Automation Playout Controller System

https://www.marchive.co.kr/

https://www.marchive.mov/

Professional company specializing in digital media management platform that realizes customer value



Media Management Solution News Room Information Solution



Playout Solution



2

Radio Solution

1. APC(Automation Playout Controller)

• Playout Automation System?

The APC(Automation Playout Controller) is a system mainly used by broadcasters and playout agencies. It receives or direc tly creates broadcasting schedules(schedule) so that the playout of broadcasting videos can be arranged in order under th e control of equipment such as video servers. In addition to broadcasting stations and playout agencies, APC can be used for in-house broadcasting and YouTube live broadcasting to automate playout tasks.



The figure above shows a simplified workflow of the APC system.

The person in charge of playout receives the broadcasting schedule on APC or the broadcasting schedule created outside, and controls th e equipment to playout the video. Viewers can watch the broadcast on various media such as TV, PC, and mobile. APC is a system for play out videos so that viewers can watch the broadcasting in order of the broadcasting schedule.

2. APC introduction

APC (Automation Playout Controller) is an automated playout control system that controls equipment such as video server, CG, and Keyer to playout programs according to a schedule.

It can be configured with an all-in-one type Channel In a Box (aka CIAB) or a traditional type, and can be selected dependin g on the characteristics of the system you can envision.

Multi-channel playout can be made, and stability are ensured by the redundant or triple configuration or more. All running c omponents operate in a software fashion.



3. Configuration of APC

1) All-in-one type - Channel In A Box(CIAB)

CIAB is an All-in-One type APC, consisting of SEC, DCS, and PCS in one hardware.

The PCS that acts as a Master Switcher, the SEC that can create and monitor operation schedule events, and the DCS that con trols the integrated broadcasting equipment make a compact playout system in one hardware.

Default output is SDI, and RTMP, UDP, SRT, RTP, RTSP, etc. can be used to stream videos on the web or mobile as an option.

It can be used by playout agency, cable TV, PP, etc., and is a system applicable to real-time YouTube



• 3. Configuration of APC

2) Configuration of traditional type Automation

It is a traditional APC for playout that controls the video server mainly used in Korea. It consists of an SEC that creates a schedule event and provides a screen for the user to monitor, and a DCS that controls broadcasting equipment.

Multi-channel can be configured, and all components are operated by software. The system can be operated reliably with a redundant or triple or higher configuration. When configuring a multi-channel playout system, you can monitor the chan nels at a glance through the MCC.



	PCS (Playback Controller System)	 Master Switcher function is provided as SW (Including Keyer function : Player, CG, Logo, etc.) Default output: SDI Output options: Support streaming protocols such as RTMP, UDP, SRT, RTP, RTSP 	
(\

	- Direct control of PCS and broadcasting equipment (Master Switcher, Video Server, CG, etc.)
DCS	- Playout for a certain period of time is ensured by the stored event queue in case the SEC does
(Device Control	not operate normally
Sever)	- Real-time monitoring of events, equipment-related status and logs

SEC	- Schedule editing and playout events/equipment status monitoring(timeline type monitoring screen provided)
(Schedule Event	- Schedule created for each event is retrieved and playout is made according to the schedule
Controller)	- Program event function (pre-title, post-title, CM, program, etc. are bundled into one event)

MCC (Multi Channel Controller)	 Monitoring of playout events and equipment status for all channels in operation Timeline type monitoring Detailed events for the channel can be checked
Controller)	- Detailed events for the channel can be checked

5. Details of APC functions

1) PCS (Playback Controller System)

It, as a software, is a Master Switcher used by broadcasters. Video in the format used by most broadcasters can be played, and CG and Logo can be created and playout is executed together with the video. Playout video or live streaming can be re corded or streamed in real time. In an environment where Master Switcher is unavailable, the function of Master Switcher ca n be implemented by PCS.

[Main Functions]

- Master Switcher function as SW
- Media Playback : Supports most broadcasting formats
- Keyer function: CG and Logo playout
- Audio mixing function
- Recoding function : support MXF, MP4, etc.
- Default output: SDI
- Optional output: Support streaming protocols such as RTMP, UDP, SRT, RTP, RTSP
- CG Editor Tool provided (separate application)



• 5. Details of APC functions

2) DCS (Device Control Server)

DCS controls broadcasting equipment (switcher, video server, router switcher, Logo & CG, etc.).

When the broadcasting begins, DCS receives event information from the SEC, controls the equipment according to the sch edule, and playout the video. In the case of SEC failure during playout, playout can continue with the event information in DCS for a certain period of time, so there is no worry in system operation.

Uninterrupted playout is ensured because unexpected situations that may occur in DCS can be prevented by the redundan t or triple configuration of equipment.

[Main Functions]

- Control of Master Switch, Video Server, CG, etc. (PCS control when configuring CIAB)
- Monitoring function provided: check event list and status by channel/equipment
- Save event and control equipment logs in real time and provide a confirmation screen
- Preparing for failure situations by configuring and synchronizing equipment with redundant / triple configuration or more

ᢞᢞ	C Device Control Server 1.0.0.10 - DCS1									_			
с. 20	rent 121	^{time} -06-2	יר וי	1:02:49	Ac N	^{tive} 1ain	_{Name} DCS1						
Event & Device Status Common Log Device Control Log													
		CJ2											
No				Start Time						Media ID	Start TC		
		to 2											
12	Au	to 2	021-00	5-21 14:02	2:04:07	00:00:48:01	OnAir	CJ1_DEC1	D:\CIAB\Me	edia\04_한샘_하이그로시_패키지_뷰티_HG슬라이	딩_CJ.mxf 00:00:00:00		
13	Au	to 2	021-06	5-21 14:02	2:52:08	00:00:39:21	Cued	CJ1_DEC1	D:\CIAB\Me	edia\IT_김혜수단독;화이트_AHC아이크림7.mxf	00:00:00:00		
									D:\CIAB\Me	edia\PD_필터청소_캐리어공청기.mxf			
					4:41:12				D:\CIAB\Me	edia\TPD_브랜드_몬테밀라노.mxf			
									D:\CIAB\Me	edia\TPD_타이틀_웰릭스처리기19.mxf			
								CJ1_DEC1	D:\CIAB\Me	adia\밀라타이틀.mxf			
							Loaded		D:\CIAB\Me	ədia\송지오 cta(컬러x).mxf			
									D:\CIAB\Me	adia\캐리어 공기청정기 티저 클린.mxf			
20			021-04	5-21 14:08	3:51:24	00:00:36:13	Loaded	CJ1_DEC1	D:\CIAB\Me	edia\캐리어 공기청정기 티저.mxf	00:00:00		
	Device Control & Status Reset Reset all												
		1_DEC1	P	aying.Cu	eDone	00:00:45:05	192.168.1	.162 CJ1		Current 14:02:04:07, 00:00:48:01 - Next 14:02:5	2:08, 00:00:39:21		
		1_DEC2				00:00:00:00							
4	Ċ1.	1_MSW1	1 C	onnecte	d		192.168.1	.162 CJ1		Current 14:02:04:07, Main: V1, A1 - Next 14:02	:52:08, Main: V1, A1		
5		2_DEC1	D	isconnec	ted	00:00:00:00	192.168.1						
6	Cl	2_DEC2	D	isconnec	ted	00:00:00:00	192.168.1	.162					

5. Details of APC functions

3) SEC (Schedule Event Controller)

The SEC retrieves the schedule arranged for each event, prepares it for playout according to the schedule, and provides a screen for the user to monitor. Check materials mapped to the schedule event, and provides an information about the material's availability and status value (Eq ual/Short/Long) that compares the material length and production time. This function is performed as a background scan and does not cause any burden on the system operation.

Monitoring may become difficult when the program is on playout with many events (pre-title/post-title/CM/program, etc.), and the grouping function allows you to group events and monitor them at a glance.

[Main Functions]]

- Automatic loading and editing of schedule
- Timeline-based monitoring function (up to 4 channels at the same time)
- Program event function: Events such as pre-title/post-title/ CM/program are grouped into one program event.
- Provide material status information: information on the ma terial availability and information on the difference of leng th between material length and production time.
- Provide equipment status monitoring screen



5. Details of APC functions

4) MCC (Multi Channel Controller)

Monitoring many channels may not be easy, especially when there are many channels. This difficulty can be solved by MCC. You can quickly respond to failures and operate the system reliably by checking the status of all channels at a glance.

[Main Functions]

- Monitoring screen for the status of the entire channel playout events is provided in the form of a timeline (deta ils of events can be checked)
- Monitor the status of equipment used in the channel.





6. Redundancy plan for APC

1) DCS redundancy plan

In the case of redundancy, the backup system checks the operation status of the main system in real time, and control is taken over and automatically switched in the event of a failure, ensuring uninterrupted playout. More than triple red undancy can be configured for a more secure system.





6. Redundancy plan for APC

2) SEC redundancy plan

SEC backup brings up the events in the main when SEC main starts running. Like DCS, SEC backup checks the ope ration status of the main in real time, takes over control in case of a failure, and switches automatically, ensuring u ninterrupted playout. More than triple redundancy can be configured for a more secure system.





6. Redundancy plan for APC

3) Event redundancy plan

SEC checks the status of the video server, the event equipment, in real time through DCS.

In the event of a failure with the main video server equipment, the main video server equipment and the backup equipment are auto matically disconnected and keep operating, ensuring secure playout.

In case of a trouble with the video server equipment, which is an event equipment, uninterrupted playout is ensured.



Thank You

yhkim@marchive.co.kr