

```
1 /*+++++
... +++++
2
3 Copyright (c) 2001 BeComm Corporation
4
5 Filename:
6
7     sampleclock.c
8
9 Group Name:
10
11     todo
12
13 Group Overview:
14
15     todo
16
17 Owner:
18
19     Guy Carpenter (guyc) 16-Aug-2001
20
21 -----
... ---*/
22 #define SOS_DEBUG_ZONE "/classes/sampleclock"
23
24 #include <sosstrings.h>
25 #include <sosmultimedia.h>
26
27 SOS_SOURCE_VERSION (
28     "$Id: sampleclock.c,v 1.13 2001/10/23 16:40:01 guyc Exp $"
29 );
30
31 /*+++++
... +++++
32 Definitions
33 +++++
... +---*/
34 #define SAMPLECLOCK_CLASS_NAME "sampleclock"
35 #define SAMPLECLOCK_SCHEME_NAME "sampleclock"
36
37 #define LOCK(C)     SOS_Lock_Acquire(C->Lock)
38 #define UNLOCK(C)  SOS_Lock_Release(C->Lock)
39 /*+++++
... +++++
40 #define
```

```
41 ++++++
... +****/
42 static
43 SOS_REGOBJECTCLASS * g_SampleClockClass = NULL;
44
45 static
46 SOS_STRINGTABLE * g_NamedClockTable = NULL;
47
48 static
49 SOS_LOCK * g_NamedClockTableLock = NULL;
50
51 /*+++++
... +++++
52 Macros
53 ++++++
... +****/
54
55 #define RESOLVE(0) SOS_REGOBJECT_RESOLVE(0,g_SampleClockClass)
56 #define ISVALID(0) SOS_REGOBJECT_ISVALID(0,g_SampleClockClass)
57 #define IRESOLVE(I) SOS_INTERFACE_RESOLVE(I,g_SampleClockClass)
58 #define IISVALID(I) SOS_INTERFACE_ISVALID(I,g_SampleClockClass)
59
60 /*+++++
... +++++
61 Types
62 ++++++
... +****/
63
64 typedef struct _SAMPLECLOCK {
65     SOS_CLOCK_TICK Time;
66     SOS_UINT32 Sample;
67     SOS_UINT32 Frequency;
68     SOS_UINT32 Divisor;
69     SOS_BOOLEAN IsSet;
70     SOS_LOCK * Lock;
71     char * Name;
72 } SAMPLECLOCK;
73
74 /*+++++
... +++++
75 Basic Object Methods
76 ++++++
... +****/
77 static
78 SOS_STATIC
```

```
79 SampleClock_Init(  
80     SOS_REGOBJECT *    Object  
81 )  
82 {  
83     SOS_STATUS status = SOS_Success;  
84  
85     SAMPLECLOCK *sampleclock = SOS_Mem_Alloc(sizeof(SAMPLECLOCK));  
86     SOS_memset(sampleclock, 0, sizeof(SAMPLECLOCK));  
87  
88     /* lock the sampleclock until the first call to set */  
89     sampleclock->Lock = SOS_Lock_Create();  
90  
91     SOS_RegObject_DataPut(Object, sampleclock);  
92  
93     return status;  
94 }  
95  
96 static  
97 void  
98 SampleClock_Uninit(  
99     SOS_REGOBJECT *    Object  
100 )  
101 {  
102     if (ISVALID(Object)) {  
103         SAMPLECLOCK *sampleclock = RESOLVE(Object);  
104  
105         if (sampleclock->Name) {  
106             SOS_StringTable_ElementRemove(  
107                 g_NamedClockTable,  
108                 sampleclock->Name,  
109                 NULL  
110             );  
111         }  
112  
113         SOS_Lock_Destroy(sampleclock->Lock);  
114         SOS_Mem_Free(sampleclock->Name);  
115         SOS_Mem_Free(sampleclock);  
116     }  
117 }  
118  
119 /*+++++  
... +++++  
120 Support functions  
121 +++++
```

```
122 static
123 void
124 FactorReduce(
125     SOS_UINT32    *Numerator,
126     SOS_UINT32    *Denominator
127 )
128 {
129     SOS_UINT32 numerator = *Numerator;
130     SOS_UINT32 denominator = *Denominator;
131     SOS_UINT32 factor=2;
132
133     while (factor<=numerator && factor<=denominator) {
134         if (!(numerator%factor) &&
135             !(denominator%factor)) {
136             numerator/=factor;
137             denominator/=factor;
138         } else {
139             if (factor>2) factor++;
140             factor++;
141         }
142     }
143
144     SOS_DEBUGOUT_MINOR_EVENT(
145         "Rationalized %lu/%lu to %lu/%lu\n",
146         *Numerator,
147         *Denominator,
148         numerator,
149         denominator
150     );
151
152     *Numerator = numerator;
153     *Denominator = denominator;
154 }
155
156 /*+++++
... +++++
157
158 ++++++
... +++++/
159 static
160 SOS_STATUS
161 SampleClock_NameSet(
162     SOS_REGOBJECT *          ClockObject,
163     const char *            Name
164 )
```

```
165 {
166     SAMPLECLOCK * clock = RESOLVE(ClockObject);
167     SOS_STATUS status;
168     if (!Name || !*Name) {
169         /* clock is unnamed */
170         status = SOS_Success;
171     } else if (clock && !clock->Name) {
172         clock->Name = SOS_strdup(Name);
173         if (clock->Name) {
174             status = SOS_StringTable_ElementPut(
175                 g_NamedClockTable,
176                 clock->Name,
177                 ClockObject
178             );
179         } else {
180             status = SOS_ErrorResourceAllocation;
181         }
182     } else {
183         status = SOS_ErrorParameter;
184     }
185
186     return status;
187 }
188
189 static
190 SOS_STATUS
191 SampleClock_GetByName(
192     const char *          Name,
193     SOS_REGOBJECT **     ClockObject
194 )
195 {
196     SOS_STATUS status;
197
198     status = SOS_StringTable_ElementPeek(
199         g_NamedClockTable,
200         Name,
201         (void**)ClockObject
202     );
203
204     if (SOS_SUCCEEDED(status)) {
205         SOS_RegObject_Reference(*ClockObject);
206     }
207
208     return status;
209 }
```

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