

```
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 1.14 2001/11/09 19:50:18 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 globals
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_STATUS
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 }
210
211 static
212 SOS_STATUS
213 SampleClock_FindOrCreateByName(
214     const char *          Name,
215     SOS_REGOBJECT **     ClockObject
216 )
217 {
218     SOS_STATUS status;
219
220     SOS_Lock_Acquire(g_NamedClockTableLock);
221
222     if (Name && *Name) {
223         status = SampleClock_GetByName(Name, ClockObject);
224     } else {
225         status = SOS_ErrorParameter;
226     }
227 }
```

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