## Mapping Example

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In this document, the XML and graphical representation of the wave field synthesis (WFS) application mapped onto the virtual shapes platform (VSP) are shown.

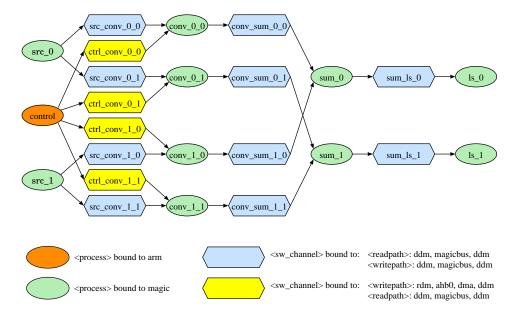


Figure 1: WFS Mapping.

```
01 <mapping>
    <!-- process bindings -->
02
    <binding name="binding_src_0" xsi:type="computation">
      <process name="src_0"/>
04
05
      cessor name="arm"/>
06
    </binding>
07
    <binding name="binding_src_1" xsi:type="computation">
08
      cess name="src_1"/>
09
      cprocessor name="arm"/>
10
11
    </binding>
12
13
    <binding name="binding_control" xsi:type="computation">
      control"/>
14
      cessor name="arm"/>
15
    </binding>
16
17
    <binding name="binding_conv_0_0" xsi:type="computation">
18
      cprocess name="convolver_wrapper_0_0"/>
19
20
      cessor name="magic"/>
    </binding>
21
22
    <binding name="binding_conv_0_1" xsi:type="computation">
23
      cess name="convolver_wrapper_0_1"/>
24
25
      cessor name="magic"/>
26
    </binding>
27
    <binding name="binding_conv_1_0" xsi:type="computation">
28
      cprocess name="convolver_wrapper_1_0"/>
29
30
      cprocessor name="magic"/>
    </binding>
31
```

```
<binding name="binding-conv-1-1" xsi:type="computation">
33
       cprocess name="convolver_wrapper_1_1"/>
34
       cprocessor name="magic"/>
35
     </binding>
36
37
     <binding name="binding_sum_0" xsi:type="computation">
38
       cess name="sum_0"/>
39
40
       cprocessor name="magic"/>
     </binding>
41
42
43
     <binding name="binding_sum_1" xsi:type="computation">
44
       cess name="sum_1"/>
45
       cessor name="magic"/>
     </binding>
46
47
     <binding name="binding_ls_0" xsi:type="computation">
48
49
       cess name="ls_0"/>
       cessor name="magic"/>
50
     </binding>
51
52
     <binding name="binding_ls_1" xsi:type="computation">
53
54
       cess name="ls_1"/>
       <\!\operatorname{processor\ name}="\operatorname{magic"}/\!>
55
56
     </binding>
57
     <!-- channel bindings -->
58
     <binding name="binding_src_conv_0_0" xsi:type="communication">
59
       <sw_channel name="fifo_src_conv_0_0"/>
60
61
       <writepath name="ddmddm"/>
       <readpath name="ddmddm"/>
62
     </binding>
63
64
     <binding name="binding_src_conv_0_1" xsi:type="communication">
65
66
       <sw_channel name="fifo_src_conv_0_1"/>
       <writepath name="ddmddm"/>
67
68
       <readpath name="ddmddm"/>
69
     </binding>
70
     <binding name="binding_src_conv_1_0" xsi:type="communication">
71
       <sw_channel name="fifo_src_conv_1_0"/>
72
       <writepath name="ddmddm"/>
73
       <readpath name="ddmddm"/>
74
     </binding>
75
76
     <binding name="binding_src_conv_1_1" xsi:type="communication">
77
       <sw_channel name="fifo_src_conv_1_1"/>
78
79
       <writepath name="ddmddm"/>
       <readpath name="ddmddm"/>
80
81
     </binding>
82
     <binding name="binding_ctrl_conv_0_0" xsi:type="communication">
83
       <sw_channel name="fifo_ctrl_conv_0_0"/>
84
85
       <writepath name="armrdmddm"/>
86
       <readpath name="ddmddm"/>
     </binding>
87
88
     <binding name="binding_ctrl_conv_0_1" xsi:type="communication">
89
       <sw_channel name="fifo_ctrl_conv_0_1"/>
90
       <writepath name="armrdmddm"/>
91
       <readpath name="ddmddm"/>
92
     </binding>
93
94
     <binding name="binding_ctrl_conv_1_0" xsi:type="communication">
95
       <sw_channel name="fifo_ctrl_conv_1_0"/>
96
       <writepath name="armrdmddm"/>
97
       <readpath name="ddmddm"/>
98
     </binding>
99
100
     <binding name="binding_ctrl_conv_1_1" xsi:type="communication">
101
       <sw_channel name="fifo_ctrl_conv_1_1"/>
102
       <writepath name="armrdmddm"/>
103
104
       <readpath name="ddmddm"/>
105
     </binding>
106
```

```
<binding name="binding-conv-sum-0-0" xsi:type="communication">
107
       <sw_channel name="fifo_conv_sum_0_0"/>
108
       <writepath name="ddmddm"/>
109
       <readpath name="ddmddm"/>
110
111
     </binding>
112
     <binding name="binding_conv_sum_0_1" xsi:type="communication">
113
114
       <sw_channel name="fifo_conv_sum_0_1"/>
       <writepath name="ddmddm"/>
115
       <readpath name="ddmddm"/>
116
117
     </binding>
118
119
     <binding name="binding_conv_sum_1_0" xsi:type="communication">
       <sw-channel name="fifo_conv_sum_1_0"/>
120
121
       <writepath name="ddmddm"/>
       <readpath name="ddmddm"/>
122
123
     </binding>
124
     <binding name="binding_conv_sum_1_1" xsi:type="communication">
125
126
       <sw_channel name="fifo_conv_sum_1_1"/>
       <writepath name="ddmddm"/>
127
128
       <readpath name="ddmddm"/>
     </binding>
129
130
     <binding name="binding_sum_ls_0" xsi:type="communication">
131
       <sw-channel name="fifo-sum-ls-0"/>
132
       <writepath name="ddmddm"/>
133
       <readpath name="ddmddm"/>
134
135
     </binding>
136
     <binding name="binding_sum_ls_1" xsi:type="communication">
137
138
       <sw_channel name="fifo_sum_ls_1"/>
       <writepath name="ddmddm"/>
139
140
       <readpath name="ddmddm"/>
     </binding>
141
142
     <!-- schedules -->
143
     <schedule name="armschedule" type="static">
144
       <resource name="arm"/>
145
       <origin name="control">
146
         <configuration name="priority" value="1"/>
147
148
       </origin>
     </schedule>
149
150
     <schedule name="magicschedule" type="static">
151
       <resource name="magic"/>
152
153
       <origin name="src_0">
         <configuration name="priority" value="0"/>
154
155
       </origin>
       <origin name="src_1">
156
         <configuration name="priority" value="1"/>
158
       </origin>
       <origin name="convolver_wrapper_0_0">
159
160
         <configuration name="priority" value="2"/>
161
       </origin>
       <origin name="convolver_wrapper_0_1">
162
         <configuration name="priority" value="3"/>
163
164
       </origin>
       <origin name="convolver_wrapper_1_0">
165
         <configuration name="priority" value="4"/>
166
167
       <origin name="convolver_wrapper_1_1">
168
         <configuration name="priority" value="5"/>
169
170
       </origin>
171
       <origin name="sum_0">
         <configuration name="priority" value="6"/>
172
173
       </origin>
       <origin name="sum_1">
174
         <configuration name="priority" value="7"/>
175
176
       </origin>
       <origin name="ls_0">
177
178
         <configuration name="priority" value="8"/>
       </origin>
179
       <origin name="ls_1">
180
```

```
<configuration name="priority" value="9"/>
181
182
        </origin>
     </schedule>
183
184
     <schedule name="ahb0schedule" type="fifo">
185
       <resource name="ahb0"/>
186
187
     </schedule>
188
     <\! {\tt schedule \ name} = "dmaschedule" \ type = "fifo" > \\
189
       <resource name="dma"/>
190
191
     </schedule>
192
     <schedule name="magicbusschedule" type="fifo">
193
       <resource name="magicbus"/>
194
     </schedule>
196 </mapping>
```

Listing 1: XML description of the WFS mapping.