

Documentation



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Getting Started

(MANDATORY) Install NeoFPS

(Optional) Install Photon 2 and Enter app id in PUN settings

(Optional) Install NeoFPS Multiplayer (coming soon)

(Optional) Install RCC => ***(Note: If using earlier version of RCC that does not use Input System as standard then ignore this)*** => (MANDATORY) *Input System Package with latest RCC => (MANDATORY) Input System integration package for NeoFPS*

(MANDATORY) Install SeatingController package last

Layer Setup

If not using RCC and Its layers

Use one of your own layers or add at least one layer, Name it something unique like "Boardable". The Demo Scenes use layer 20: Boardable.

PRO TIP: For fast setup use Tools > FST > Seating Controller Manager > Add Boardable Layer (20)

All BoardSources should use this new layer.

ProjectSettings > Physics > CollisionMatrix > Ignore all collision between new layer/s and Character, SubCharacter, Overlay, VisualEffect and UI.

PRO TIP: For fast setup use Tools > FST > Seating Controller Manager > Update Collision Matrix

NOTE: will also work with vehicles set to "Default" layer out of the box, not preferable for performance reasons.

If using RCC and its layers

ProjectSettings > Physics > CollisionMatrix > Ignore all collision between all RCC layers and Character, SubCharacter, Overlay, VisualEffect and UI.

PRO TIP: For fast setup use Tools > FST > Seating Controller Manager > Update Collision Matrix

Input

Input is gathered via the neo input manager and will require no extra setup. You can however add custom inputs and change them if you like.

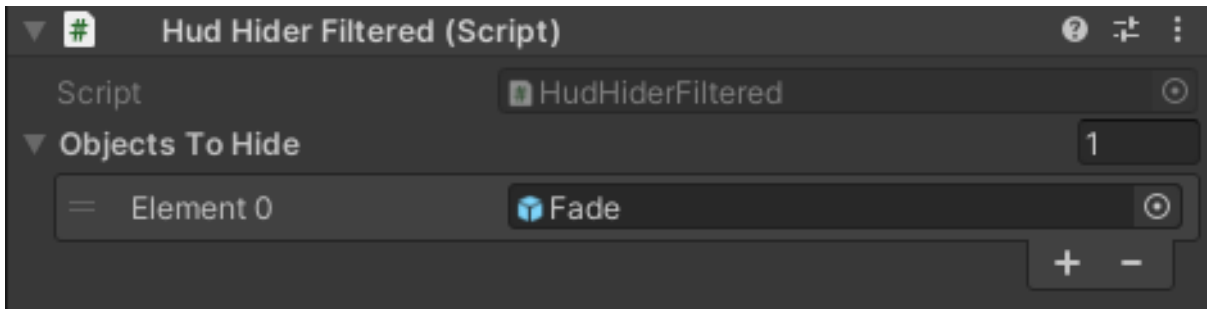
NOTE: To change seats the default Input Names are using "OpticsLightPlus" and "OpticsLightMinus", the default keys are numpad + and numpad -

To zoom in with vehicle weapons the default Input Name is "SwitchWeaponModes", the default key is Middle Mouse Button

Setting Up UI

HudHiderFiltered.cs

The Hud Hider Filtered component should be attached to the root of your canvas or your root HUD container, as per demo scene. This allows you to set which parts of the canvas will be hidden when a seat has HideNeoHUD enabled.



VehicleWeaponSlotMonitor.cs

Vehicle Weapon Slot Monitors can be added to your ui, these help display which vehicle weapons are active.

VehicleFullScreenUIMonitor.cs

Vehicle Full Screen UI Monitors can be used to show your own full screen UI for vehicle weapons and alike.

VehicleCrosshairsMonitor.cs

The Vehicle Crosshairs Monitor is used to set the crosshairs for vehicle weapons.



Setup Character to interact with a BoardSource

If not using the Add On Manager to setup your ability then...

Add Board Ability to character

For Full Body > Add FPBodyDemo_TemplateAnimatorBoard Animator Controller to your character, or modify your animator to match the FPBodyDemo_TemplateAnimatorBoard animator where required.

Ability Settings

OffsetY

For different characters you can set this value to set the character into correct position. Saves changing seat reference positions.

Input Change Seat Forward

The name of the input that allows changing seats forwards.

NOTE: Default is "Equip Next Seat". Default key is numpad +

Input Change Seat Backward

The name of the input that allows changing seats backwards.

NOTE: Default is "Equip Previous Seat". Default key is numpad -

Setup an object for use with Board ability

Quick Setup

Tools > FST > Seating Controller Manager

Drop or Select Gameobject in the Object to Setup field

Click Setup Object

OR

Add BoardSource component to vehicle

Add EnterExitLocation object/s and thier component. Vehicles in demo scene will show different types of setups.

NOTE: Bake navmesh in OfflineDemo scene for rcc AI to work (can takeover ai cars like in gta).

Setup Animator on vehicle if need left and right door animations

See "Setting up an animator for a BoardSource"

For IK

Use empty gameobjects with an IK Target component to set the desired positions. If they are not child of seat then set the root in the seat, eg hands to steering wheel > steering wheel is root.

Pro Tip:

Naming conventions matter! Here's what the asset uses for quick setup if you like speedy setup.

For seats - The tool will search for names containing "Seat/seat" and "Driver/driver, Passenger/passenger, Gunner/gunner" respectively. It will add the seats to the component and prefill the Name, Type and Seat Position fields.

Example "DriverSeat", "PassengerSeat", "GunnerSeat"

It will also search for "Feet/feet" and "Hand/hand" combined with "Root/root"

Example "HandIkRoot", "FeetIkRoot"

It will also search for "FirstPersonCamPos/FirstPersonCameraPos/FirstPersonCameraPosition" if added for vehicle weapons.

Attack Colliders are also found and added, It will search for "Attack/attack" combined with "Collider/collider". Additionally it will find "Left/left", "Right/right", "Front/front", "Rear/rear". If none of these are found it cannot determine how you would like it setup so it'll show you a handy little window to assist the setup in a speedy manner.

Base BoardSource Settings

Dont Destroy On Load

If the BoardSource GameObject should stay alive between scenes enable this.

Disable On Death

If using the Health Component you can enable it there, this is just a handy bool to save going to the Health Component.

Death Prefabs

Any prefabs you wish spawned upon death should added here, unless using the health component to do so.

Insta Kill Players On Death

If enabled all players will be instantly killed when the BoardSource is out of Health.

If disabled then the players will be ejected only, it's possible that explosion could kill them then or they may survive.

Animator ID

The unique ID of this vehicle, only unique to animation. Vehicles can share this value, but can also be unique to some individual interaction animations.

Attack Threshold

The BoardSource must be above this speed to make use of any Attack Colliders

NOTE: Requires Rigidbody on root object

Front Attack Colliders

Colliders can be added here (imagine invisible bullbar). Any Colliders in this array will become active to kill UltimateCharacterControllers upon contact, only if the BoardSource speed is above the Attack Threshold

NOTE: Requires Rigidbody on root object

Side Attack Colliders

As above but for sideways speed

Rear Attack Colliders

As per front attack colliders, but for when speed is negative

Disable Colliders

Optionally add any colliders here that should be disabled when player boards. They will be re-enabled when player disembarks the BoardSource

Far Clip Plane

Adjusts the camera far clip plane, useful for aircraft etc. -1 for no override.

Seats

Where the magic happens. Add seats players can utilise here. See next page for per seat settings.

Per Seat Settings

Name

You can set any name for the seat here for your own reference, this is entirely optional.

Type

There is three main types of seat to choose from.

Driver

Has control of the vehicle and will be considered the owner online. If has vehicle weapons, can also use them. If no vehicle weapons and allowed equipped slot mask allows, character can use items from inventory.

Passenger

If has vehicle weapons, can use them. If no vehicle weapons and allowed equipped slot mask allows, character can use items from inventory.

TODO: will be possible to walk around designated areas of vehicle(eg back of truck) and not allow vehicle weapons OR allow one vehicle weapon and one inventory slot.

Gunner

If has vehicle weapons, can use them. If no vehicle weapons and allowed equipped slot mask allows, character can use items from inventory.

Seat Position

GameObject attached to the BoardSource GameObject defining where the character position will be when seated in this seat. The character will be parented to the Seat Position GameObject.

Cam Limits

Only used when not using any Vehicle Weapons.

Field Of View Multiplier

Overrides the camera field of view, 0 for no override. Only used when not using any Override State

Field Of View Transition Duration

Transition speed when modifying base field of view.

Field Of View Multiplier Zooming

Optionally override camera field of view when zooming.

Zoom In Duration

Transition speed when zooming in.

ZoomOutDuration

Transition speed when zooming out.

Hand IK Links Root

A reference to the root Transform of the Hand IK Targets. Useful for steering wheels, handlebars, vehicle weapons etc.

NOTE: If Hand IK Targets are child of seat GameObject then it is not necessary to set this reference.

Feet IK Links Root

A reference to the root Transform of the feet IK Targets. Useful for pedals, pegs, vehicle weapons etc.

NOTE: If Feet IK Targets are child of seat GameObject then it is not necessary to set this reference.

Hide Neo HUD

This option will disable the the Neo HUD, great for when using vehicle hud or full screen ui.

Allow Look Input

Useful to allow or restrict camera and upper body rotations.

Force Independent Look

Useful to allow or restrict base character rotations. Recommended to leave set to true.

Use Car Camera Controller

True to use RCC Camera while in the seat, else will use NeoFPS camera

Can Change Perspective

Can the player change view perspectives while in this seat?

Teleport To Seat

Set this true to have character snap to seat, false to use animated entry/exit from this seat

Can Aim

Can the player aim while in this seat?

Visible Player

Should the character be visible while in this seat?

Invincible Player (only available if Visible Player is true)

Should the player be invincible? If false the player can take damage while on board a BoardSource and in this seat.

NOTE: If the character is invisible this will be true as naturally it should be. The option will be hidden.

Components To Enable

Any components that should be enabled while character is in this seat.

Components To Disable

Any components that should be disabled while character is this seat.

Controllable Vehicle Weapons

Add VehicleWeaponShooters here, and select input names they will use. ("Fire1" "Fire2" are standard)

NOTE: If using Neo Triggered setups with ShootableWeapon components, then the characters Trigger determines fire input as per character inventory items.

NOTE: See page 19 for VehicleWeaponShooter documentation

Use Camera Pivot

If there is no vehicle weapons for the seat, there is still the option to use a custom camera pivot. This will force the VehicleWeaponViewTypes active.

Camera Pivot

The reference GameObject for the camera position and rotation for seats with VehicleWeapons or when using a custom camera pivot.

Allow Equipped Items

Slots

Which slots are allowed to be equipped from the inventory?

Vehicle Weapon Shooter

This component delivers a way to shoot weapons attached to a vehicle eg. Tanks.

Weapons do not need animations as I have included a system that can simulate the mechanics of the weapons.

If first person perspective will be available, Camera Pivot CANNOT BE EMPTY in the seat that uses this weapon.

The main settings all replicate ucc shootable weapon settings combined with all of the extra settings required (like found in usable item, third and first person properties components on a UCC setup character weapon).

Grenades can also be launched. Just add as per projectile.

NOTE: Vehicle Weapon Shooters that fire grenades should have the “Minor Item Setup” or no item and pickup at all. If using character item setups with ShootableWeapon components, then the grenade should not be used and a warning will prompt you to remove them upon equipping the item.

Objects To Rotate

Please ensure all origins are correctly aligned in your models, else make an empty gameobject that will act as a pivot, I have included a demonstration of this on the tank. Also, if using two or more weapons that will rotate, and they are parent child setups, then only setup the Objects To Rotate on the parent.

Each Object To Rotate has some settings as follows.

Object To Rotate

The object that will be rotated towards the player look direction.

Input Axis

Which input should drive the object rotation when in first person view.

Axis To Rotate Around

Which axis should the object rotate around when in first person view.

Limit Min Max Angle

Limit the rotation here.

Smooth

This affects the speed of rotation.

VehicleWeaponShooter Extra Settings

Slot ID

Is which slot the item should equip to

Fire Force

How much force to apply to the object that is firing (if it has a rigidbody). Perfect for a Tank Blast!

Add Object Velocity To Projectile

Should the BoardSource rigidbody velocity be added to the projectile?

Projectile Safety Distance

When the projectile is spawned, if it will collide with the firing weapons BoardSource then it will be moved this far forward.

NOTE: Has no effect on NeoFPS Item Setups.

Projectile Safety Radius

The cast radius for collision checks between the BoardSouce and the projectile that will be fired.

NOTE: Has no effect on NeoFPS Item Setups.

Setting Up Vehicle Weapon Shooters

Simple Item Setup

Vehicle Weapon Shooters can be used without any any extra component, and until a Trigger component is added can utilise some extra vehicle effects like adding force to the vehicle that fired (like the tank in demo).

Minor Item Setup

Vehicle Weapon Shooters can be used with a Muzzleflash, AmmoEffect, Smoke etc etc. and until a Trigger component is added can utilise some extra vehicle effects like adding force to the vehicle that fired (like the tank in demo).

If a Trigger is added, it will convert to a NeoFPS style system.

Major Item Setup

Full NeoFPS Shootable Weapon system, best used when there is no requirement for extra blast effect on rigidbodies etc.

As per Minimal Item setup except with all NeoFPS components, just driven by the Vehicle Weapon Shooter component.

NOTE: The demo scene shows various combinations, be sure to check them out.

Parachute

Included is a Parachute ability, along with a gunship example you can parachute from. The Start Type and Stop Type should be set to Automatic.

The following fields are specific to Parachute ability.

Parachute GameObject

The GameObject that represents the visual transform of the parachute, can be attached to root of player or a prefab to spawn.

Unequip When No Chute

If the bool is true, then weapons are only equipped whilst the parachute is deployed. If the bool is false the player can equip throughout all states during the fall.

Pickup On Board

Should a parachute be picked up when board is triggered. Lots of games use this feature.

Requires Pickup

Does a parachute need to be picked up to be able to use the ability?

Is Single Use

Can the parachute be deployed more than once during a single fall? (useful if cord is cut)

Min Deploy Altitude

The ability cannot start below this altitude.

Deploy Input

Any inputs in this array can deploy the parachute. Demo uses "Action".

Cut Cord Input

Any inputs in this array can cut the parachute cord and resume the characters fall. Demo uses "Crouch".

Auto Start Altitude

The parachute can be auto deployed at or below this altitude. -1 to never automatically deploy by altitude.

Auto Deploy Delay

The parachute can automatically deploy after a set delay. -1 to never automatically deploy by delay.

Pitch Force

The forwards force to be added when pitching forwards while the parachute is deployed.

Roll Gravity Modifier

The multiplier for roll affecting gravity while the parachute is deployed.

Max Gravity Effect

The base gravity which determines fall rate while the parachute is deployed.

Gravity Transition Speed

The gravity transition speed when deploying the parachute, more for more snappy, less for more smooth.

Parachute Root Bone

The root bone Transform of the parachute GameObject, should be located at the harness location.

Parachute Root Bone Object ID

The root bone ObjectID of the parachute, for use at runtime when Parachute GameObject is spawned.

Attach Point Bone

The character bone the Parachute Root Bone should attach to.

Altitude Text

Optional UI text to display altitude and rate of descent.

Is Wind Affected

Can Unity Wind affect the behaviour?

Skydive Wind Multiplier

How much the Unity Wind will affect the behaviour while in a skydiving state.

Parachute Wind Multiplier

How much the Unity Wind will affect the behaviour while the parachute is deployed.

Skydive Move Force

How much input can steer while skydiving.

Auto Start Delay

The ability can automatically start after a set delay if the character has left the ground. -1 to never automatically start by delay.

Auto Stop Delay

Upon landing the ability will stop after this delay.

Chute Disable Delay

The parachute GameObject will disable after this delay.

Auto Start Block Duration

The duration that ANY automatic starts should be blocked. -1 to never block automatic starts.

Start Landing Altitude

When the character reaches this altitude it will go into a landing state which realigns the character to the gravity direction.

Early Death Prevention Hieght

The character can cheat death if they cut the cord below this altitude.

Jump Force

Jump force that will be applied when the character leaves a ledge that is higher than the Min Deploy Altitude.

Ambient Forward Force

While the parachute is deployed this much ambient forward force will be applied.

Rotation Speed

The speed at which pitch and roll character rotations will be applied while the parachute is deployed.

Max Forward Pitch

The maximum amount the character can pitch forwards while the parachute is deployed.

Max Backward Pitch

The maximum amount the character can pitch backwards while the parachute is deployed.

Pitch Gravity Multiplier

The multiplier for pitch affecting gravity while the parachute is deployed.

Max Roll

The maximum amount of roll that can be applied while the parachute is deployed.

Roll Force

The sideways force to be added when rolling while the parachute is deployed.

Integrate with Crest

You can easily use NeoFPS + USC + Crest, No coding required, A perfect example is the submarine, as it can go beneath the water.

Setup Scene as per normal.

Setup your character, ensuring you have the swim and board ability added.

Simply open the USC Manager and setup the Submarine Gameobject (found in the Crest Submarine demo scene) as you normally would via quick setup (leave all default values for the driver seat).

In the driver seat section add the Submarine Component and the Submarine Camera Component to Components To Enable array. Optionally you can just remove the submarine camera entirely if using another camera or remove that component from the Submarine GameObject if you setup that camera with NeoFPS.

Add the Crest Simple Floating Object component to the Submarine GameObject. Then add the freshly added component to the driver seat Components To Enable array.

Ensure that the Board component has been added to your character.

Add a box collider with the layer set to water and Is Trigger set to true. Scale it to size you wish to play in.

Press play, its good to go.

NOTE: You can also use the Custom Water Height and the relative component to have your character float with the waves.

Multiplayer

The BoardSource must have a BoardSourcePun component.

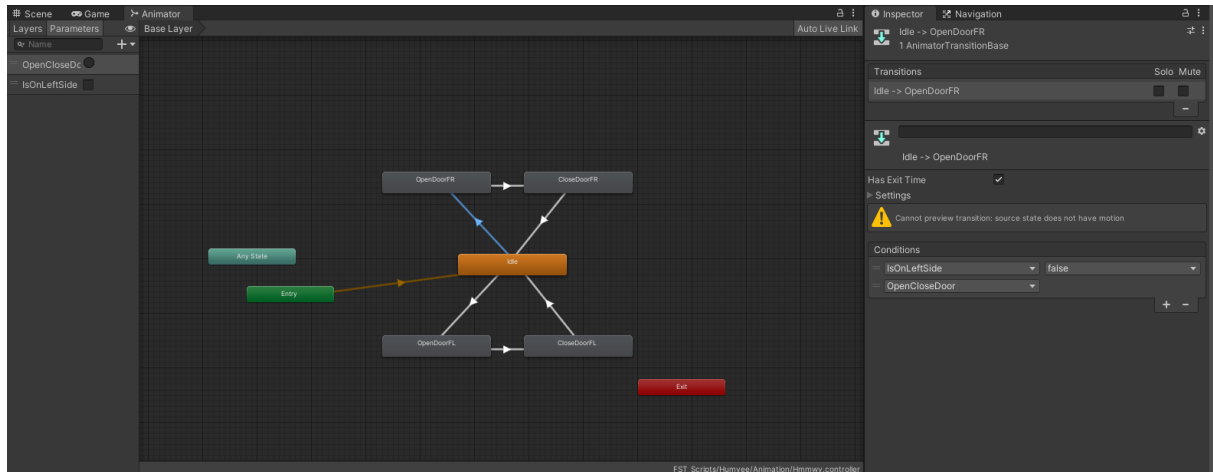
The VehicleWeaponShooters must have a VehicleWeaponShooterPun component.

The above can be setup fast using the Seating Controller Manager (Tools>
FastSkillTeam> Seating Controller Manager)

Setting up an animator for a BoardSource

Currently I have added support to open left/right door and enter from respective door.

I will be adding support for more than two doors soon, and it will be unlimited.



Event System

The following events can be registered to.

BoardSource Events

- SetOwnerEvent > (int)actorNumber
- EnablePlayerCollisionEvent > (GameObject)character, (bool)enable, (bool)transmit
- OpenCloseDoorEvent > (bool)board.IsOnLeft
- TryAddPlayerToListEvent > (int)actorNumber
- TryRemovePlayerFromListEvent > (int)actorNumber
- SetTeamOwnerEvent > (int)teamNumber, (bool)transmit
- EnableDisableIKEvent > (GameObject)character, (bool)enable

Board Events

- BoardEvent > (bool)isOnBoard
- SetSeatEvent > (data[]){ (GameObject) character, (int)seatIndex, (bool)seatActive, (int)actorNumber, (bool)transmit }

Tutorial Links

Basic Character and Vehicle Setup

Coming soon

Basic Tank Setup

Coming soon

Adding UI to the Tank

Coming Soon