

The hmi.animation package  
DRAFT VERSION

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August 4, 2009

## 1 Introduction

The hmi.animation package defines classes for animation of objects and humanoids inside a virtual environment. It deals only with abstract descriptions of such environments, but not, for instance, the implementation of visualization virtual environments. As a consequence, it is necessary to combine this package either with simple 2D graphics, or with more complicated 3D graphics. The basic entity defines in this package is the VObject. (“Virtual and/or Visual Object”). Such VObjects have a defined name, they define some set of *attributes* and they define a limited set of physical attributes, like position and orientation in 3D space. Moreover, VObjects are arranged in a hierarchical scene-graph like arrangement, where VObjects are built up from smaller parts. There can be a direct *parent-child relationship* between two VObjects, or some VObject V can be considered a *part* of some other VObject P if it is *recursively* a child of P. This scene-graph takes into account the positioning and orientation (and possibly scaling) of child parts, relative to the position and orientation of their parent VObject. The relative position, called the *translation*, the relative *orientation*, and the relative *scaling* together define the *local transform* of a VObject.

A VirtualObject has a

## 2 XML encoding of VObjects

## 3 Interpolators