Ezcaster - Task queue service (playlist)

The playlist service can be viewed as a server that executes jobs from a job-list. Every job (play-list item) is described by a static portion - what is entered in a play-list editor by the user, and dynamic portion - status of execution for this job. At any given time there is no more that one curren job for a play-list. All the jobs that are above the current item are either “DONE” or “SKIPPED”

The service can be accessed by XML-RPC protocol over HTTP. The port number can be calculated as follows PORT = 4942 + PGM*16 + N where PGM is the number of a ProgramChannel service (zero based) and N is the layer number (N=0 corresponds to the MAIN layer or GR1 if there is no MAIN layer). All durations a transferred as the number of frames if it's an integer number or in Julian Days when it's a floaing point type.

Calculation of calendar time to Julian days

Data types and structures

AVCStaticInfo

```
 fields:   string "uri" - Media material ID
         string "player" - Player name
         int "start_type" - Item start mode
            0 - Manual
        1 - Sequence
        2 - HardStart (at "start_time")
            3 - FromStart (for secondary events)
            4 - FromEnd (for secondary events)
         double "start_time" - start time for HardStart items, -1 if not set
         int "tc_orig" - defines the origin from which IN and OUT points are
calculated
           0 - in_point and out_point are counted from 0 offset
           1 - in_point and out_point are counter from the IN point of the
media material
           10 - Segment 1
           .....
           40 - Segment 30
         int "in_point" - timecode of the first frame to be played
         int "out_point" - timecode of the first frame after the last frame
to be played
         int "duration" - total duration of an event. The media will be
loopped if the duration
                          if greater that OUT-IN. -1 for infinite events.
         int "key1_mode" - Keyer1 switching mode (actual action is defined
in the service config)
            0 -  no change
            1 -  turn keyer on
            2 -  turn keyer off
```

```
         int "key1_speed" - Keyer1 transition speed (actual action is
defined in the service config)
            -1 - fast
            -2 - medium
            -3 - slow
         int "key2_mode" - Keyer2 switching mode (actual action is defined
in the service config)
            0 -  no change
            1 -  turn keyer on
            2 -  turn keyer off
         int "key2_speed" - Keyer2 transition speed (actual action is
defined in the service config)
            -1 - fast
            -2 - medium
            -3 - slow
         int "key3_mode" - Keyer3 switching mode (actual action is defined
in the service config)
            0 -  no change
            1 -  turn keyer on
            2 -  turn keyer off
         int "key3_speed" - Keyer3 transition speed (actual action is
defined in the service config)
            -1 - fast
            -2 - medium
            -3 - slow
         int "key4_mode" - Keyer4 switching mode (actual action is defined
in the service config)
            0 -  no change
            1 -  turn keyer on
            2 -  turn keyer off
         int "key4_speed" - Keyer4 transition speed (actual action is
defined in the service config)
            -1 - fast
            -2 - medium
            -3 - slow
     int "trans_mode" - transition mode
            0 - CUT
            1 - V-MIX
            2 - X-MIX
            3 -OVERLAY (media id is taken from "trans_wipe")
     int "trans_speed" - transition speed (V and X)
            -1 - fast
            -2 - medium
            -3 - slow
         string "trans_wipe" - a wipe image used for V and X or a clip id
for OVERLAY
     string "title" - play-list item title
     string "comment" - play-list item comment
     string "group" - play-list group name
     string "type" -  play-list item type
     int "gpi1_mode" - GPI 1 mode (actual action is defined in the service
```

```
config)
        0 -  No change
            1 -  Switch ON
            2 -  Switch OFF
         string "gpi1_val" - GPI 1 parameter (actual action is defined in
the service config)
     int "gpi2_mode" - GPI 2 mode (actual action is defined in the service
config)
        0 -  No change
            1 -  Switch ON
            2 -  Switch OFF
         string "gpi2_val" - GPI 2 parameter (actual action is defined in
the service config)
     int "gpi3_mode" - GPI 3 mode (actual action is defined in the service
config)
        0 -  No change
            1 -  Switch ON
            2 -  Switch OFF
         string "gpi3_val" - GPI 3 parameter (actual action is defined in
the service config)
     int "gpi4_mode" - GPI 4 mode (actual action is defined in the service
config)
        0 -  No change
            1 -  Switch ON
            2 -  Switch OFF
         string "gpi4_val" - GPI 4 parameter (actual action is defined in
the service config)
     int "gpi5_mode" - GPI 5 mode (actual action is defined in the service
config)
        0 -  No change
            1 -  Switch ON
            2 -  Switch OFF
         string "gpi5_val" - GPI 5 parameter (actual action is defined in
the service config)
     int "gpi6_mode" - GPI 6 mode (actual action is defined in the service
config)
        0 -  No change
            1 -  Switch ON
            2 -  Switch OFF
         string "gpi6_val" - GPI 6 parameter (actual action is defined in
the service config)
     int "gpi7_mode" - GPI 7 mode (actual action is defined in the service
config)
        0 -  No change
            1 -  Switch ON
            2 -  Switch OFF
         string "gpi7_val" - GPI 7 parameter (actual action is defined in
the service config)
     int "gpi8_mode" - GPI 8 mode (actual action is defined in the service
config)
        0 -  No change
```

```
            1 -  Switch ON
            2 -  Switch OFF
         string "gpi8_val" - GPI 8 parameter (actual action is defined in
the service config)
         string - "item_id" - Recon Key
         int "secondary_autogen" - This flag enables or disable automatic,
rule-based
                                   secondary event generation
        0 -  auto-generation is disabled
            1 -  auto-generation is enabled
         int "purge_date" - A date (Julian Day) when the media material will
be purged.
                            -1 if not set.

         int "lead_out" - duration of the item lead out animation in frames
         int "aud_transp" - audio transparency value for the layer.
                            Possible values are -1 to 100. When 0 - no audio
from previous layers will be
                            heard. When 100 - full mixing of previous layers
audio composition.
                            -1 - default audio transparency value base on
the layer transparency seetings.
         string "item_color" - item color value in RRGGBB format where RR,
GG , BB are hex values.
                               Empty string for default.
         int "end_mode" - End mode column value for playlist item. Possible
values are:
            0 - NONE - Playlist items ends and the next playlist item
becomes current according it's start type
            1 - HOLD - Playlist item automatically goes into HOLD state
            2 - GROUP - Playlist will jump to the beginning for the group
for this item
            3 - SKIP - This playlist item will be skipped and will not start
            4 - STOP - Playlist execution will be stopped. The next item
will require a "play" or
                       some kind or hard time start type.
         array - "params" - External parametrization for graphics
compositions. Each element of the array is
                            a structure with the following fields:
            string - "name" - name of the parameter
            string - "val" - value of the parameter
         int "transparency" - layer transparency.
             0 - NONE - Layer transparency will have the default value
according to program channel configuration
             1 - ON - Layer will be semi-transparent
             2 - OFF - Layer will be opaque
```

AVCDynInfo

```
 fields:
```

```
        int "id" - play-list item id
        double "start_time" - actual play back start time for an item or -1
(defualt if field not present) if has not started yet
        double "stop_time" - actual play bacl stop time for an item or -1
(defualt if field not present) if has not stopped yet
        double "plan_start" - expected start time for an item ot -1 (defualt
if field not present) if unknown (manual start type)
    double "plan_stop" -  expected stop time for an utem or -1 (defualt if
field not present) in unknown (infinite duration)
    int "pos" - currently displaing frame number (not set or -1 if field not
present)
    int "state" - current state if an item
          0 - Stopped (defualt if field not present)
          1 - Cueing
          2 - Ready
          3 - Preroll
          4 - Playing
          5 - Paused
    int "exit_code" - job completion code
          0 - still playing
          1 - playback was interrupted or the entire item was skipped by the
user
          2 - playlist item completed successfully (defualt if field not
present)
          3 - an error was detected buring playback
    int "loop_start" - a flag that shows if an item was cued in loopping
mode. In this mode
                           only the total duration can be changed, out-point
alway stays at
                           the value it had during cue.  (false if field not
present)
    string "player" - name of a player that was chosen for playback (empty
string if field not present)
    int "err_code" - extended error code for completed jobs
          0 - no error (defualt if field not present)
          1 - unknown error
          2 - connection to the rendering player was lost during playback
```

AVCItemInfo

```
 fields:
        AVCStaticInfo "st" - static information about a play-list item
        AVCDynInfo "dyn" - information about an execution state of an item.
This field may not
                           be present if an item was just added to a
playlist and has never
                           been cued.
        array(AVCStaticInfo) "secondary" - list of user specified secondary
events
        array(AVCStaticInfo) "auto_secondary" - list of secondary events
```

```
genertd by AutoGen
        int "id" - play-list item id
```

Methods

get_status

provides the current status

```
parameters: none
Return value: structure
fields int "status"
       string "message"
```

add_item

Adds a new play-list item

```
parameter 0 - int - ID of a playlist item before which we want to insert a
newly created item.
                    Use -1 to add the item at the end of the playlist.
parameter 1 - AVCStaticInfo - static information which will be set for a
newly created item.
parameter 2 - array(AVCStaticInfo) - optional array of secondary events for
a newly created item.
```

set_item

changes static information of a play-list item

```
parameter 0 -  int - ID of a play-list item to be changed
paremeter 1 -  struct AVCStaticInfo - static information which will be set
for the item.
parameter 2 - array(AVCStaticInfo) - optional array of secondary events for
the item.

return value - none
```

del_item

removes an item from the play-list

```
parameter 0 - int - ID of an element to be deleted
```

```
return value - none
```

get_page_by_id

retrieves a part of the play-list

```
parameter 0 - int - ID of the first item of a part of the playlist that will
be returned. If -1
                    the first item will be the item that is currently being
executed.
parameter 1 - int - maximum number of item to be returned
parameter 2 - double - maximum duration in seconds be returned
return value - struct
 fields: double "cur_time" - current time of the play-list service
    *int "cur_id" - ID a play-list item that is currently being executed
    *int "jump_id" - ID of a play-list item that is currently marked for a
JUMP operation.
    *int "switch" - a flags that show if a JUMP operation is in the
SWITCH_WAIT state.
    *"inf" - array of struct AVCItemInfo
    *"done" - array of struct AVCItemInfo
```

get_page

retrieves a part of the play-list.

```
parameter 0 - int - number of the first item of a part of the playlist that
will be returned.
parameter 1 - int - maximum number of item to be returned
return value - struct
 fields: int "total" - total number of items in the play-list
         double "cur_time" - current time of the play-list service
                "inf" - array of struct AVCItemInfo
```

get_running

retrieves information of the currently playing item.

```
parameters - none
return value - struct
 fields: double "cur_time" - current time of the play-list service
         AVCDynInfo "dyn" - this fields is present only if the current item
has at
                            least been cued.
```

pretake

CUEs the current item.

```
parameters - none
return value - none
```

skip

Gives a command to skip the task.

```
parameters: none
return value: none
```

start_list

starts playlist execution.

```
parameters - none
return value - none
```

stop_list

skips the curren item and goes on to the next one

```
parameters - none
return value - none
```

is_list_running

retrieves a flag if the play-list is currently running

```
parameter - none
return value - int - 1, play list is running
                     0, play list is not running
```

start

starts playback from the rurrent item

```
parameter 0 - double - startup delay in seconds
return value - none
```

reset

stops playlist execution and makes current the very first item of the play list

```
parameters - none
return value - none
```

jump

allows to change the sequence of the play-list execution and make current the specified item.

```
parameter 0 - int - ID of an item that will be made current
return value - none
```

pause

Sets the pause mode for the current task.

```
parameters: none
return value: none
```

unpause

Resumes the execution of the task.

```
parameters: none
return value: none
```

is_paused

Flag whether the pause mode has been set.

```
parameters: none
return value: int - 1 if pause mode was set, 0 otherwise
```

is_synced

retrieves a flag if the play-list is currently synchrozed to another play-list service

```
parameter - none
return value - struct
 fields: int "synced" - 0 - playlist is in free run
                        1 - playlist is synchronized, players are connected
```

```
                        2 - playlist is synchronized, players are not
connected
         string "src" - remote service address
```

is_hard_time_preempt

A flag that indicates whether preempt mode is enabled or disabled. Parameters: none
Return value: * int - 1 if preempt mode has been set, 0 - otherwise.

```
Parameters: None
return value:
  * int - 1 if preempt mode has been set, 0 - otherwise
```

show_pvw

Switches the pvw output of the switcher to the player following the current clip.

```
parameters: none
return value: none
```

Mixer functions

merge_out_mixer

Adds a new value to the current mix line. If the transmitted value starts with an = symbol, then the current mixing line will be overwritten.

```
parameters: string is the command for the mixer.
return value: none
```

enable_out_mixer

Turns the mixer into operation.

```
parameters:
     int - 0 - disable, 1 - enable,
     or string - "off" / "no" / "false" - disable, "on" / "yes" / "true" -
enable

return value: none
```

get_out_mixer

Reads the current state and mixer line.

```
parameters: none
return value:
    struct
         "On" - int - 0 - disabled, not 0 - enabled
         "Mix" - string - mixer string
```