SMIL 2.0

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http://www.x-smiles.org/
Outline

- SMIL 2.0 – history – quick tutorial
- Modules and Profiles
- SMIL Use Cases
- SMIL in X-Smiles
- SMIL demos in X-Smiles
- Multimedia Messaging System (MMS)
- Future of SMIL
SMIL 2.0 Overview

- Synchronized Multimedia Integration Language
- Recommendation specified by W3C
- XML-based language
- Designed for Internet use
- Easy to write, like HTML
- Doesn’t define media formats, only integrates them
History

- Dec 1995 - SMIL designing started
- Nov 1997 - SMIL 1.0 Recommendation
- Mar 1998 - First SMIL implementation
- Aug 1999 - First public draft of SMIL 2.0
- Aug 2001 - SMIL 2.0 Recommendation
Typical SMIL Elements

- `<head>` - Head element
- `<meta>` - Meta data, such as author, copyright...
- `<layout>` - Layout of the presentation
- `<region>` - Region describing positioning
- `<body>` - Body element
- `<seq>` - Sequential time container
- `<par>` - Parallel time container
- `<img>, `<audio>, `<video>` - Media to be played
- `<switch>` - Selects between elements
- `<a>, `<area>` - Linking
SMIL 2.0 Document Example

```xml
<smil>
  <head>
    <layout>
      <region id="reg1" top="0" left="0" width="300" height="200" />
      <region id="reg2" left="300" width="300" height="200" />
    </layout>
  </head>
  <body>
    <seq>
      <img id="id1" src="intro.jpg" region="reg1" dur="4s" />
      <audio id="id2" src="music.wav" dur="2s" />
      <par>
        <video id="id3" src="movie5s.mpg" region="reg1" />
        <img id="id4" src="intro.jpg" begin="3s" region="reg2" />
      </par>
    </seq>
  </body>
</smil>
```
Modularization and profiling

- Modularization breaks an XML language into modules
  - One module has only a small set of elements
  - Reusable element packages

- Profiling combines modules into usable languages
  - Small profiles for small devices
  - Complex profiles for big machines
SMIL 2.0 Profiles

- SMIL 2.0 divided into 45 modules
- Modules grouped into functional areas:
  1. Structure
  2. Metainformation
  3. Layout
  4. Timing
  5. Media Objects
  6. Linking
  7. Content Control
  8. Animation
  9. Transitions
  10. Time Manipulations

- W3C: SMIL 2.0 Basic Profile
- W3C: SMIL 2.0 Full Profile
- 3GPP: SMIL MMS profile
Use cases for SMIL

- Multimedia Messaging
- Slideshows
- Advertisements
- Internet TV
- Education
- Corporate communications
- Product information
- User’s Guides
- Net meetings
- etc.
Some SMIL Editing Tools

- Oratrix: GRiNS authoring tools for SMIL 2.0
- RealNetworks: RealSlideshow
- Sausage Software: SMIL Composer SuperTool
- Alliare: SMIL Tag Pack for HomeSite and Cold Fusion Studio
- INRIA: LimSee1 SMIL editor

Excellent SMIL 2.0 editors still not available
SMIL Support in Players

2.0 • Oratrix GRiNS player: SMIL 2.0 Language
2.0 • IE 5: many modules (XHTML+SMIL)
2.0 • X-Smiles 0.71: SMIL 2.0 Basic Profile
2.0 • QuickTime Player 6
2.0 • RealOne Player
1.0 • Compaq HPAS
1.0 • Productivity Works Lp Player
1.0 • SOJA from Helio
1.0 • S2M2 by NIST
1.0 • Schmunzel by SunTREC Salzburg
X-Smiles Browser

- XML browser
  - XSL FO, SVG, SMIL, XForms...
  - XSLT transformations
  - ECMAScript
- Java-based
  - Portability, available components, JMF
- Open-source
SMIL support in X-Smiles 0.71

- SMIL 2.0 Basic profile
  + Event Timing module, Basic Animations, ...
- Can be used as a standalone player
- Can be used as a Java-component

```java
// Create the SMIL player
JSMILPlayer smil = new JSMILPlayer();
// Initialize with the filename (could also be URL)
if (smil.init(filename) == false)
    System.out.println("ERROR initializing "+filename);
// Create a frame and add the SMIL component to it
JFrame frame = new JFrame("Simple SMIL player");
frame.setSize(600,400);
frame.getContentPane().add(smil, BorderLayout.CENTER);
frame.show();
// Start the SMIL presentation
smil.start();
```
SMIL features in X-Smiles

- Supports XHTML+CSS (colors/fonts)
- Supports ECMAScript
  - click, mousedown, mouseover...
- Can integrate several media formats
  - Images: GIF, JPEG and PNG
  - Audio: AIFF, AU, AVI, MIDI, MP3, OGG and WAV
  - Video: AVI, MPEG-1, QT
  - XML: SMIL, XSL FO, XHTML and SVG
- Uses Java Media Framework for audio/video
- Works also without JMF
SMIL Demos

- Example
- Ahma Gulo Gulo
- Drinks
- Bikes
- SVG in SMIL

Try it out at www.x-smiles.org!
Multimedia Messaging System

- A subset of SMIL 2.0 Basic profile
  - Very restricted
- Supports text, audio (amr), images (png/jpg), video (3gpp)
- Included in the latest 2.5G phones
  - Nokia 7650 / 6610, Ericsson T68i, Siemens S57…
- Possible to send MMS to e-mail address
  - SMIL and media files delivered as attachments
MMS Example

<smil>
  <head>
    <layout>
      <root-layout height="208" width="176" />
      <region id="Video" height="69\%" width="100\%" left="0\%" top="0\%" fit="meet" />
      <region id="Text" height="30\%" width="100\%" left="0\%" top="69\%" fit="scroll" />
    </layout>
  </head>
  <body>
    <par dur="20000ms">
      <video src="Video.3gp" region="Video" />
      <text src="Lataa_No.txt" region="Text" />
    </par>
    ...
  </body>
</smil>
MMS demonstration

- Video + text + audio
Future of SMIL

- SMIL 3.0 ??
  - Extensions for professional multimedia authoring
  - Support for 3D audio
- 3G phones
  - Superset of SMIL 2.0 Basic profile
    + Event Timing Module, …
- More SMIL modules into SVG 1.2
The End

Thanks for Coming!