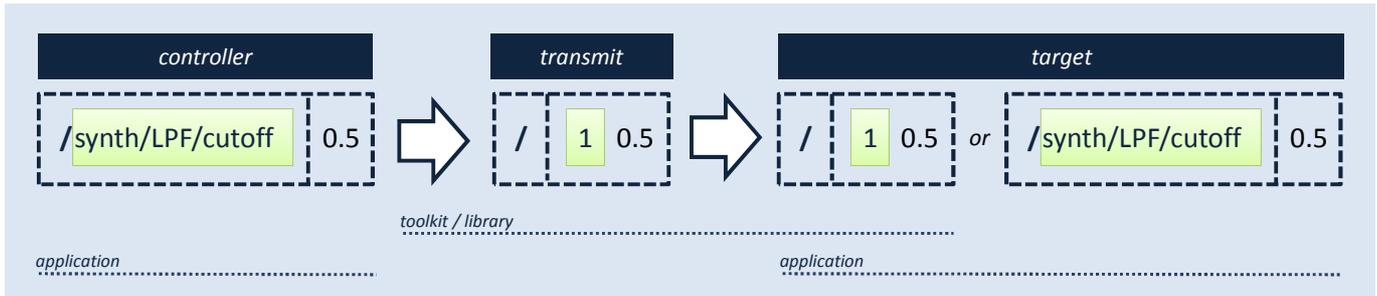


Improving the Efficiency of

Open Sound Control (OSC) with Compressed Address Strings

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1a. Current OSC Standard (v1.1)

- Address strings are transmitted repeatedly
 - /synth/LPF/cutoff 0.50
 - /synth/LPF/cutoff 0.51
 - ...
- Wastes communication bandwidth
- Inefficient parsing

1b. Proposed Method

- uncouples user interface and transmission layers**
 - OSC v1.1 address strings are intuitive for humans
 - integers are more efficient for computers

Algorithm

- setup:** Convert address string into integer token
 - needs to be performed only once
 - read from a mapping file
 - 1, /synth/LPF/cutoff
 - 2, /synth/LPF/resonance
 - or request from the target
- send:** Transmit integer token instead of address string
 - / 1 0.50
 - / 1 0.51
 - ...
- receive:** Parse integer token, or convert back to string

2. Benefits



- Less data to transmit**
 - more actual content
 - less dropped packets
 - increased battery life
- Less parsing**
 - more CPU time for application code
 - less latency
- Fully OSC v1.1 compliant**
 - recycle: existing OSC targets can take benefit of the method
 - OSC v1.1 and compressed OSC streams can be mixed
- Zero-configuration possibilities**
 - targets publish their address spaces via Zeroconf
 - controllers browse and adapt to available targets

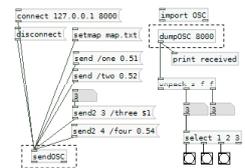
3. Specification

address string	data	act	description
/synth/LPF/cutoff	0.50	set	standard OSC v1.1
/	1 0.50	set	proposed method
/?	7 0.50	set	set multiple values
/synth/LPF/cutoff		get	request mapping info
//*		get	request all mappings

- set/get action deduced from data vector length
- compressed/standard OSC deduced from address string
- wildcard support with "/"? " bitmask

4. Implementations

- Library modifications for**
 - OSCx (Pd)
 - oscP5 (Processing)
 - oscpack (e.g., TUIO)
 - source code available for download



- Easy Adaptation**
 - new OscMessage("/synth/LPF/cutoff")
 - new OscMessage2("/synth/LPF/cutoff")
 - new OscMessage2(1)
 - ... or bind compressed tokens to widgets during the setup phase
- Efficient parsing**
 - if (msg.data[0] == 1)...

5. Demo

