Paper Session I: Implementations of OSC

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## Current OSC Implementations

- CPS
- Csound
- EyesWeb platform
- Grainwave
- HTM
- Intakt
- Java
- Kroonde
- Macromedia Director
- Macromedia Flash
- Max/MSP
- Objective C
- Open Sound World
- Pd
- Perl
- PHP
- Picker
- Python
- Reaktor
- RTMix
- Sodaconstructor
- SpinOSC
- Squeak (via Siren)
- SuperCollider
- "The Toaster" (hardware)
- Traktor
- VisualWorks Smalltalk
## Anatomy of an OSC Implementation

<table>
<thead>
<tr>
<th>Feature</th>
<th>Send</th>
<th>Receive</th>
</tr>
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<tbody>
<tr>
<td>Move Packets</td>
<td>Interface to Network Services</td>
<td></td>
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<tr>
<td>Addresses</td>
<td>Build a string like “/foo/bar”</td>
<td>(parse)</td>
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<td></td>
<td>(OSC-string padding)</td>
<td>Construct address tree</td>
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<td></td>
<td></td>
<td>Dynamically change it</td>
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<td>Dispatching in it</td>
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<td></td>
<td>Pattern Matching</td>
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<tr>
<td>Arguments</td>
<td>Interface to type system; Network byte order</td>
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<tr>
<td>Bundles</td>
<td>Group messages</td>
<td>(parse)</td>
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<tr>
<td></td>
<td></td>
<td>Atomicity</td>
</tr>
<tr>
<td>Time Tags</td>
<td>Know current absolute time</td>
<td></td>
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<td></td>
<td>Specify future times</td>
<td>Scheduler</td>
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<tr>
<td>Queries</td>
<td>Keep track of pending answer(s)</td>
<td>Format + address answer (multithreading)</td>
</tr>
</tbody>
</table>
Incomplete Implementations

• Many implementations are incomplete
• They’re still useful
• E.g., many are send-only: useful for making interfaces
• E.g., most don’t implement time tags, so messages take effect when received
• CNMAT and the developer’s email list can help make implementations more complete
Notable Implementations: Open Sound World ("OSW")

- Graphical dataflow programming model
  - Automatically generates OSC address space from the nesting structure
- Rich support for queries
Notable Implementations: SuperCollider

- Very early adoption of OSC (1998)
- Pioneered type tags
- Many interesting msgs. to SC environment itself (“play a sound file”, “run this code”…)
- Implements queries and NTP sync
- Prog. lang. client/DSP Server architecture
  - Ultra-lightweight OSC between them
Notable Implementations: flosc

- OSC for Macromedia Flash
- Enables slick animated web front-ends to sound control
- Implementation based on XML