HAnimHumanoid node

Binding pose has all HAnim Joints at zero for "T" binding pose.

HAnim default pose

joints MFNode lists all joints appearing in skeleton field, typically as array of USE nodes

jointBindingPositions/Rotations/Scales fields provide corresponding values to return a HAnimHumanoid to a binding pose. If skeletalConfiguration "BASIC" then all fields are zero.

Spec. Problem: joints field order is said to be irrelevant
Mantis → based on names being present, but bindings arrays are order dependent.

spec problem
Mantis → viewpoints [ ] [Site] ought to include Viewpoint also

Leather

not feasible because parent transforms are applied downwards

- HAnimJoint
  - jointBindingTransform (posns, rotns, scales)
  - children
    - HAnimJoint(s)
    - HAnimSegment(s)

browser scene graph

or

feasible since transformations only applied to segment geometries

- HAnimJoint
  - children
    - jointBindingTransform (posns, rotns, scales)
      - HAnimSegment(s)
    - HAnimJoint(s)

HAnim pose design assumptions

Based on HAnim Humanoid at T pose for binding pose
HAnim Humanoid might have MFNode poses child away
Thus poses might be portable across any HAnimHumanoid

HAnimPose design criteria

assumes T pose, thus Name="T" is zero rotations
for a given HAnim Humanoid

Name SFString identifying a given pose, where
"I" "A" and "T" have predefined semantics

has "access" to parent HAnim Humanoid to insert a pose if needed
cannot modify existing transformation fields (for T pose)

candidate X3D BindableNode since only 1 pose at a time
each HAnim Humanoid would have an independent
stack for these binding nodes. fields are
set_bind, metadata, bindTime, isBound

if fields used for joint Binding are similarly included, likely is
general and comparable. for example
poseBindingPositions, poseBindingRotations

possibly not needed: poseBindingScales,
skinBindingCoords, skinBindingNormals

for precision and terseness and generality,
poseBindingJointNames to match ordering of position/orientation array values

HAnim Pose node interface

HAnimPose

SFString [in out] name

set_bind

metadata

bindTime

isBound

MFString [in out] poseBindingJointNames [allowed HAnim names]

MFVec3f [in out] poseBindingPositions

MFRotation [in out] poseBindingRotations

SFBool [in out] jump TRUE

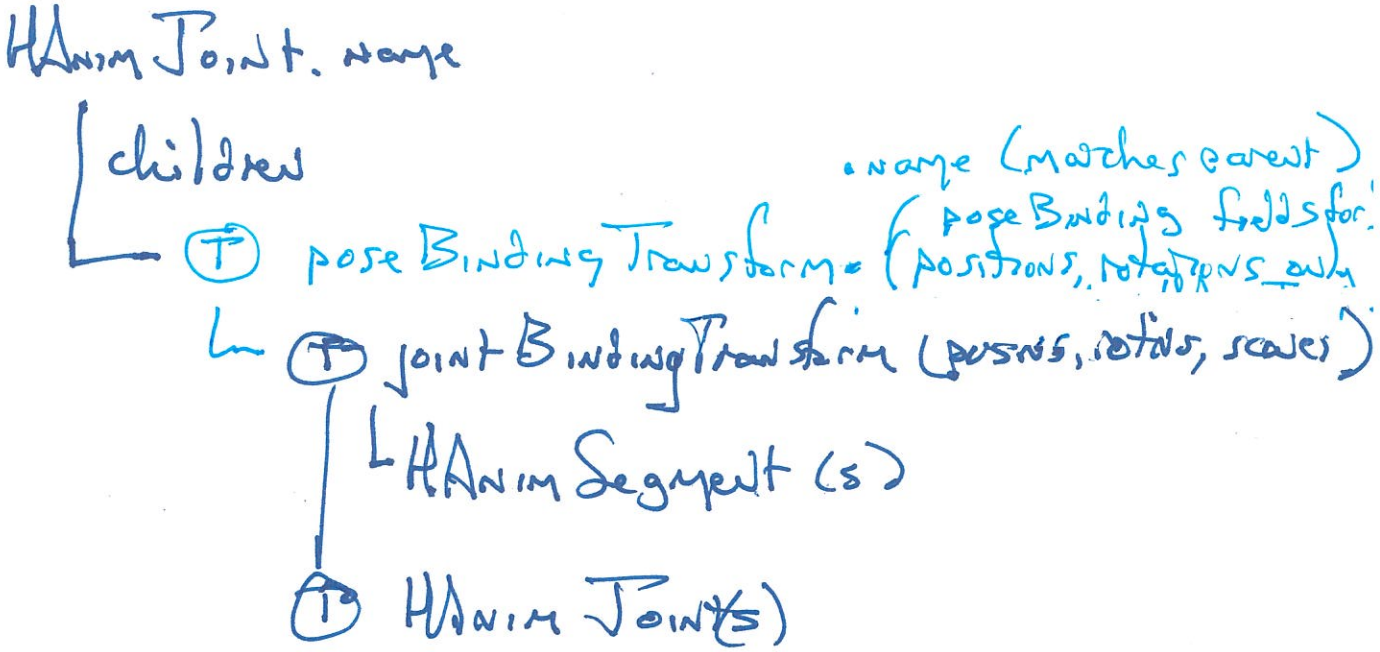
might be used similarly to X3DViewpointNode, indicating whether transitions are immediate or performed as a smooth transition when binding.

However note different semantics to jump field, thus perhaps preferable is

or SFString [in out] transition "IMMEDIATE" ["IMMEDIATE" "SMOOTH"]

or SFBool [in out] immediate TRUE

browser scene graph structure



Animation considerations

Routing of pose information might be testable by sending values to corresponding joints within an HAnim model, but this is not usable in combination with other animations.

Requires constructing ROUTEs by matching array names (at run time, if implemented as a prototype)

Likely prefer development in combination with one or more of the open-source X3D browsers