BETA (0.1) - 15.01.2014

Initial Release

Version 0.2 - 19.02.2014

FullBodyBipedIK

1. Better scaling of the effector handles (for extra large/small characters)
2. Fixed a bend constraint bug that occured with very tiny characters
3. Added shortcuts to limb IK mappings (IKSolverFullBodyBiped.leftArmMapping, IKSolverFullBodyBiped.rightArmMapping, …)
4. Added IKMappingLimb.weight for spherical interpolation of the limbs and for the possibility of disabling the effect of IK for a limb.
5. Added reach smoothing modes (FBIKChain.reachSmoothing).
6. Added IKSolverFullBodyBiped.GetLimbMapping(FullBodyBipedEffector).
7. Added IKConstraintBend.SetBendDirection() and IKMappingLimb.SetBendDirection() to enable you to change the bending direction of the limb.
8. Added Amplifier and a demo scene for it.
9. Added OffsetPose.Apply(IKSolverFullBodyBiped solver, float weight, Quaternion rotation)
10. Fixes to Inertia deltaTime issues.
11. Removed IKEffector.Mode, you can use IKEffector.maintainRelativePositionWeight now for smooth blending between the former MaintainAnimatedPosition and MaintainRelativePosition
12. Added OffsetModifier that will be the base abstract class for Inertia, BodyTilt, Amplifier, EffectorOffset and all other FBBIK effector positionOffset modifiers in the future. OffsetModifier works with animatePhysics, uses delegates safely and makes it easy to apply limits to the offset. It will also make it easier for you to create your custom offset modifiers, check out EffectorOffset.cs.
13. Added the TerrainOffset demo that was used to make the AimIK - Redirecting Animation tutorial.
14. Fixed IKSolverLookAt.SetChain. The LookAt solver now works with no head and nulls can be passed to SetChain.
15. Added GenericPoser, which is similar to HandPoser, but enables you to pose hierarchies that have a different number of bones.
16. Added the Interaction System and with it 3 demo scenes: Interaction, Interaction Character2Character and Interaction PickUp2Handed.

LookAtIK

1. Improved IKSolverLookAt. It now looks better with animations that have strong amplitude on the spine such as running and sprinting.

AimIK

1. RotationLimits can be used on the Aim Transform of AimIK now.

Rotation Limits

1. Fixed RotationLimitAngle twist limit when swing limit is 0.

Common

1. Added V3Tools to help dealing with vector algebra.
2. Added Fix Transforms option to all the IK components. Its now possible to use FBBIK and BipedIK with no Animation/Animator component. With Fix Transforms set to true, there will bo more issues with unanimated bones.
3. Clamped all solver weights to 0-1.

Documentation

1. Updated User Manual and Script Reference to 0.2
2. Added diagrams to the Script Reference

Upgrade Guide

1. **Backup your project before upgrading!**
2. The new Fix Transforms option for IK components will be defaulted to true. You can turn it off for a small performance gain on solvers you don't need it for. It will also make any unanimated IK chain reset to it's initial pose in each Update before solving, so if you need additive solving of your CCD/FABRIK/FABRIKRoot chains, turn it off.
3. IKEffector.Mode was changed to IKEffector.maintainRelativePositionWeight, so if you used MaintainRelativePosition anywhere, you will have to change it to effector.maintainRelativePositionWeight = 1.
4. Changes to BodyTilt behaviour, you may need to adjust the OffsetPoses for tilting.

Version 0.21 - 20.02.2014

1. Removed Button.cs, a relic testing script that was unused and not namespaced.

Version 0.22 - TBD

FullBodyBipedIK

1. ShoulderRotator now works for characters that have animatePhysics enabled.
2. Added BipedLimbOrientations. It is now very easy to fix limb bending directions for UMA, 3ds Max and other skeleton types if necessary (ik.solver.SetLimbOrientations(BipedLimbOrientations.UMA);). Removed IKConstraintBend.SetBendDirection() and IKMappingLimb.SetBendDirection().
3. Switched FBBIK limbs from 1DOF joints to 3DOF joints. This does not enforce the limbs to behave like hinge joints anymore and will allow for lossless solving and mapping of the limbs, meaning that if you have FBBIK on with 0 effector weights, the animation will remain the same.
4. Removed IKConstraintBend.BendBone because it is not necessary anymore after switching to 3DOF joints.
5. Restructured FBBIK chain structure to remove object composition cycle. This change is required for upgrading to Unity 4.6 (Beta).

AimIK

1. Added the Aim Swing demo scene.

FABRIKRoot

1. Restructured to remove object composition cycle. This change is required for upgrading to Unity 4.6 (Beta).

Upgrade Guide

1. **Backup your project before upgrading!**
1. IKConstraintBend.BendBone was removed, if you have any code using it, just delete it, will not be necessary anymore.
2. FullBodyBipedIK chain structure was restructured, so all used FBBIK components have to be reinitialized. Just right-click on the FBBIK coponent and select Reinitiate from the context menu. Pull and Reach values of the chains will reset to defaults.
3. FABRIKRoot was restructured and the chains have to be rebuilt in the inspector.