registers a new item to the cache
- bool IsEmpty ()

  Check whether the store is empty
- void StoreItems (IEnumerable< T > items)

  Replace the store with the given elements.
- ICollection< T > FindAll ()

  Returns the elements stored in the cache in a readonly fashion.
- bool RemoveItem (T item)

  Remove the given item if it is in the store.
- T FindOrInsert (Component obj)

  Tries to find the given component on the added object and saves it if not found in storage.
- void **Purge** ()

  Clear all items from the store.

Properties

- static Cache< T > **Instance** `[get]`

5.6.1 Detailed Description

Improve performance by storing which game objects have certain components on them.

Cuts down on GetComponent calls and queries.

Template Parameters

T	Type of component stored for a given game object

Type Constraints

T* : *Component

5.6.2 Member Function Documentation

5.6.2.1 FindAll()

```
ICollection< T > Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.Helper.Cache< T >.FindAll ( )
```

Returns the elements stored in the cache in a readonly fashion.

Returns

the elements of the cache

5.6.2.2 FindOrInsert()

```
T Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.Helper.Cache< T >.FindOrInsert (
            Component obj )
```

Tries to find the given component on the added object and saves it if not found in storage.

If there's no T component on the object in question, it stores the null and will return that later.

Parameters

obj	the object in question whom we check for the T component

Returns

the stored component if already present, the found component if present or null.

5.6.2.3 IsEmpty()

```
bool Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.Helper.Cache< T >.IsEmpty ( )
```

Check whether the store is empty

Returns

true if the store has no elements inside, false otherwise

5.6.2.4 RegisterItem()

```
void Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.Helper.Cache< T >.RegisterItem (
            T item )
```

Registers a new item to the cache

HAS TO BE CALLED EVERY TIME a new item of type T has been instantiated to the scene.

Parameters

item	item to add

5.6.2.5 RemoveItem()

```
bool Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.Helper.Cache< T >.RemoveItem (
            T item )
```

Remove the given item if it is in the store.

Parameters

item	item to remove

Returns

true if the item is found and removed, false otherwise.

5.6.2.6 StoreItems()

```
void Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.Helper.Cache< T >.StoreItems (
            IEnumerable< T > items )
```

Replace the store with the given elements.

Parameters

items	elements to add to the store

The documentation for this class was generated from the following file:

- Helper/Cache.cs

5.7 ForwardDirectionCalculator Class Reference

Calculates the forward axis of a transform, based on the enum it receives.

Public Member Functions

- Vector3 CalculateForwardLocalSpace (ForwardDirection dir, bool isFlipped)

  Calculates the forward direction in local space.

5.7.1 Detailed Description

Calculates the forward axis of a transform, based on the enum it receives.

5.7.2 Member Function Documentation

5.7.2.1 CalculateForwardLocalSpace()

```
Vector3 ForwardDirectionCalculator.CalculateForwardLocalSpace (
            ForwardDirection dir,
            bool isFlipped )
```

Calculates the forward direction in local space.

Parameters

dir	The sepected enum for forward direction.
isFlipped	Whether the aim is flipped.

Returns

The aim's direction in local space.

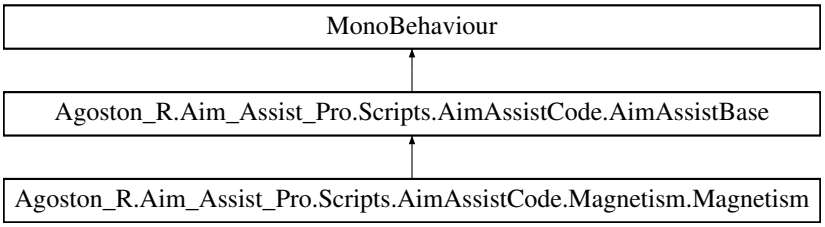
The documentation for this class was generated from the following file:

- TargetSelector/ForwardDirectionCalculator.cs

5.8 Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.Magnetism.↩ Magnetism Class Reference

Compensates for the player's movement by loosely following the target while it's still in assist range.

Inheritance diagram for Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.Magnetism.Magnetism:



Public Member Functions

- AimAssistResult AssistAim ()

  Calculates the aim assist.

Public Attributes

- float **smoothnessAwayFromTarget** = 1.09f
- float **smoothnessTowardsTarget** = 2f
- float **angleLimit** = 89f

Additional Inherited Members

5.8.1 Detailed Description

Compensates for the player's movement by loosely following the target while it's still in assist range.

5.8.2 Member Function Documentation

5.8.2.1 AssistAim()

```
AimAssistResult Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.Magnetism.Magnetism.AssistAim (
)
```

Calculates the aim assist.

The result is a rotation addition in degrees, that you'll have to add to your Z axis rotations.

Returns

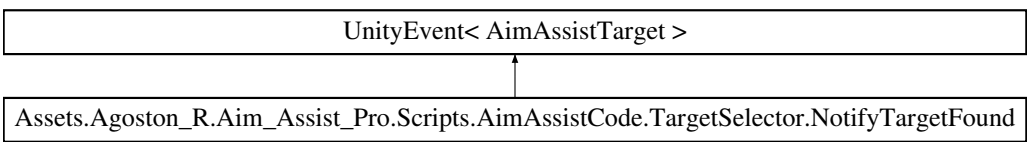
the aim assist result

The documentation for this class was generated from the following file:

- Magnetism/Magnetism.cs

5.9 Assets.Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.TargetSelector.NotifyTargetFound Class Reference

Inheritance diagram for Assets.Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.TargetSelector.NotifyTargetFound:



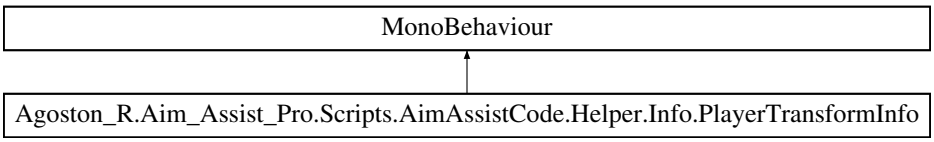
The documentation for this class was generated from the following file:

- TargetSelector/NotifyTargetFound.cs

5.10 Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.Helper.Info.↩ PlayerTransformInfo Class Reference

Physics information that returns the player's velocity.

Inheritance diagram for Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.Helper.Info.PlayerTransformInfo:



Properties

- Transform **PlayerTransform** `[get, set]`
- Vector3 **Velocity** `[get]`

  The Player's velocity

5.10.1 Detailed Description

Physics information that returns the player's velocity.

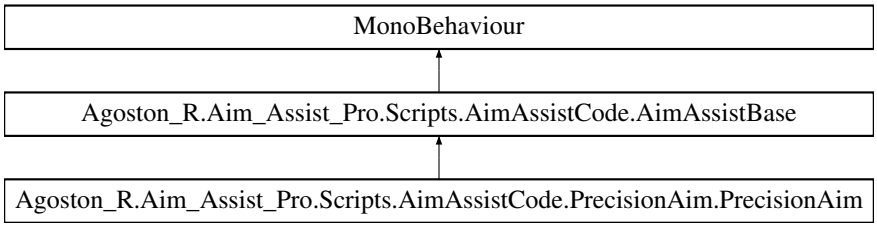
The documentation for this class was generated from the following file:

- Helper/Info/PlayerTransformInfo.cs

5.11 Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.Precision↩ Aim.PrecisionAim Class Reference

Slows down the look input using a curve to ease up aim on the target.

Inheritance diagram for Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.PrecisionAim.PrecisionAim:



Public Member Functions

- Vector2 AssistAim (Vector2 input)

  Calculates the slowed down player input delta using the curve.
- float AssistAim (float input)

  Overload for the other method, used in cases when there's only one axis for the look input.

Public Attributes

- float **sensitivityMultiplierAtCenter** = 0.18f
- float **sensitivityMultiplierAtEdge** = 0.5f
- float **timeToRegainOriginalInputSensitivity** = 1f

Protected Member Functions

- override void Awake ()

Additional Inherited Members

5.11.1 Detailed Description

Slows down the look input using a curve to ease up aim on the target.

5.11.2 Member Function Documentation

5.11.2.1 AssistAim() [1/2]

```
float Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.PrecisionAim.PrecisionAim.AssistAim (
            float input )
```

Overload for the other method, used in cases when there's only one axis for the look input.

Parameters

input	the precision aim input, which contains the look input

Returns

the modified look input

5.11.2.2 AssistAim() [2/2]

```
Vector2 Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.PrecisionAim.PrecisionAim.AssistAim (
            Vector2 input )
```

Calculates the slowed down player input delta using the curve.

Receives a look input delta, returns a modified look input delta.

Before calculating your rotations from the player input, run that input through this.

Parameters

input	inputs: the player's look input delta

Returns

the modified look input delta

5.11.2.3 Awake()

```
override void Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.PrecisionAim.PrecisionAim.Awake (
) [protected], [virtual]
```

Reimplemented from Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.AimAssistBase.

The documentation for this class was generated from the following file:

- PrecisionAim/PrecisionAim.cs

5.12 Assets.Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.PrecisionAim.PrecisionAimInput Struct Reference

Public Member Functions

- **PrecisionAimInput** (Vector2 lookInputDelta)
- **PrecisionAimInput** (float lookInputDelta)

Properties

- Vector2 **LookInputDelta** `[get]`

The documentation for this struct was generated from the following file:

- PrecisionAim/PrecisionAimInput.cs

5.13 Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.Helper.SelectedTargetStore Class Reference

Contains logic that handles the selection of a single target and calling its notification events.

Public Member Functions

- void ProcessTarget (AimAssistTarget target)

  Calls the events to the selected target and stores it to prevent invoking the same events over and over again.

5.13.1 Detailed Description

Contains logic that handles the selection of a single target and calling its notification events.

Must use distinct instances for each player, in case multiple players are present.

5.13.2 Member Function Documentation

5.13.2.1 ProcessTarget()

```
void Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.Helper.SelectedTargetStore.ProcessTarget (
            AimAssistTarget target )
```

Calls the events to the selected target and stores it to prevent invoking the same events over and over again.

Parameters

target	target that was found

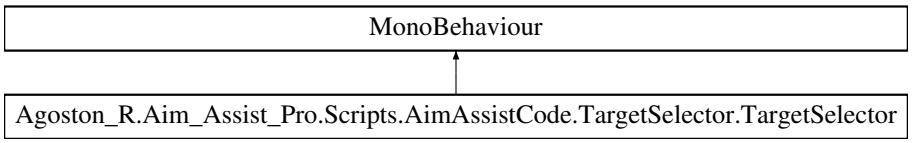
The documentation for this class was generated from the following file:

- Helper/SelectedTargetStore.cs

5.14 Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.TargetSelector.TargetSelector Class Reference

Finds and selects a given target for the aim assists and invokes events on the target if any are defined.

Inheritance diagram for Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.TargetSelector.TargetSelector:



Public Attributes

- float **aimAssistRadius** = 0.5f
- float **nearClipDistance** = 0.5f
- float **farClipDistance** = 50f
- LayerMask **layerMask**
- float **minDepth** = -Mathf.Infinity
- float **maxDepth** = Mathf.Infinity
- ForwardDirection **forwardDirection** = ForwardDirection.X
- bool **flip**

Properties

- NotifyTargetFound **OnTargetSelected** = new NotifyTargetFound() `[get]`
- NotifyTargetFound **OnTargetLost** = new NotifyTargetFound() `[get]`
- Transform **AimOrigin** `[get]`

  The aim origin is the transform of the GameObject that has the aim assist on it.
- Vector3 **AimDirection** `[get]`
- AimAssistTarget **Target** `[get]`

  The target that is currently found by the selector. Null if currently no targets are found.

5.14.1 Detailed Description

Finds and selects a given target for the aim assists and invokes events on the target if any are defined.

Separating the selection can enable you to use multiple aim assists together with no additional performance hit from the target selection process.

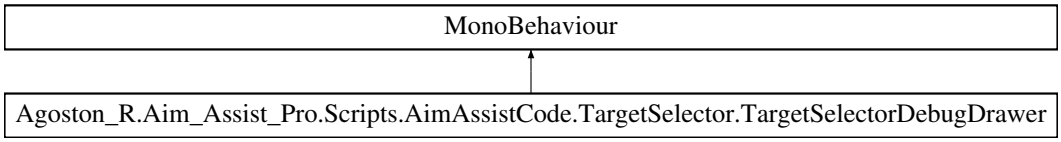
The documentation for this class was generated from the following file:

- TargetSelector/TargetSelector.cs

5.15 Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.TargetSelector.TargetSelectorDebugDrawer Class Reference

Debug drawer that shows what the target selector sees in the Scene view.

Inheritance diagram for Agoston_R.Aim_Assist_Pro.Scripts.AimAssistCode.TargetSelector.TargetSelectorDebugDrawer:



Classes

- struct **AimDrawerDto**

5.15.1 Detailed Description

Debug drawer that shows what the target selector sees in the Scene view.

The documentation for this class was generated from the following file:

- TargetSelector/TargetSelectorDebugDrawer.cs

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