IEEE P1722.1
Composite Controls

Stephen Turner & Eliot Blennerhasset, AudioScience, Inc.
Introduction

• Controls can only have an array of Values of one type

• In reality some Controls have functionality which need Values of different types.

• Example #1. Radio tuner control:
  o Band (Selector)
  o Frequency (Linear)
  o RDBS/RDS Info (String)
Introduction (Cont.)

• Example #2: AES/EBU Receiver
  o Validity bits (array of Boolean)
  o Sample Rate (Linear),
  o S/PDIF or AES/EBU mode (Selector)
Solution #1 – Use the Unit

• Use a AUDIO_UNIT, VIDEO_UNIT or SENSOR_UNIT as a container for Controls that need to be grouped together.

<table>
<thead>
<tr>
<th>Control Name</th>
<th>Value Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status</td>
<td>Array of Boolean</td>
</tr>
<tr>
<td>Sample Rate</td>
<td>Linear</td>
</tr>
<tr>
<td>Electrical Format</td>
<td>Selector</td>
</tr>
</tbody>
</table>

• Is this using a UNIT as it was intended?
Solution #2 – The Block

• The Block would be a new descriptor that is used as a container for controls that need to be grouped together.

• It would be like a UNIT except that it does not care about clock domain.

BLOCK, Name = “AES/EBU Receiver”

CONTROL
Name = Status
Value Type = Array of Boolean

CONTROL
Name = Sample Rate
Value Type = Linear

CONTROL
Name = Electrical Format
Value Type = Selector
Solution #3 – The Composite Control

- Rework the Control descriptor to allow (arrays of) Values of different Types

```
CONTROL
Name = AES/EBU Receiver

Value
Name = Status,
Type = Array of Boolean

Value
Name = Sample Rate,
Type = Linear

Value
Name = Electrical Format,
Type = Selector
```
Which One?

• We favor Solution #3

• Would like a consensus of the group before investigating this in more detail.