



xsens

MVN LiveLink plug-in for Unreal

User Manual

Revision D, November 2019



UNREAL ENGINE

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Revisions

Revision	Date	By	Changes
A	August 2018	EJO	Updated for 2018 plug-in
B	October 2018	SBE	Updated workflow
C	April 2019	SBE	Updated wrong filename
D	November 2019	SBE	Changed workflow for UE 4.23

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1 Introduction

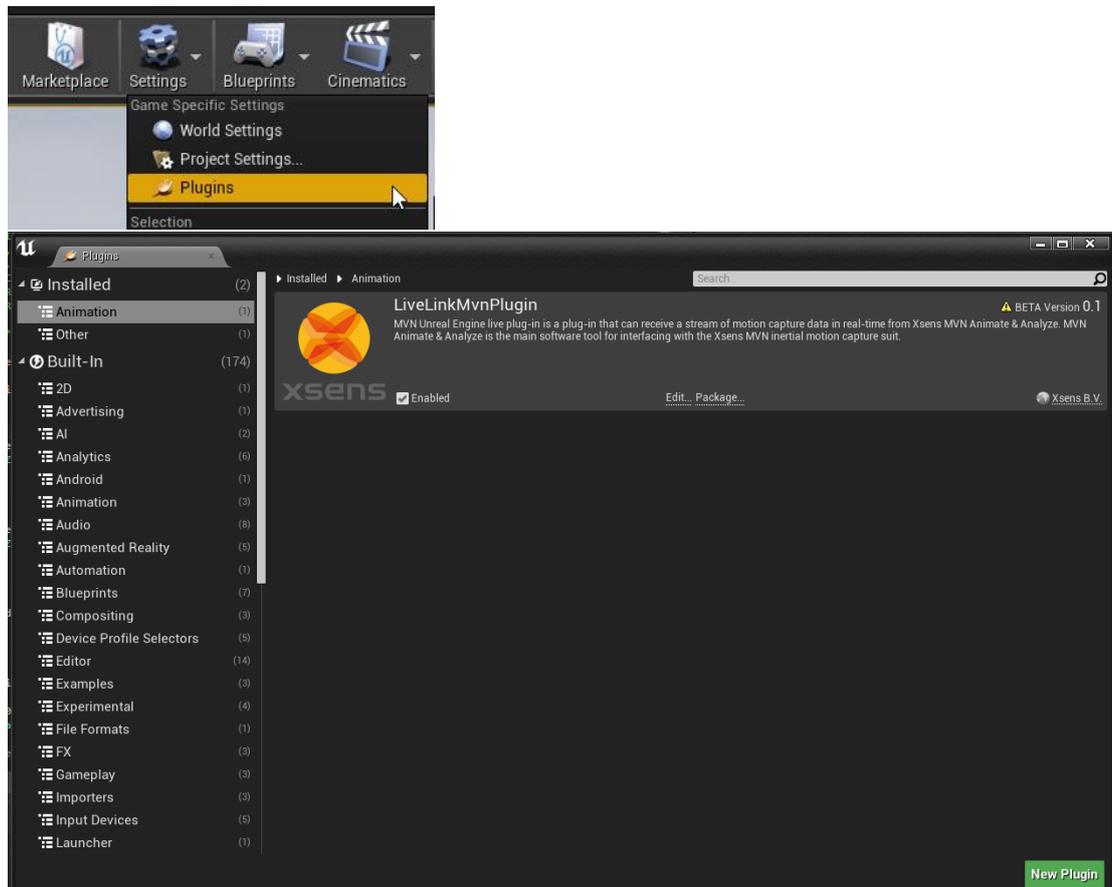
Xsens MVN Analyze/Animate, developed by **Xsens**, is the main software tool for interfacing with the MVN inertial motion capture suit. MVN Analyze/Animate allows the export of motion capture data to third party applications, making the data available to drive rigged characters in animation and more. The data transfer to other applications is primarily file based (export) when using MVN Analyze/Animate.

However, in many scenarios it is attractive to keep the ease of use of MVN Analyze/Animate, but still being able to receive and process the motion capture data in real-time in another application, even on a another PC, possibly physically remote from the MVN system.

To this end, MVN Analyze/Animate can act as a server on a network and stream motion capture data in real-time to a client PC running a client application. This document specifically treats the use of a network streamer to stream motion capture data in real-time into the Unreal Engine.

2 Setup

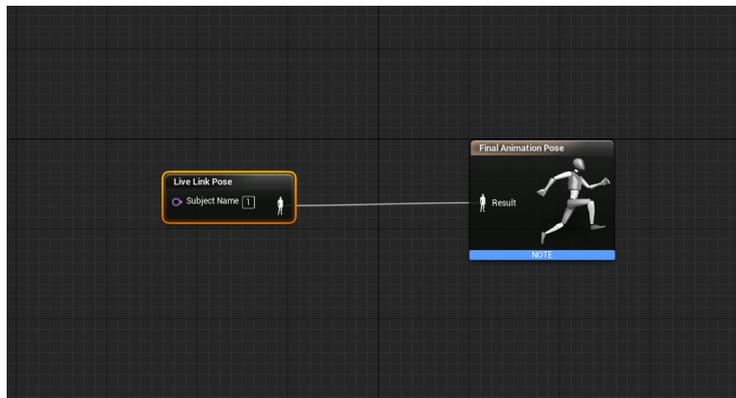
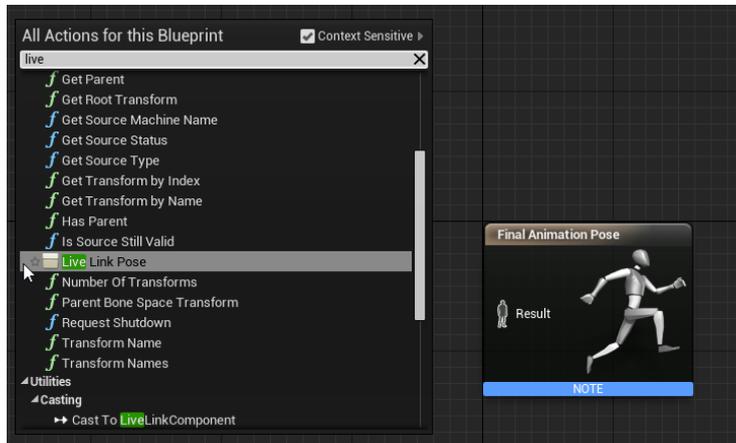
1. First in MVN, go to the network streamer, add a new stream and enable the Position + Orientation (Quaternion), Scaling Data and if you want to stream finger data the Send Finger tracking data. Make sure the port of the stream is the same as setup in Unreal.
2. Install the MVN plugin from the Unreal Marketplace.
3. Create a new project or open an existing project.
4. Now copy the file named “MVN_remap_example.uasset” from the engine folder to where the plugin is installed (e.g. C:\Program Files\Epic Games\UE_#.##\Engine\Plugins\Marketplace\LiveLinkMvnPlugin\Content) to your project’s content folder. (e.g. C:\Users\[UserName]\Documents\Unreal Projects\MyProject\Content)
5. Go to Edit → plugins → installed → animation Here you should see LiveLinkMvnPlugin. Make sure to enable the plugin.



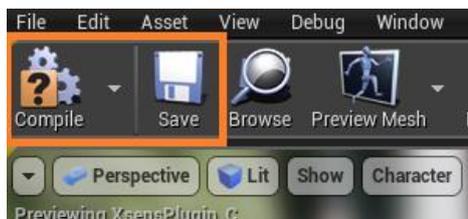
6. Now you can start up the stream go to “Window → Live Link” now “Add → Xsens Live Source”. Fill in the desired port number here and press OK. The default Xsens setting is already filled in.
7. Now create an animation blueprint for you character. In the Content Browser, Right click in the folder you want to create the “animation blueprint” and select “animation → animation

blueprint”. Do not select a parent class, but do select the skeleton of your character for the target skeleton. Then click OK.

8. Name the blueprint and double click to open it.
9. Right click and add a “live link pose” and give it a subject name between 1-4 (depending on which actor you want to display from MVN, if you have a single actor file type 1)

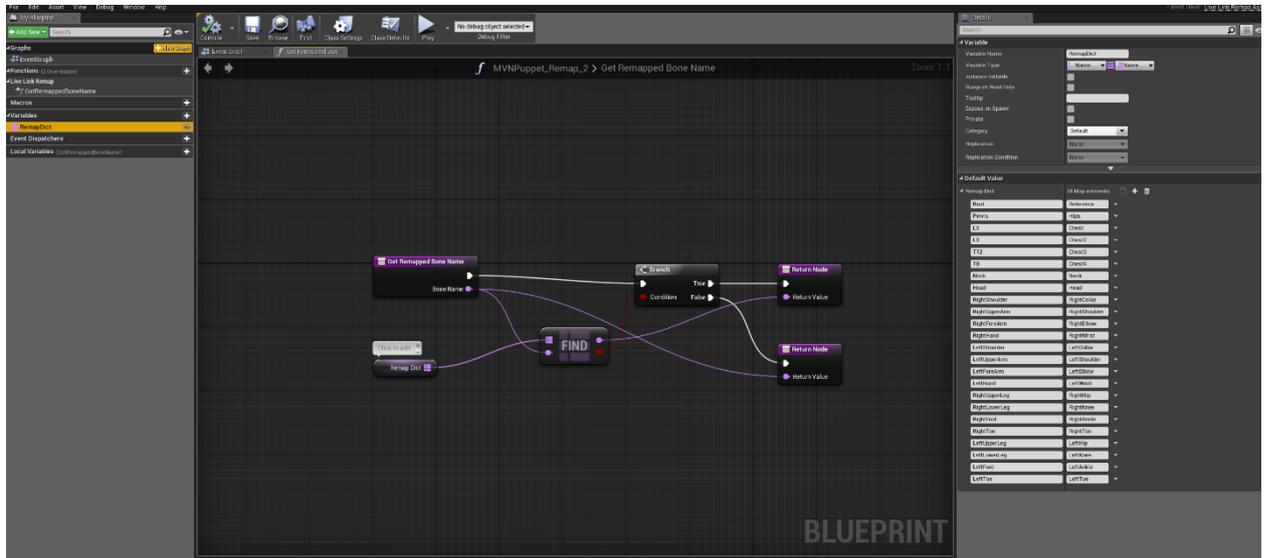


10. Now compile and save the “Animation Blueprint”

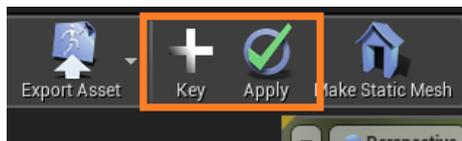


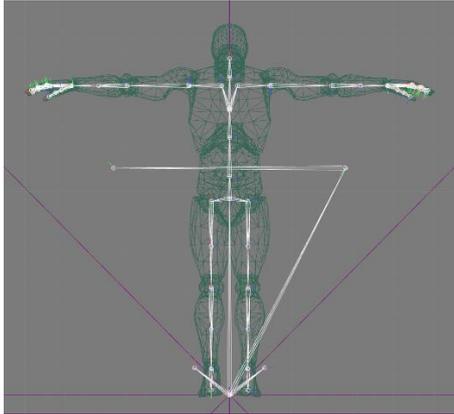
11. If the actor does not have the same segment names as the MVN actor you will need to add a retarget asset. For this you can edit the one provided with the plugin.

- Open the “MVN_remap_example” in the content folder in which you have placed the file “MVN_remap_example.uasset”, then on the left hand side click on “RemapDict”. On the right hand side you will see the names of the MVN segments (Left) and where you will need to fill in the corresponding segments of your character (Right). If you do not have a matching segment put “None” (this is also done automatically if you leave it empty).

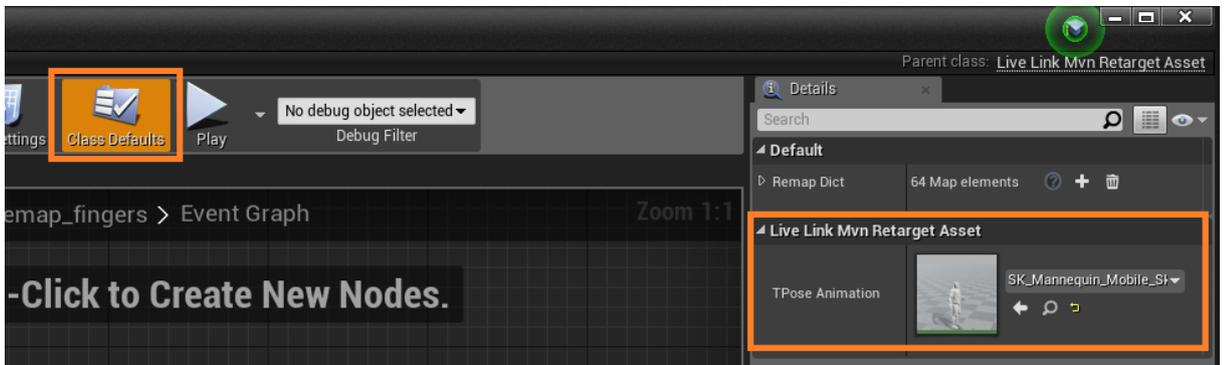


- To find the segment names of your character, open the Skeleton that belongs to this. On the right hand side in the skeleton tree you will find the names of the segments.
- Once all segments are filled in, press Compile and Save.
- If your character is not in a TPose and facing the X Axis you will need to do an extra step. Create an “Animation Composite” by right clicking in the folder of your character and go to “animation → animation composite” and select the skeleton of your character. Name and open this animation and go to “Create Asset → Create Animation → Current Pose”. This will create a 1 frame animation with the pose you require. If you need to adjust it, you can open this animation and change it. Once the character is in a TPose and facing the X Axis, press Add Key and Apply to update the pose.

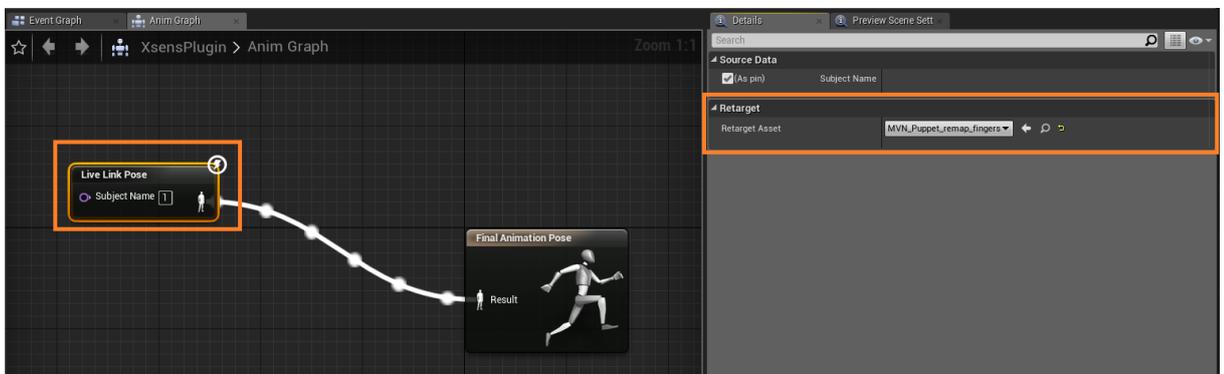




- Go back to the “MVN_remap_example” and make sure “Class Defaults” is selected now you can add the 1 frame animation you just made as the TPose Animation.



- Go back to your Animation Blueprint and select the live link pose node now you can select the retarget asset you just made in details. Use this Animation Blueprint in your scene.



- If you now add your created “Animation Blueprint” in the viewport and run the game, you should see your character move the same way as in MVN.



2.1 Props

To use props, attach them to one of the bones that is in the retarget manager. For example to the left hand. The prop is retargeted in the same way as the body segments using the names Prop1 to Prop4. The props in the stream will always start at Prop1 even if you disabled prop 1 in MVN and are using prop 2.

In the TPose swords have to be placed with the tip pointing towards the x-axis and guns have to be placed pointing downwards.



3 Customer Support

Xsens Technologies B.V. is glad to help you with any questions you may have about the Unreal live plug-in or about the use of the technology for your application. Please contact Xsens Customer Support:

- ➔ by e-mail: www.xsens.com/support
- ➔ telephone: Xsens HQ +31 88 97367 00 / Xsens US office 310-481-1800

To be able to help you, please mention the 8-digit number on the Xsens Sticker, you can find this at the handle of the Suitcase or backpack.