

```
1  /*+++++
...  +++++
2
3  $Id: rgbvideo.c,v 1.9 2001/10/02 21:12:54 guyc Exp $
4
5  Copyright (c) 2001 BeComm Corporation
6
7  Filename:
8
9      rgbvideo.c
10
11 Abstract:
12
13     Displays rgb video to the default rgbdisplay device.
14
15 Owner:
16
17     Guy Carpenter (guyc)
18
19 -----
...  ---*/
20
21 #define SOS_DEBUG_ZONE "/beads/rgbvideo"
22
23 #include <sosstrings.h>
24 #include <sosmultimedia.h>
25
26 SOS_SOURCE_VERSION("$Id: rgbvideo.c,v 1.9 2001/10/02 21:12:54 guyc Exp
...  $");
27
28 /*+++++
...  +++++
29 Named Constants
30 -----
...  ---*/
31
32 /*
33  * Name of bead
34  */
35 static const char BEAD_NAME[] = "rgbvideo";
36
37 // REVISIT - device name should not be hard coded.
38 /*
39  * Name of the device we use for output.
40  */
```

```
41 #define DEVICE_CLASS "rgbdisplay"
42 #define DEVICE_NAME "default"
43
44 /*+++++
...
45 Structs
46 -----
...
---*/
47
48 typedef struct {
49     char *           DeviceName;
50     void *           FrameBuffer;
51     size_t           FrameBufferSize;
52     SOS_VIDEO_FORMAT VideoFormat;
53     SOS_IRGBDISPLAY * IRgbDisplay;
54     SOS_ISAMPLECLOCK * IRenderClock;
55     SOS_ISAMPLECLOCK * IMasterClock;
56     SOS_IVIDEOCONTEXT * IVideoContext;
57     SOS_VIDEO_TIMESTAMP FrameNumber;
58     SOS_BOOLEAN       DisplayReady;
59     SOS_BOOLEAN       ClocksReady;
60 } RGBVIDEO_CONTEXT;
61
62
63 /*+++++
...
64 Context Stuff
65 -----
...
---*/
66
67 static
68 void
69 RgbVideo_ContextDestroy(
70     RGBVIDEO_CONTEXT * Context
71 )
72 {
73     if (Context) {
74
75         if (Context->FrameBuffer) {
76             SOS_Mem_Free(Context->FrameBuffer);
77         }
78
79         if (Context->IRgbDisplay) {
80             SOS_RegObject_InterfaceRelease(Context->IRgbDisplay);
81         }
82     }
83 }
```

```
82
83     if (Context->DeviceName) {
84         SOS_Mem_Free(Context->DeviceName);
85     }
86
87     if (Context->IMasterClock) {
88         SOS_Interface_Release(Context->IMasterClock);
89     }
90
91     if (Context->IRenderClock) {
92         SOS_Interface_Release(Context->IRenderClock);
93     }
94
95     if (Context->IVideoContext) {
96         SOS_Interface_Release(Context->IVideoContext);
97     }
98
99     SOS_Mem_Free(Context);
100 }
101 }
102
103 /*
104  * Find the device and get the necessary interface
105  */
106 static
107 SOS_STATUS
108 RgbVideo_DeviceInit(
109     RGBVIDEO_CONTEXT *    Context
110 )
111 {
112     SOS_STATUS status;
113
114     SOS_REGOBJECT *device;
115
116 /*
117  * NOTE : if InterfaceGet fails it will set IRgbDisplay
118  * to NULL for us.
119  */
120     status = SOS_Registry_DeviceGet(
121         DEVICE_CLASS,
122         Context->DeviceName,
123         &device);
124
125     if (SOS_SUCCEEDED(status)) {
126         status = SOS_RegObject_InterfaceGet(
```

```
127         device,
128         SOS_IRGBDISPLAY_ID,
129         (void**)&Context->IRgbDisplay
130     );
131
132 }
133 SOS_RegObject_Release(device);
134
135 return status;
136 }
137
138 static
139 RGBVIDEO_CONTEXT *
140 RgbVideo_ContextCreate(
141     void
142 )
143 {
144     SOS_STATUS status = SOS_Success;
145     RGBVIDEO_CONTEXT *context;
146
147     context = SOS_Mem_Alloc(sizeof(*context));
148     if (context) {
149         SOS_memset(context, 0, sizeof(*context));
150
151         /*
152          * Revisit - this should not be hard coded
153          */
154         context->DeviceName = SOS_strdup(DEVICE_NAME);
155
156         status = RgbVideo_DeviceInit(context);
157
158     } else {
159         /* failed mallocing context */
160         status = SOS_ErrorResourceAllocation;
161     }
162
163     /*
164      * If anything went wrong we should cleanup
165      */
166     if (SOS_FAILED(status)) {
167         RgbVideo_ContextDestroy(context);
168         context = NULL;
169     }
170
171     return context;
```

```
172 }
173
174
175 /*+++++
... +++++
176
177 +++++
... +++++*/
178 static
179 SOS_STATUS
180 DisplayPrepare(
181     RGBVIDEO_CONTEXT *    Context,
182     SOS_MESSAGE *        Message
183 )
184 {
185     SOS_STATUS status = SOS_Success;
186
187     status = Context->IVideoContext->FormatGet(
188         Context->IVideoContext,
189         Message,
190         &Context->VideoFormat,
191         NULL /* don't care about timestamp */
192     );
193
194     if (SOS_SUCCEEDED(status)) {
195         status = Context->IRgbDisplay->Open(
196             Context->IRgbDisplay,
197             Context->VideoFormat.Width,
198             Context->VideoFormat.Height,
199             SOS_VIDEO_RGB24
200         );
201     }
202
203     return status;
204 }
205
206 SOS_STATUS
207 ContextClockGet(
208     SOS_PATH *            Path,
209     const char *          Name,
210     SOS_ISAMPLECLOCK **   ISampleClock
211 )
212 {
213     SOS_STATUS status;
214     SOS_RECTOBJECT object;
```

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