Tangible Expressive Animations Without High Costs

Handimation, a software for creating animations and real-time digital performances, has been enhanced with tangible inputs to make the animation process even easier, quicker and cheaper. 3DVIA Virtools played a key role in this project.

**DEVELOPMENT**
Handimation is a general connection interface that links input from different input devices to different virtual 3D objects. The prototype is built in 3DVIA Virtools, a complete development and deployment platform with an innovative approach to interactive 3D content creation. 3D models are loaded into 3DVIA Virtools V6 format. A sequence based interface is overlaid on the animation providing record and replay functionality through data tracks. The interface can be hidden so as to be able to use the entire screen to visualize feedback when animating.

The latest version of Handimation enables more tangible interactions. The enhancements make it possible to have more expressive interaction and support for a broader range of interaction devices. In this way any animation can make use of real-world inputs from traditional controls such as page-turning. To create an affordable solution for input devices, support for the Nintendo Wii remote has been added through the 3DVIA Virtools plug in. The Wii remote offers 3D accelerometer sensing and several buttons as well as 2D movement, providing a flexible input source with high degree of granularity. The tangible version of Handimation makes support for multiple user collaboration as easy as multiple animators can animate the same character by controlling different parts. For example, one person can control the head and face while another walks and makes the body strike different poses. While this can result in quicker animations of individual characters another possibility is to let each animator control an individual character in real-time and then the different animations interact with one another through their characters.

**POSITVE INDUSTRY FEEDBACK**
Handimation with tangible support was presented to the industry during a workshop held in collaboration with Center of Visualization Gteborg (a regional organization promoting visualization) and SVT (the national Swedish broadcast company). Handimation was designed by a professional animator to accelerate the process of creating animations. One goal was to be able to produce a two-minute film in one day, assuming the script was written, dialogue was recorded, and sets were created in advance. Another goal was to let animators create in real-time the movements each virtual character would have before inserting it in a scene. The idea of having an interface based on a sequencer metaphor was born. Seeing animators perform gave rise to the idea to incorporate input from various devices since different devices, e.g. physical marionettes with sensors, are better suited for different types of performances.

**CONCLUSION**
Anders Svensson sums up his experience, “3DVIA Virtools has been an excellent tool in the conceptualization and development of Handimation. It has enabled me to shift focus from the most common bottlenecks of simulation software production to the essential parts of development. 3DVIA Virtools helped create synergy when formulating our ideas and helped us avoid the drawbacks of developing an in-house graphics engine.”