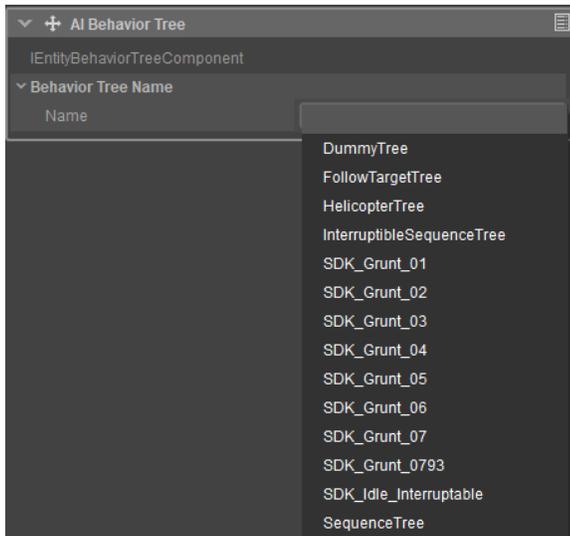


AI Behavior Tree

Allows users to specify, from a dropdown menu, the Behavior Tree an Entity should run.



Behavior Tree component

For Behavior Trees to appear within the dropdown menu however, they need to be saved under the *Scripts/AI/BehaviorTrees* directory of your project. Please refer to the [Implementing The Behavior Tree in The Behavior Tree Editor](#) section for an example.

Setting	Description
Name	Name of the behavior tree saved under the <i>Scripts/AI/BehaviorTrees</i> directory of your project.

AI Cover User

The Cover User component works together with movement system and provides an ability to use covers for the entity. Covers are user designed objects (Cover Surface) placed in Sandbox.

Setting	Description
Min Effective Cover Height	Minimal effective height for the cover to be usable by the cover user and not to be compromised.
In Cover Radius	Radius used to block nearby cover locations when the agent is in cover.
Distance To Cover	How far the cover user can be from the exact cover location.
Blacklist Time	How long the compromised cover location will be considered as not valid for further cover queries.

AI Faction

The Faction component stores the faction of the entity. Factions and their relations are defined in the Faction Map (*Scripts/AI/Factions.xml*).

Setting	Description
Faction	Here you can choose the faction your entity belongs to.

AI Listener

The Listener component registers the entity to *AuditionMap* and makes it able to perceive sound stimuli. The component is notified when any interesting stimuli is heard.

- [AI Behavior Tree](#)
- [AI Cover User](#)
- [AI Faction](#)
- [AI Listener](#)
- [AI Navigation Agent](#)
- [AI Navigation Markup Shape](#)
- [AI Observable](#)
- [AI Observer](#)

Property /Setting	Description								
Factions To Listen To	Only sound stimuli whose source entities belong to these factions will be processed.								
Listening Distance Scale	An optional scale that can be applied to increase or reduce the listening distance.								
Ear Locations	A collection of locations that will determine if the entity is within hearing range of sound stimuli. Can also be used to cast rays to these locations to determine sound obstruction fall-offs and such.								
	<table border="1"> <thead> <tr> <th>Setting</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Location type</td> <td>Pivot or Bone.</td> </tr> <tr> <td>Bone Name</td> <td>(if Location type is 'Bone') The name of the bone/joint from which to take the position</td> </tr> <tr> <td>Offset</td> <td>X, Y and Z coordinates for fixed offset from position.</td> </tr> </tbody> </table>	Setting	Description	Location type	Pivot or Bone.	Bone Name	(if Location type is 'Bone') The name of the bone/joint from which to take the position	Offset	X, Y and Z coordinates for fixed offset from position.
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Offset	X, Y and Z coordinates for fixed offset from position.								
Use Custom Filter	Whether the custom condition filter should be used (Schematyc 'ListenerCustomFilter' signal).								

AI Navigation Agent

The Navigation Agent component gives the ability to navigate in space, finding paths to desired destinations, following them, and also trying to avoid collisions with other agents.

Property	Description																
Navigation Agent Type	Type of the navigation agent, specifying which NavMesh will be used by the agent (agent types are defined in <i>Scripts/AI/Navigation.xml</i>).																
Update Transformation	When set to true, the Navigation Component automatically updates the entity's transformation by computed requested velocity (position and rotation). When false, the requested velocity should be passed to other systems.																
Movement	<table border="1"> <thead> <tr> <th>Setting</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Normal Speed</td> <td>Normal entity speed.</td> </tr> <tr> <td>Min Speed</td> <td>Minimal output speed.</td> </tr> <tr> <td>Max Speed</td> <td>Maximal output speed.</td> </tr> <tr> <td>Max Acceleration</td> <td>Maximum acceleration of the entity.</td> </tr> <tr> <td>Max Deceleration</td> <td>Minimal acceleration of the entity.</td> </tr> <tr> <td>Look Ahead Distance</td> <td>How far the entity looks ahead along the path.</td> </tr> <tr> <td>Stop At End</td> <td>Aim to finish the path by reaching the end position (stationary) or simply overshoot.</td> </tr> </tbody> </table>	Setting	Description	Normal Speed	Normal entity speed.	Min Speed	Minimal output speed.	Max Speed	Maximal output speed.	Max Acceleration	Maximum acceleration of the entity.	Max Deceleration	Minimal acceleration of the entity.	Look Ahead Distance	How far the entity looks ahead along the path.	Stop At End	Aim to finish the path by reaching the end position (stationary) or simply overshoot.
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Collision Avoidance	Setting	Description
	Type	<ul style="list-style-type: none"> • None - Agent doesn't contribute to collision avoidance. • Passive - Agent isn't trying to avoid obstacles but other agents consider him as an obstacle. • Active - Agent is actively trying to avoid obstacles.
	Radius	Radius of the colliding agent.
	Height	Height of the colliding agent.
Navigation Query Filter	Setting	Description
	Area Costs	<ul style="list-style-type: none"> • Default - Costs multipliers set per each of the area types. During path-finding, paths that lead through triangles with lower costs are preferred.
	Include Flags	<p>Specifies which flags are accessible. At least one of these flags must be set in triangle to be accepted.</p> <ul style="list-style-type: none"> • All - Selects all flags listed in this section. • None - Deselects all listed flags. • Walkable - Created by the Navigation System by default, this flag is set upon all triangles in the NavMesh, when no special area type is specified within the NavMesh. • Inaccessible - Created by the Navigation System by default, this flag is set upon all triangles in the NavMesh that aren't accessible from any seed points placed in a map. <p>Custom flags must be defined in the <i>Navigation.xml</i> file located under <i>ProjectFolder/Scripts/AI/</i>.</p>
Exclude Flags	<p>Specifies which flags are forbidden. None of these flags must be set in triangle to be accepted.</p> <ul style="list-style-type: none"> • All - Selects all flags listed in this section. • None - Deselects all listed flags. • Walkable - Created by the Navigation System by default, this flag is set upon all triangles in the NavMesh, when no special area type is specified within the NavMesh. • Inaccessible - Created by the Navigation System by default, this flag is set upon all triangles in the NavMesh that aren't accessible from any seed points placed in a map. <p>Custom flags must be defined in the <i>Navigation.xml</i> file located under <i>ProjectFolder/Scripts/AI/</i>.</p>	

AI Navigation Markup Shape

The Navigation Markup Shape component is used to create markup shapes, allowing to 'mark' triangles in the NavMesh with various annotations (area types and flags). Annotations can be set in the *Scripts/AI/Navigation.xml* config file.

Property	Description
Ignore Geometry in MNM	When activated, the Entity's geometry is ignored in NavMesh generation.

Shapes	Clicking on the dropdown menu icon next to the Shapes section will reveal a list including the following options:							
	<table border="1"> <thead> <tr> <th>Option</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Insert</td> <td>Adds a new Shape on top of the list.</td> </tr> <tr> <td>Add</td> <td>Adds a new Shape at the bottom of the list.</td> </tr> <tr> <td>Remove All</td> <td>Removes all the Shapes that has been previously added to the list.</td> </tr> </tbody> </table>	Option	Description	Insert	Adds a new Shape on top of the list.	Add	Adds a new Shape at the bottom of the list.	Remove All
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Remove All	Removes all the Shapes that has been previously added to the list.							
	When a new Shape is added, following settings will appear on the Properties panel:							
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AI Observable

The observable component registers the entity to VisionMap and makes it able to be "seen" by other entities that are registered as **Observers**.

Property	Description								
Vision Map Type	Combination of flags to identify the type of the observable.								
Observable Locations	Positions, offset from the pivot or bones, that are checked for visibility by Observers. <table border="1"> <thead> <tr> <th>Setting</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Location type</td> <td>Defines if the location is set on Pivot or Bone.</td> </tr> <tr> <td>Offset</td> <td>X, Y and Z coordinates for fixed offset from position.</td> </tr> <tr> <td>Bone Name</td> <td>Available when the Location type is set to Bone. Sets the name of the bone/joint from which to take the position.</td> </tr> </tbody> </table>	Setting	Description	Location type	Defines if the location is set on Pivot or Bone .	Offset	X, Y and Z coordinates for fixed offset from position.	Bone Name	Available when the Location type is set to Bone . Sets the name of the bone/joint from which to take the position.
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Location type	Defines if the location is set on Pivot or Bone .								
Offset	X, Y and Z coordinates for fixed offset from position.								
Bone Name	Available when the Location type is set to Bone . Sets the name of the bone/joint from which to take the position.								

AI Observer

The observer component registers the entity to VisionMap and makes it able to see other entities that are registered as Observables.

Setting	Description
Vision Map Type	Combination of flags to identify the type of the observer.

Vision	Configuration of the vision sensor with which the entity can observe the world.	
	Setting	Description
	Field of View	Field of view in degrees.
	Sight Range	The maximum sight distance from the eye point to an observable location on an entity.
Location	Location of the eye sensor; offset from Pivot or Bone position).	
	Setting	Description
	Location type	Whether the eye sensor is attached to a Bone or a Pivot .
	Offset	Fixed offset from position.
Bone Name	When the Location type is Bone , defines the name of the bone/joint from which to take the position.	
Vision Blocking	Setting	Description
	Blocked By Solids	If enabled, vision ray-casts cannot pass through colliders that are part of solid objects that sometimes also denoted as hard cover.
	Blocked By Soft Cover	If enabled, vision ray-casts cannot pass through colliders marked as soft cover. These are colliders that only block vision but you can still sit inside them. e.g. bushes, tall grasses, etc.
Types To Observe	Only entities that belong to these vision map types will be processed for sight.	
Factions To Observe	Only entities that belong to these factions will be processed for sight.	
Use Custom Filter	Whether the custom condition filter should be used or not such as Schematyc's Observer CustomFilter signal.	