Mobile AR Summit@ISMAR2010

Summary of afternoon workshop group discussion

Authoring Tools

- Areas where authoring tools play a role in AR
  - 3D models
  - Tools for artists and open access
  - Tools for geo-located AR
  - Creation process
  - Tools for creating interactions and behaviors
  - Virtual space tools

3D models

- Issue: there isn't one single format and unlike 2D images, it's very difficult to convert from one format to another, because there is so much specific that a 3D object can include.
- Very professional market, not everyone can easily learn to create 3D content. Each field has its own tools (architects, industry, gaming, movies)
- There is a need for better tools for amateurs to create content. User generated 3D content would make AR much richer.

Tools for artists and open access

- Many artists like to have full freedom, current mobile AR browsers are very limiting. Need much lower-level access to data
- Balance between raw coding (using the APIs of Apple or Android) and higher level programming, using visual programming tools
- Artists would like a graphical platform for coding, with direct access to sensor data. Similar to Maximus P.
- Artists don't really care about the UI of the tools, they need the right frameworks and libraries
- Example framework is openframework.cc, which integrates OpenCV, QuickTime, MaximusP. Still use VisualStudio or XCode, but much easier to use than low-level APIs.

Tools for geo-located AR

- Looking for tools where you can create POIs in the actual virtual environment, e.g. Google Earth like tools
- Blender of 3DMax with real world panorama to place objects
- Also for the masses: Extend Google Streetview to create and place 3D content for AR
- There are lots of different types of authors, the guy with a web page who wants to make a tour or simple POIs vs the guy who wants to use 3d Max, etc to make a very rich immersive environment.

Creation process

- Many steps involved between the creation of content and the actual experience. No direct feedback, making iterating a painful process.
- Web doesn't require Photoshop, you can use MS-paint. It decoupled the need for tools. That and view source made the web
- Need for debuggers: for example ability to directly view the content source inline, and preferably even edit it. Like FireBug, we want LayarBug.
- Not only for static content, also debugging the behavior is really difficult in current AR browsers.

Tools for creating interactions

- Look at the gaming world. Many games have world editors that are great for changing the world environment and also allow for scripting behavior.
- Current AR browsers limit behavior to certain pre-defined triggers or events. E.g. Junaio event model. The event model is great, but it restricts authors to a limited set.
- Better is to expose the AR components via standard web models (like javascript and DOM)
- Are web-based concepts suited for AR?
  - AR may also need fast updates of views, with bidirectional sockets instead of Ajax

Virtual space tools

- We envision the possibility to create AR content directly in space, not from behind your computer
- There are already tools that register a physical object and create a virtual version of it; purely camera-based
- Also tools making use of structured light, e.g. for 3D scanning of people.