OPERATION MANUAL

MulticamLSM

Version 21.1 | May 2025

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What's New?

This Operation Manual has not been subject to changes related to new features for release 21.1.

1. Overview

The aim of this manual is to familiarize the operator with the Multicam software for EVS High Definition and Standard Definition servers, and its Remote Panel, so as to learn as quickly and efficiently as possible the basic operations.

The Clip & Playlist management functions allow the operator to keep up to up to 10800 clips. These features allow, among others, users to replay all or some of stored clips, manage them, as well as create and manage playlists. A playlist consists of a list of clips (90 playlists can be defined) with video and audio transitions.

The XNet option networks, via the SDTI network, the EVS video servers into a fully integrated production environment. Any clip recorded by any server on the network is available instantly for editing and/or play-out to any other operator.

The **Splitscreen** (horizontal, vertical or mix) option displays simultaneously two synchronized actions side by side on the main program output.

2. Working Interfaces

2.1. Overview

Several User Interfaces

The EVS server can be operated from several user interfaces that can work in a complementary manner:

- VGA interface
- Remote Panel interface

Initial Configuration

Before you start using Multicam with the LSM Remote Panel, you need to ensure that the parameters are properly set for the configuration line you want to run.
If clips are stored with certain parameters and the operator wishes to change the parameter values afterwards, those clips and playlists will not change. It is thus important to set the requested parameters first.

The Multicam Setup and Configuration modules of the VGA interface are used for configuration and maintenance operations. A web-based user interface for distant configuration is also available. Technical and Operational Setup menus are also available from the Remote Panel to configure the most important Multicam parameters.

The Multicam Setup window is used to select the configuration you want to run Multicam with, since EVS disk recorders have the ability to run various configurations.

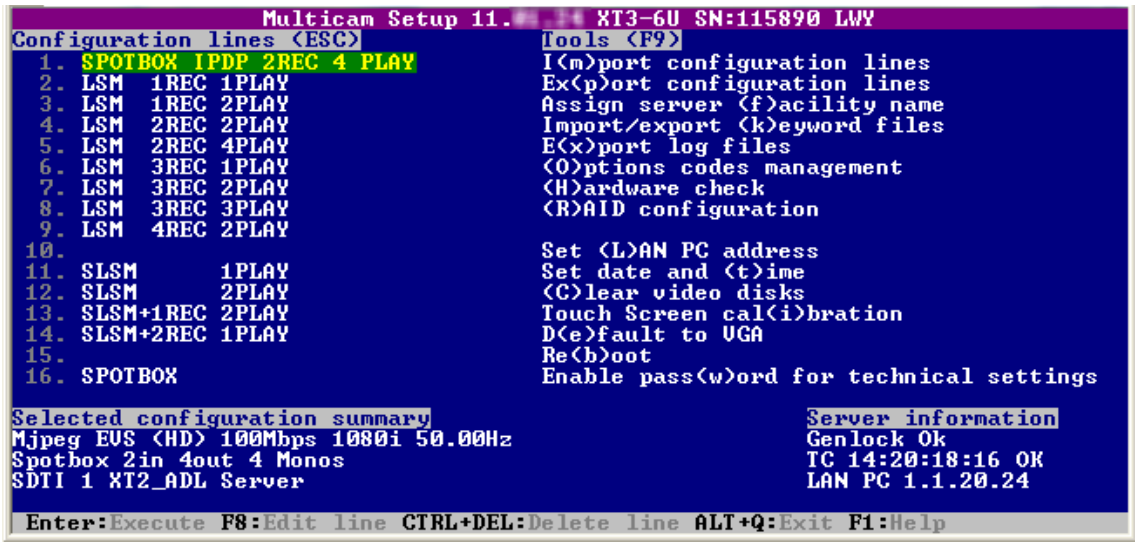
The Multicam Configuration window and included tabs allow users to define the channel configuration associated to a configuration line, audio and video parameters, and all operational parameters.

You will find detailed information on Multicam configuration from the VGA and from the Remote Panels in the EVS Server Configuration manuals.

VGA Interface

When turning on the EVS mainframe, the first step is the PC boot sequence, then the Multicam Setup window is displayed:

- If a default application has been previously selected, this application will start automatically after a few seconds if no key is hit.
- If a default application hasn't been defined or if the space bar is hit, the system will remain in the Multicam Setup window and wait for the operator's next command.



When Multicam is started in the selected configuration, the operational windows allow users to perform simple actions.

The Operational windows include the Keyword window, the Search Clip window, the Clip window, and the Playlist/Timeline window. They are described in this manual, as well as the possible actions from these windows.

Remote Panel Interface

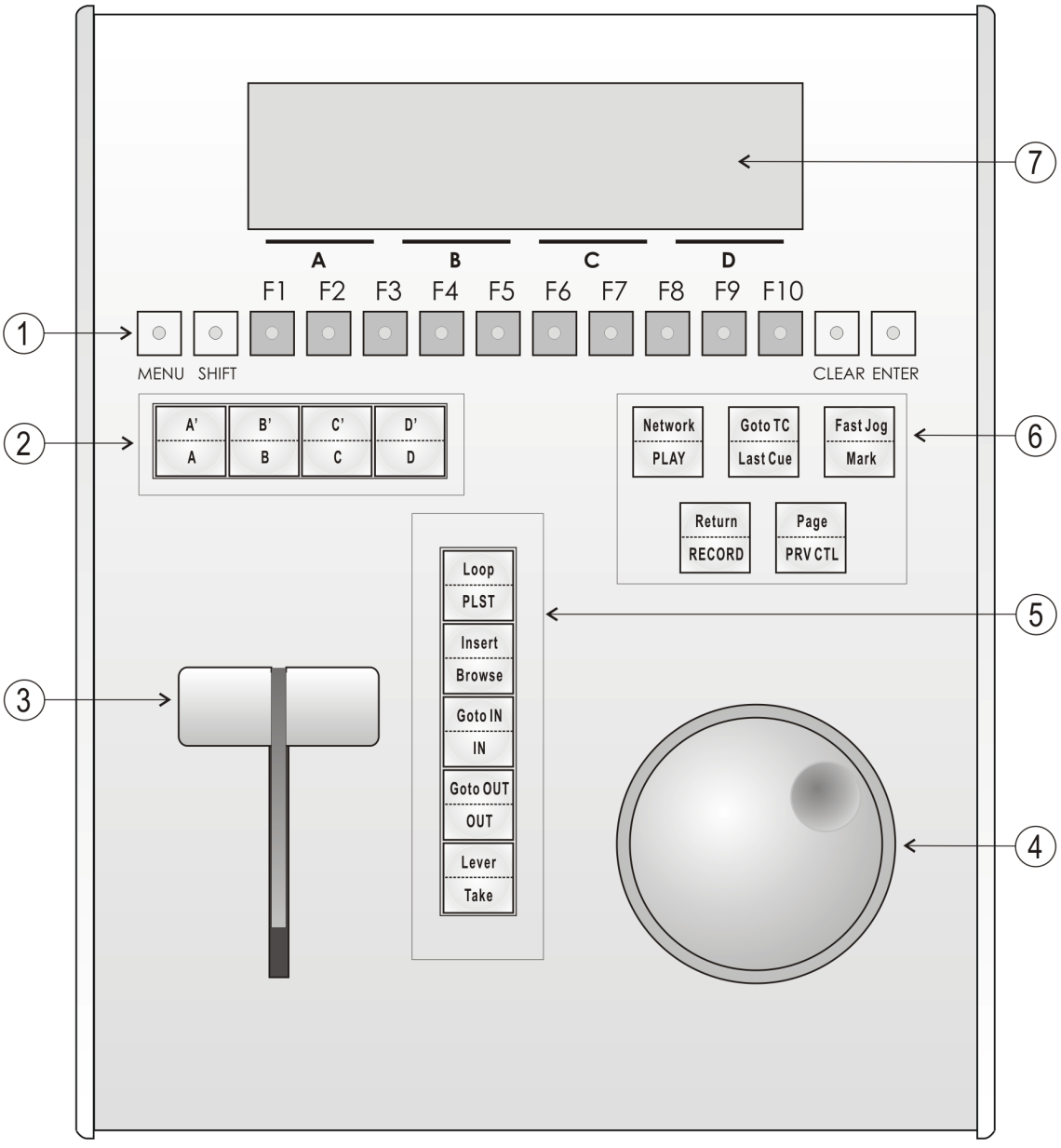
The Remote Panel keys and main menu are described in the following sections:

- See section "Remote Panel Controls" on page 5
- See section "Remote Panel Operations" on page 12

2.2. Remote Panel Controls

2.2.1. General Layout

The following diagram shows the Remote Panel along with a brief description of each area.



The operational buttons have primary and secondary functions and are divided into upper and lower sections. By pressing the **SHIFT** button, you gain access to the secondary functions.

Ref.	Command	Function
1.	F-keys & small buttons	Multi-purpose keys
2.	Soft keys	With LCD display, allows the operator to enter the Multicam MENU system
3.	Lever	Initiates slow motion and playlist replay
4.	Jog dial	Used to accurately cue disk recorder
5.	Operational block 1	
	PLST	Initiates active playlist
	LOOP	Applies the loop function enabled in the **Loop button** parameter in the Operational Setup menu of the Remote Panel, EVS Controller section. See section "Loop" on page 16.
	BROWSE	Used to browse through clips, playlists, cue points
	INSERT	Used in playlist management to insert clips into a playlist
	IN	Sets Mark IN at the current position
	GOTO IN	Goes to the defined Mark IN
	OUT	Sets Mark OUT at the current position
	GOTO OUT	Goes to the defined Mark OUT
	TAKE	In PGM+PRV mode, pressing this button swaps cameras on PGM and PRV monitors In Multi-PGM mode, pressing this button toggles between CAM selection and PGM selection modes. In 2 PGM mode, when both PGMs are selected on the Remote Panel, pressing this button swaps the content loaded on PGM1 with the one loaded on PGM2 and vice-versa. In Playlist Edit mode, pressing this button inserts the clip loaded on the PRV channel into current playlist.
	LEVER	Changes the lever range to secondary mode (see setup menu for range selection)

Ref.	Command	Function
6.	Operational Block 2	
	PLAY	Initiates playback
	NETWORK	Enters the XNet menu (connects to other servers on the network).
	LAST CUE	Re-cues EVS server to previous cue point
	GOTO TC	Allows timecode entry, with «F» keys
	FAST JOG	Used with jog dial for rapid, manual re-cue. This mode is automatically reset after PLAY/LIVE commands.
	MARK	Used to enter re-usable cue points (256 cycling cues).
	RECORD	Initiates “E2E” mode
	RETURN	Inside a clip, allows the operator to return to the same picture inside the record train, if it still exists.
	PRV CTL	Enables/disables the Preview Control mode.
	PAGE	Selects current clip page, from 1 to 10.
7.	LCD Display	Provides current status of system

2.2.2. LED Colors

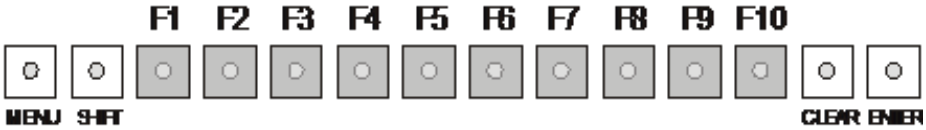
A selected key lights red.

When a key lights green, it means a value in relation with this key exists.

For example: F1 to F0 keys:

- A green light means a clip has been stored in relation with the key.
- A green flashing light means a clip is being created.
- A red light means the clip associated to the key is playing or is ready to play.
- A red flashing light means a clip is being deleted (in network mode).

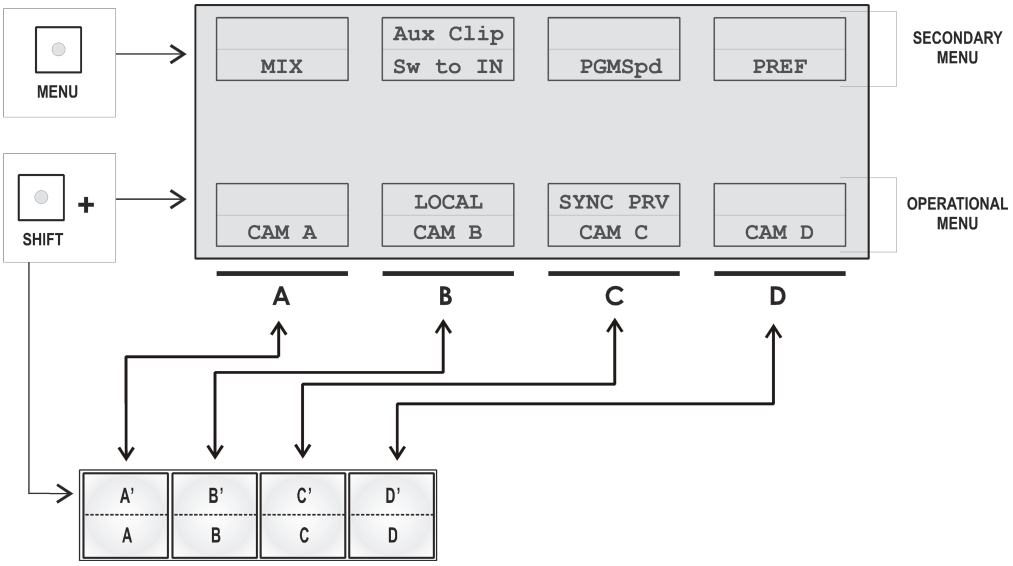
2.2.3. Function Keys & Small Keys



Key	Function
MENU	Provides access to the secondary menu. Also used as **CANCEL** in some messages when confirmation is required. Note: **SHIFT+MENU** returns to Main menu
SHIFT	Enables use of the secondary key functions. Note: This key remains active even if released, until another key has been hit.
F1 – F10	Stores or recalls clips, recalls playlists, and enters timecode information.
CLEAR	Is a multi-purpose key that clears clips or playlists, and clears IN and OUT points.
ENTER	Appends clips at the end of the current playlist and validates other options and messages.

2.2.4. Soft Keys and LCD Display

The soft keys have primary and secondary functions and are divided into upper and lower sections.



The LCD display is divided into two menus.

- To access the secondary functions in the operational menu (A' to D'), press the **SHIFT** button.
- To access the secondary menu, press **MENU** from the remote controller. This menu is used to define settings that do not require regular changes, without having to return to the Setup menu.
- To return to the Operational menu, press the **MENU** key again.
- To return to the Main menu in Multicam, press **SHIFT+MENU**.

2.2.5. Jog Dial

The jog dial allows the operator to pass into Search mode and thus to choose exactly the Short OUT or Short IN image.

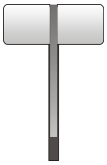
Move the jog dial clockwise to search forward and move it counter-clockwise to search backwards. One revolution of the jog dial will produce a jump of approximately 35 frames. When using the Fast mode, this number is multiplied by a factor defined in the Setup menu.

The jog dial is also used to:

- Set parameters in the Setup menu.
- Browse inside the clip database, the cue points or the current playlist. Refer to the explanation of the **Browse** function for more details.

The jog dial is active at all times when the system is in Play and Record modes.

2.2.6. Lever



The lever is used to start a play or to modify the slow motion speed. Its run can be of two different types depending on the lever mode. In standard mode, the lever run goes from 0 up to 100%.

Different ranges are available to play material from –400% to 400% using the Second lever range parameter in the Operational Setup menu, EVS Controller section.

To access this second speed range, press **SHIFT+Lever** on the remote controller.

When supermotion material is loaded on the primary channel, the lever range has a larger, flat step at 50% in SLSM 2x, 33% in SLSM 3x, ...

The lever is also used to adjust speed, effect type, and duration in Playlist Edit mode.

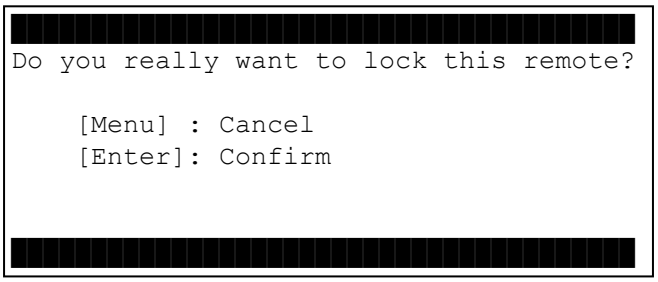
2.2.7. Keyboard Locking

You can lock a remote keyboard at any time to protect it against accidental changes, for example to prevent interruption of a play operation on an unattended device. Only the locked device is affected, other remotes will stay fully operational.

How to Lock a Remote Panel

To lock a remote, press the **CLEAR** key. Then, within 2 seconds, press the **MENU** key on the keyboard.

The following confirmation message is displayed:

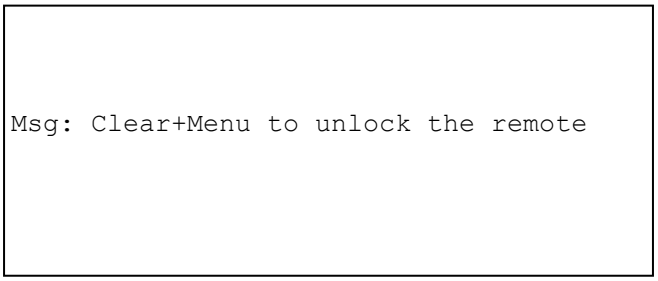


Press ENTER to confirm the locking of the remote.

When a remote is locked:

- The CLEAR and MENU keys, used for unlocking, are flashing green.
- All other keys are continuously lighting red.
- The jog brake is activated.
- All keys, the lever and the jog beep if pressed or operated, except the CLEAR and MENU keys, used for unlocking.

In addition, the following message is displayed in the middle of the current screen:



How to Unlock a Remote Panel

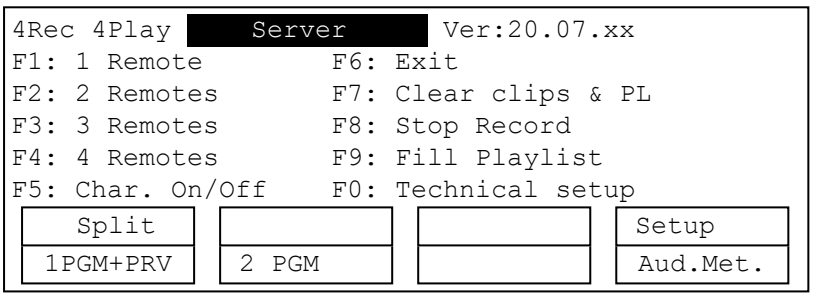
To unlock the remote, press again the CLEAR key then, within 2 seconds, the MENU key. The remote goes back to its operating mode.

2.3. Remote Panel Operations

2.3.1. Main Menu

Introduction

After the boot sequence of the Multicam system, the LCD screen of the Remote Panel displays the main menu:



The main menu has special function key operations (F0 to F9), as well as the so-called soft keys options at the bottom of the LCD screen.

To return to the main menu from any section of the application (except Playlist mode), press SHIFT+MENU on the first Remote Control panel.

If 2 channels are available for the first Remote Panel, the B key will display **2 PGM**. If 3 channels are available, the B key will display **3 PGM**.

Function Keys in the Main Menu

Select the corresponding Function key (F_ key), and then press **ENTER** to validate the selection.

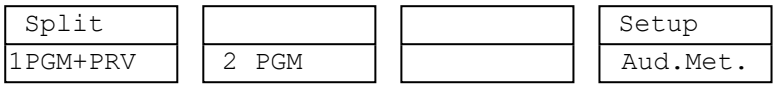
Function Key	Use
F1 to F4	If desired, the Multicam system can be run using 1, 2, 3 or 4 EVS Remote Panels. Depending on the number of play channels available in the current configuration, 1-, 2-, 3- or 4- Remote modes will be available from the main menu.
F1: 1 Remote	One Remote Panel is used in the configuration

Function Key	Use
F2: 2 Remotes	Two Remote Panels are used in the configuration. If 4 play channels are available, when selecting the 2 Remotes mode, the operator can choose between two configurations: • 2 play channels for each remote: In this configuration, each Remote Panel can select PGM+PRV or 2PGM mode. Each Remote Panel can manage video transitions (cut, mix, wipe) in PGM+PRV and playlist modes. • 3 play channels for the 1st remote and 1 play channel for the second remote. In this configuration, the 1st remote can select PGM+PRV or 3PGM mode and can manage video transitions. The 2nd remote is forced to 1PGM mode and can only handle cut transitions.
F3: 3 Remotes	Three Remote Panels are used in the configuration.
F4: 4 Remotes	Four Remote Panels are used in the configuration.
F5: Char. On/Off	Enables or disables the on-screen display (Timecode, Clip ID...) on the monitoring outputs.
F6: Exit	Exits the Multicam software and returns to the EVS Menu.
F7: Clear clips & PL	Clears all unprotected clips and playlists, or only unprotected clips, depending on the selection in a second screen. For more information to this action. "Deleting Clips" on page 68. Note: This command is not similar to the Clear Video Disks from the Maintenance menu. If you wish to refresh completely the server, i.e. to clear all clips including the protected ones, you need to use Clear Video Disks rather than Clear clips.
F8: Stop Record	Stops the record. The REC key will go off and the F8 function key is now used to restart the record.
F9: Fill Playlist	«Dump» feature which allows all clips to be «dumped» at the end of the current playlist. This allows the operator to save all material to tape, as a backup feature after a show is complete. You can select in the Setup menu which camera angles have to be included in the Fill Playlist function. If your clips are currently connected to another server on the network, the clips from that server will be added to your current playlist. Make sure that the playlist you have selected is an empty one. This function will append the clips at the end of an existing playlist.
F0: Technical setup	Gives access to the technical setup menu.

In order to guarantee the validity of data and clips previously saved, it is advised to properly exit the application by pressing **ALT+Q** and **ENTER** from the keyboard, or **F6** and then **ENTER** from the Remote Panel. Do not turn off the system while the application is running.

Soft Keys in the Main Menu

The following commands are available via the soft keys as explained in the section "Soft Keys and LCD Display" on page 9.



Command	Soft Key	Description
1 PGM+PRV	A	Allows you to select the 1PGM+PRV mode.
1 PGM / 2 PGM / 3 PGM	B	Allows you to select the 1 PGM or multi-PGM mode with 2 or 3 PGMs. The option available depends on your configuration.
Aud. Met.	D	Activates or deactivates the display of audio meters for all channels using the OSD of the monitoring outputs. When the audio meters are active, the clip information are not available, and vice versa.
Split	SHIFT+A	Only available with the 113 license key Allows you to activate the Split feature.
Setup	SHIFT+D	Gives access to the Operational setup menu.

2.3.2. Function of the Small Keys

MENU

This function allows the operator to gain access to the secondary menu.

SHIFT+MENU on the Remote gains access to the main menu.

Also used as an ESCAPE key to cancel some options and messages.

CLEAR

This function clears the IN / OUT/ playlist / CLIPS / CUE points.

- To clear one CUE point, recall the desired cue point and press CLEAR+MARK key.
- To clear all cues: when current picture is not a CUE point, press CLEAR+MARK key. A message appears to confirm the command.

ENTER

This function appends clip(s) at the end of the current playlist. This is also used to confirm saving of clips, and validate various options and messages.

2.3.3. Function of the Operational Block 1 Keys

Loop

The **Loop** button enables the loop function according to the value of the **Loop button** parameter, in the Operational Setup menu, EVS Controller section.

To leave the loop mode, you need to press **SHIFT+LOOP** again.

This setting can have the following values, which enable the related behavior:

Loop Clip

This plays the loaded clip in loop between its short IN and short OUT.

The **Loop** button flashes green when the loop clip is enabled, and loop indicator (**L**) appears on the OSD of the monitoring outputs.

Loop Clip Bounce

This plays the loaded clip in loop bounce between its short IN and short OUT.

The **Loop** button flashes green when the loop clip bounce is enabled, and loop indicator (**L**) appears on the OSD of the monitoring outputs.

The **Loop clip** and **Loop clip bounce** mode can be applied if:

- You press the **Loop** button before the clip is being played.
- The player is between the short IN and short OUT of the clip. Otherwise, the Remote Panel beeps.

Disable

The loop function is disabled, and nothing is done.

PLST

This function is not active if the current playlist is empty.

- If the current playlist is not empty, pressing **PLST** once loads the current playlist in Playlist Edit mode.
- Pressing **PLST** from the Playlist Edit mode shifts to the Playlist Playout mode.
- Pressing **PLST** from the Playlist Playout mode re-cues the playlist to its beginning.
- Pressing 3 times **PLST** will always cue up the current playlist ready to roll.

To play back a playlist that has been cued, press the **PLAY** button and it will roll at the preset speeds.

Insert

This function inserts a clip before or after (depending on the **Insert in playlist** setting in the Setup menu, Playlist section) the current position inside the playlist.

Browse

When a clip is loaded on the primary channel, pressing the **BROWSE** key allows the operator to browse inside all local clips of the database by turning the jog dial.

When a cue point exists for the current picture on the primary channel (the CUE button lights red), pressing the **BROWSE** key allows the operator to browse through all existing cue points by turning the jog dial.

When the current picture on the primary channel is neither a clip nor a cue point, or if the operator is in Playlist mode, pressing the **BROWSE** key allows him to browse inside the clips of the current playlist by turning the jog dial.

Goto IN

When you are in CLIP mode, this key combination enables the operator to go to IN / OUT points of clips, instantly.

IN

This function defines the IN point of a clip. The key will light differently depending on the following situations:

Key Color	Meaning
Green key	The key lights green if an IN point exists but is not the image you see.
Red key	The key lights red if the on-air image is at this IN point. This point can be entered while recording.
Flashing (green or red) key	In Split Audio mode, this key can be flashing green or flashing red. "Using the Split Audio Mode" on page 135 for more details.

- During a Replace operation on a playlist, this key will flash red if trying to insert an IN marker on a transition, as this is not allowed.
- During an Extend operation on a timeline, this key will flash red until you jog. At that time, it will flash green until the operation is confirmed using the **CAM D** key.

Goto OUT

When you are in CLIP mode, this key combination enables the operator to go to IN / OUT points of clips, instantly.

OUT

This function defines the OUT point of a clip. This operates similarly to the IN button.

Modification of Clip IN / OUT Points

Select the clip that you wish to modify, use the jog dial to position the material at the new IN or OUT point, and re-mark the IN or OUT point(s) as required.

When IN/OUT points are set and a clip is saved, the system automatically write-protects a user definable length of material before and after the IN/OUT points respectively. These are referred to as the guardbands. Their duration can be set with the **Default clip duration** parameter in the Operational Setup menu, Clips section.

Lever

This function is used to perform slow motion from 0 to 100% and to play back material in one of the secondary lever ranges. The lever has a continuous, linear range, except when supermotion material is loaded on the primary channel. In this case, a “flat step”, that depends on the supermotion camera (50% in SLSM 2x, 33% in SLSM 3x, ...), helps the operator locating easily the ideal playback speed.

When playing supermotion material in slow motion, to obtain the smoothest replay, it is important that the replay speed is exactly the ideal slow motion speed, for example 50% for SLSM 2x, 33% for SLSM 3x. If the replay speed is slightly off these ideal values, movements might appear staggered. These ideal speeds can also be called directly by pressing the PLAY button when the current element is Super Motion. The PGM speed and Var Max modes can also be used to facilitate this. See Chapter 6 ‘PGM-PRV Mode’ on page 26 for a description on these modes.

TAKE

- In PGM+PRV mode, pressing this button swaps cameras on PGM and PRV monitors
- In Multi-PGM mode, pressing this button toggles between CAM selection and PGM selection modes.
- In 2 PGM mode, when both PGMs are selected on the Remote Panel, pressing this button swaps the content loaded on PGM1 with the one loaded on PGM2 and vice-versa.
- In Playlist Edit mode, pressing this button inserts the clip loaded on the PRV channel into current playlist.

2.3.4. Function of the Operational Block 2 Keys

Network

This function gives access to the clips and/or records trains of other machines on the network. After the selection of the machine, the way of selecting clips and camera angles is similar to clips selection on the local LSM system. See section "Operation on XNet Network" on page 189.

PLAY

This function initiates a forward motion. It can also be used to start playback of playlists and clips (refer to PLST command).

When PgmSpd/Var Max is OFF, the default playback speed when pressing the **PLAY** key is 100% for standard pictures, 33% for slow motion pictures with an SLSM 3x camera, and 50% for slow motion pictures with an SLSM 2x camera, ...

When PgmSpd/Var Max is ON, the value defined in the Operational Setup menu, for the PGM Speed/Var max parameter is used.

Goto TC

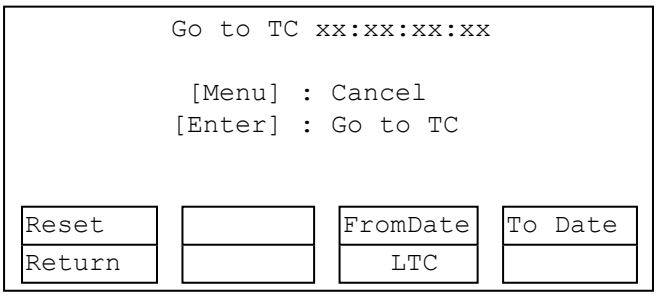
This function allows you to jump to a given timecode in the loaded train or clip.

How to Go to a Given Timecode

To go to a given timecode, proceed as follows:

1. Press **SHIFT+GOTO TC** key on the Remote.

   The **GOTO TC** window is displayed on the Remote Panel :



2. To specify a date from which the search should be executed, press **SHIFT+C**, enter the date in the format dd/mm/yy, using the **F1** to **F10** keys, and press **ENTER** on the Remote.
3. To specify a date up to which the search should be executed, press **SHIFT+D** and enter the date in the format dd/mm/yy using the **F1** to **F10** keys and press **ENTER** on the Remote.
4. To specify whether to go to a LTC, USER timecode or any of both (LTC/USER), press C until the requested timecode type is displayed.

5. Enter the requested timecode using the function keys F1 to F10.

   Eight digits: hh:mm:ss;ff (f=frame) are displayed on the LCD screen of the Remote.

   - If you enter all 8 digits, Multicam will automatically go to the required timecode.
   - If you enter less than 8 digits (when the last digits are zeros), press ENTER on the Remote to validate the entry and reach the requested timecode.

   Once you have entered the Goto TC, you can observe it has been correctly entered on the display of the Remote LCD screen and on the monitoring output. This Timecode display appears in the center of the LCD display, just above the menu options.

6. Press **ENTER** on the Remote.

If the timecode is from the LTC table, it will be displayed in white on the monitoring output.

If the timecode is from the USER TC table, it will be displayed in yellow on the monitoring output.

If nothing happens after confirming the TC entry with ENTER, this means that the field corresponding to the selected Timecode does not exist on the disk any longer.

To exit the GOTO TC function at any time, press the MENU key.

Last Cue

This function re-cues the EVS server to previous cue point relative to the current timecode position. Each time the Last Cue button is pressed, the EVS server re-cues to the previous cue, etc. When recalling a cue point, the cue number appears in the upper left corner of the OSD if this option is enabled with the Cue number on OSD parameter in the Operational Setup menu, OSD section.

Fast Jog

When selected, this option enables fast picture search: the actual speed of this fast jog is adjustable in the Setup menu. Starting a play or returning to E2E mode resets the Fast Jog mode.

The jog dial is active at all times when the system is in play & record. The brake is automatically turned on when starting a playback with the PLAY key or with the lever, or when returning to E2E mode with the RECORD button.

Mark

This function marks up to:

- 256 cue points on the record train while recording or playing
- 32 cue points on the current clip

The cue points are marked on the LIVE or PLAYBACK program depending on the Mark cue point setting in the Setup menu, Clips section. When the operator has marked 256 (on a record train) or 32 (on a clip) cue points, the next one will overwrite the oldest one.

Return

Inside a clip, press the RETURN key to remain on the same picture, but inside the record train instead of the clip (if that picture still exists in the record train). This is useful when a clip is too tight and you want to use material beyond the current IN or OUT point.

RECORD

This key lights red when the system is recording. Pressing this key brings the system in E/E (“live”) mode, and starts the record if necessary (depending on the settings of the Setup menu). The E/E mode is actually playing pictures already recorded by the system, and has a delay of 3 frames compared to the live source, on all audio and video tracks.

Page

Use this key to select a new clips page. After pressing the SHIFT+PAGE key, you must press a F_ key to select the corresponding page (1 to 10).

PRV CTL

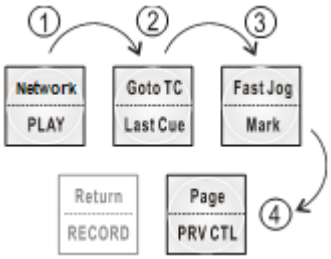
This function enables/disables the Preview Control mode.

2.3.5. Rebooting the System from the Remote Panel

«Hard Reboot»

In the event that the system needs to be rebooted, the process can be accomplished from the Remote Panel. Keep in mind that doing this while Multicam is running will of course force the Multicam application to close abruptly, and up to 1 minute of the material being recorded and not clipped could be lost.

To reboot, press the following key sequence,



Between step 3 and step 4, the **RECORD** button will flash GREEN and the PAGE button will flash RED. Hitting the PAGE button will reboot the system. Hitting the RECORD button will return to normal operation.

«Soft Reboot» from the Keyboard

It is also possible to run a «soft reboot» which will exit the software and return the user to the EVS Menu. Here, the software can be selected and entered again without having to reboot the entire system. When running the following procedure, the system will automatically save all recorded material (record trains, clips, playlists) upon exit.

Hit ALT+Q on the keyboard or press F6 from the main Menu, and confirm with ENTER or cancel with ESC. You will exit the Multicam software and go back to the EVS Menu.

3. Control Modes

3.1. Live, Search or Playback Mode

Multicam can be set in three different basic modes, depending on commands used:

Live (E2E) Mode

This mode selected at start-up can also be selected by pressing the **RECORD** key on the Remote Panel. Multicam records the input signal and plays it at the same time on the program output.

Search Mode

This mode is selected by moving the jog dial.

In this mode, the operator has the opportunity to search for an image, in order to define cue points or clips. Moving the command knob clockwise will force Multicam to search forward, moving the command knob counter-clockwise will force it to search backwards. The most important thing to note is that Multicam never stops recording while searching.

Playback Mode

Moving the lever or pressing the **PLAY** key selects this last mode.

Multicam plays the incoming signal delayed, a clip or a playlist, in slow motion and of course continues to record the incoming signal on disks.

As soon as the lever is moved, Multicam starts playing back from the current picture. The playback speed is defined by the lever position. This is used to start the playback of a normal slow motion, as well as the playback of a clip or a playlist. During playback, the system never stops recording

Each operation on the Remote Panel with the control jog or lever will be associated to the Search or Playback mode respectively.

3.2. 1PGM+PRV Mode

3.2.1. 1PGM+PRV Mode

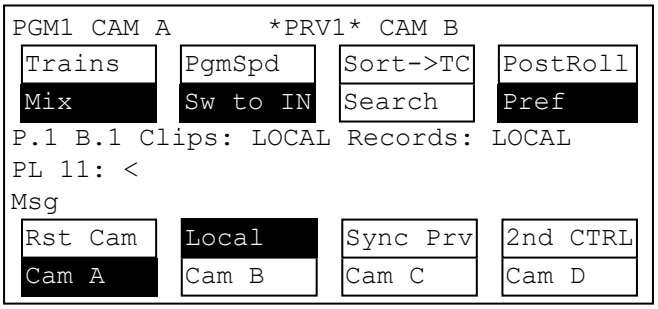
Introduction

Multicam has two modes for its basic operation, 1PRV+PGM and Multi PGM:

- The 1PGM+PRV mode is more powerful as it allows interaction between all outputs. Synchronized replays can be rolled and chained between the cameras with either a mix, a wipe, or a cut between them.
- The Multi PGM mode is more basic but gives the operator independent control of all outputs. These outputs can be controlled together (such as jogging back to a certain action on all outputs) or individually (either PGM 1, 2, or 3).

How to Enter the PGM+PRV Mode

To enter the 1PGM+PRV mode, press **A** from the Main menu. The Remote Panel will then display the following screen:



At least 2 playback channels must be available to run this configuration.

This mode allows the operator to make replays with/or without transition effects between all outputs. A string of replays can be put together and played back at the operator's discretion.

The LCD display is divided in two menus controlled by soft keys (A, B, C, D). To gain access to the upper menu, press **MENU** from the Remote Panel.

3.2.2. 1PGM+PRV Primary Menu Controls

Introduction

The primary menu in 1PGM+PRV mode, illustrated below, gives access to the functions detailed in the following paragraphs:

Rst Cam	Local	Sync Prv	2nd CTRL
Cam A	Cam B	Cam C	Cam D

CAM A / B / C / D

Rst Cam	Local	Sync Prv	2nd CTRL
Cam A	**Cam B**	**Cam C**	**Cam D**

If **PRV CTL** is 'OFF', select the camera to assign to the PGM output. This camera key will be highlighted in the menu.

If **PRV CTL** is 'ON', select the camera to assign to the PRV output. This camera key will be highlighted in the menu.

From 5 CAM configuration (5 recorder channels and 1 player channel) or when loading a clip where CAM E or more exists, the operational menu will display:

Rst Cam	Local	Sync Prv	2nd CTRL
Cam A	Cam B	Cam C	**--->**

By pressing the **D** key (**--->**), the operator has access to the D, E and the following cameras. The operation menu becomes:

Rst Cam	Local	Sync Prv	2nd CTRL
Cam D	Cam E	Cam F	**<---**

Press the **D** key (**<---**) to return to CAM A, B, and C selection.

Rst Cam

Rst Cam	Local	Sync Prv	2nd CTRL
Cam A	Cam B	Cam C	Cam D

This function restores the position of cameras on the active channels: CAM A on PGM1, CAM B on PRV.

When a clip/playlist is loaded on a channel, switching back to Live mode will recall the record train, which was last used on that output. This avoids too frequent uses of the **Rst Cam** function.

Local

Rst Cam	Local	Sync Prv	2nd CTRL
Cam A	Cam B	Cam C	Cam D

This function allows the user to reconnect to the local LSM after having accessed distant clips or record trains. The function is highlighted when the user is connected to both clips and record trains on the local LSM. It is displayed only on Master/Server LSMs when they are connected to the SDTI network.

Sync Prv

Rst Cam	Local	Sync Prv	2nd CTRL
Cam A	Cam B	Cam C	Cam D

This option allows the user to synchronize the PRV with the timecode and speed of the PGM output. This function is not available with remote record trains.

2nd CTRL

Rst Cam	Local	Sync Prv	2nd CTRL
Cam A	Cam B	Cam C	Cam D

This function allows the operator to swap the control of one or several play channels between the EVS Remote and a third-party controller. Both controllers receive permanently the status of the channel(s), but only one controller at a time is able to actually control a channel. The secondary controllers are defined in the Technical Setup menu.

Press this function to enter the **2nd CTRL** menu, select the channels that you want to pass to the secondary controller by pressing the corresponding A or B key, then press D (DONE) to validate your selection. Do the same to bring the control of a channel back to the EVS remote.

See section "Secondary Controller" on page 36.

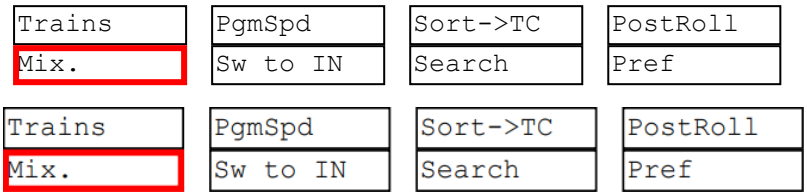
3.2.3. 1PGM+PRV Secondary Menu Controls

Introduction

The secondary menu in 1PGM+PRV mode, illustrated below, gives access to the functions detailed in the following paragraphs:

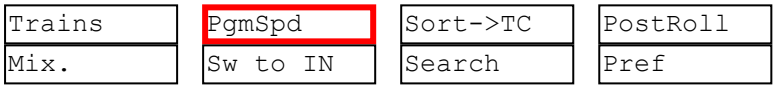
Trains	PgmSpd	Sort->TC	PostRoll
Mix.	Sw to IN	Search	Pref

Mix / Wipe L>R / Wipe R>L / Wipe U>D / Wipe D>U / Cut



These options determine the transition effect that will occur between the PGM and PRV pictures. The mix, wipe and cut are on the same location. Pressing this button will browse through these effects, showing the active one on the LCD menu. Please refer to the **Effect Duration for Take** setting, in the Operational Setup menu, EVS Controller section, to select the duration of the transition effect.

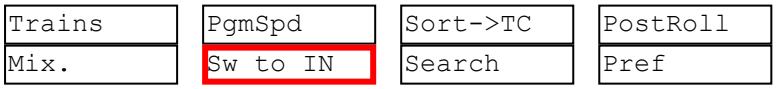
PgmSpd / VarMax



Pressing **PgmSpd** once enables the Program Speed mode and highlights this function on the LCD. Pressing the key once more enables the VarMax mode and highlights this function on the LCD. The **PLAY** key is flashing red while either of these modes is enabled.

- **Program Speed mode**: In this mode, only two speed values are available from the lever: 0% when the lever is in the lower position, or the speed defined in the **PGM speed** setting in the Operational Setup menu, EVS controller section, for any other position of the lever.
- **VarMax mode**: the speed range defined by the lever is limited between 0% and the speed value defined in the **PGM speed** setting in the Operational Setup menu, EVS controller section.

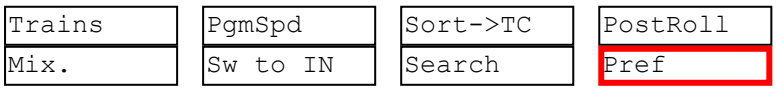
Sw To In



When this function is enabled (highlighted), a camera change will cause a jump to the corresponding IN point if existing. It will switch in Sync if no IN point exists for the current element, or if **Sw to IN** is 'OFF'.

See section "Synchronization Mode (Switch To In)" on page 35 for more information on this option.

Pref



Selecting this function enables the Preference mode.

See section "Preference Mode (PREF)" on page 35 for more information on this option.

Trains

Trains	PgmSpd	Sort->TC	PostRoll
Mix.	Sw to IN	Search	Pref

In Dual LSM mode, this option gives access to the **Camera Association** mini-menu where you can map the **Cam** soft key A, B, C, D to the requested camera angle available in the running configuration.

See section "Associating Cam Keys to Recorders" on page 39 for more information on how to change the camera association.

Post-Roll

Trains	PgmSpd	Sort->TC	PostRoll
Mix.	Sw to IN	Search	Pref

When the post-roll mode is enabled, that function is highlighted on the LCD and a **P** appears on the OSD of the monitoring outputs.

When the user exits Multicam with the post-roll mode on, this mode will still be enabled when Multicam is restarted.

The post-roll mode works as follows depending on the element played:

- When a clip is played, it will not stop on the Short OUT point, but will continue to play through the Short OUT point by the **Clip post-roll** defined in the Operational Setup menu, Clips section.
- When a record train is played, the same will happen if the **Record trains OUTs** parameter is set to **Freeze** in the Operational Setup menu, Clips section.
- When a playlist is played, the post-roll will apply only to the last clip of the playlist.

  When Multicam is used in parallel or exclusive mode with IPDirector, the post-roll defined in the Playlist Panel module of IPDirector is taken into account.

Sort->TC

Trains	PgmSpd	Sort->TC	PostRoll
Mix.	Sw to IN	Search	Pref

This function allows the operator to search for all clips that contain a particular timecode. See section "Remote Panel Functions" on page 47 for more information on this function.

Search

Trains	PgmSpd	Sort->TC	PostRoll
Mix.	Sw to IN	Search	Pref

This function allows the operator to search the database using keywords and ranking. "Keyword Management" on page 179.

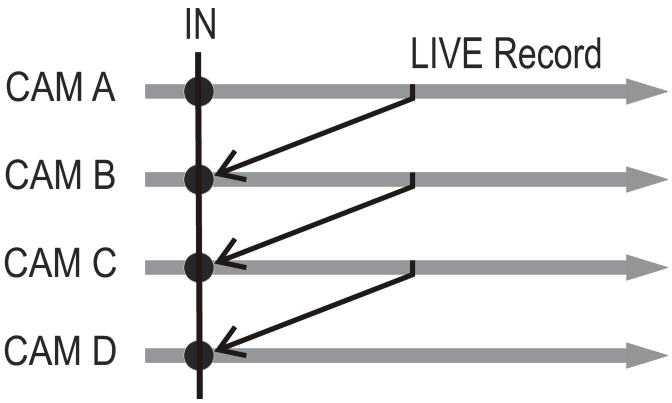
To return to the operational menu, press the **MENU** key from the Remote Panel.

3.2.4. Full Control and Lever Control

You control both PGM and PRV when the PRV CTL key is not active.

Once you select PRV CTL, you gain control on the PRV channel with the jog dial and most keys, while the lever and the PLAY key control the PGM output. At this point, selecting clips will call them up on the PRV channel.

Activating both the PRV CTL and the SW to IN functions allows the operator to auto-chain cameras from the same IN point.



Let's say an IN point has been marked, and you activate the PRV CTL and sets to ON the SW to IN option: The slow motion of one camera can be started from this IN point. The operator selects another camera in the PRV output and, via the TAKE button, can auto-chain cameras from the same IN point on the PGM output.

3.3. Multi PGM Mode

3.3.1. Multi PGM Overview

Introduction

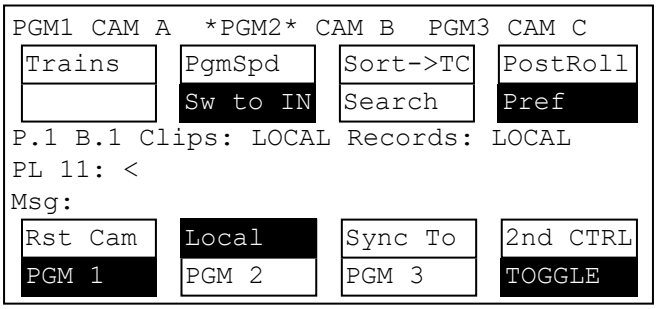
Multicam has two modes for its basic operation, 1PRV+PGM and Multi PGM:

- The 1PGM+PRV mode is more powerful as it allows interaction between all outputs. Synchronized replays can be rolled and chained between the cameras with either a mix, a wipe, or a cut between them.
- The Multi PGM mode is more basic but gives the operator independent control of all outputs. These outputs can be controlled together (such as jogging back to a certain action on all outputs) or individually (either PGM 1, 2, or 3).

How to Enter the Multi-PGM Mode

To enter the Multi PGM mode, press **B** from the Main menu. This button is labeled '1 PGM', '2 PGM', or '3 PGM' according to your system configuration.

The Remote Panel will then display the following screen:

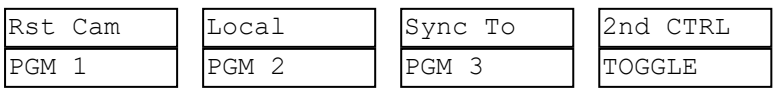


The LCD display is divided in two menus controlled by soft keys (A, B, C, D). To gain access to the upper menu, press **MENU** from the Remote Panel.

3.3.2. Multi PGM Primary Menu Controls

Introduction

The primary menu in Multi PGM mode, illustrated below, gives access to the functions detailed in the following paragraphs:



Rst Cam

Rst Cam	Local	Sync To	2nd CTRL
PGM 1	PGM 2	PGM 3	TOGGLE

This function restores the position of cameras on the active channels: CAM A on PGM 1, CAM B on PGM 2, etc.

When a clip/playlist is loaded on a channel, switching back to Live mode will recall the record train, which was last used on that output. This avoids too frequent uses of the **Rst Cam** function.

Sync To

Rst Cam	Local	Sync To	2nd CTRL
PGM 1	PGM 2	PGM 3	TOGGLE

This button allows you to synchronize the selected PGM in use with another one. Press this button and then select the PGM to be used as a reference. This function is not available with network trains.

2nd CTRL

Rst Cam	Local	Sync To	2nd CTRL
PGM 1	PGM 2	PGM 3	TOGGLE

This function allows the operator to swap the control of one or several play channels between the EVS Remote and a third-party controller. Both controllers receive permanently the status of the channel(s), but only one controller at a time is able to actually control a channel. The secondary controllers are defined in the Technical Setup menu of the Remote Panel.

Press this function to enter the 2nd CTRL menu, select the channels that you want to pass to the secondary controller by pressing the corresponding A, B, or C key, then press D (DONE) to validate your selection. Do the same to bring the control of a channel back to the EVS remote.

The 1 PGM mode is a simplified version of the 2 or 3 PGM modes. The operational menu has less functions:

	Local		2nd CTRL
CAM A	CAM B	CAM C	CAM D

Additionally the user does not need to select a channel to enable or disable the secondary controller. Since there is only 1 channel available in this mode, the operator only has to press **SHIFT+D** to swap the control between the secondary controller and the EVS Remote.

Toggle / All

Rst Cam	Local	Sync To	2nd CTRL
PGM 1	PGM 2	PGM 3	TOGGLE

The Toggle function is only available in 3 PGM mode:

- Toggle OFF: Selecting an output channel results in controlling that channel and disables the control on others.
- Toggle ON: Selecting a channel will alternatively enable/disable the control over that channel without changing the control on the others.
- All: This enables the control on all channels.

How to Assign a Camera to a Channel

In Multi PGM mode, to change the current camera on each PGM, proceed as follows:

1. In the primary menu, select the PGM to which you want to change the current camera. The **TAKE** key at the bottom of the remote is then lighting red.
2. Press the **TAKE** key. It lights green and the menu on the LCD display changes to let you select the desired camera.

Rst Cam	Local		
CAM A	CAM B	CAM C	CAM D

3. Press the camera you want to associate to the selected PGM.
4. Press **TAKE** again to return to the PGM selection menu.

3.3.3. Multi PGM Secondary Menu Controls

The secondary menu can be called by pressing the **MENU** key and is similar to the 1PGM+PRV mode, except that the **A** function is empty since it is not possible to create a transition between the channels in this mode.

See section "1PGM+PRV Secondary Menu Controls" on page 26 for a description of the other functions of the secondary menu.

3.3.4. Playlist Conditional Mode

Purpose

This mode is only available in 2 PGM and 3 PGM modes. It allows the operator to load and control several playlists simultaneously from the same Remote Panel, or to load a playlist on one channel while performing other operations on the other channel(s).

Prerequisites

To use this mode, the **Load playlist** parameter of the Operational Setup menu, Playlist section, must be set to **Conditional**.

To be able to play playlists with effects in conditional mode, you need to active the Mix on one channel feature on the PGMs or to select two channels.

How to Activate the Conditional Mode

1. Select one channel (for example PGM1)
2. Press the **PLST** key one, two or three times to enter the PLST EDIT, or enter the PLST DIFF mode, and possibly load the current playlist (see also "Edit and Playout Modes" on page 101).

The **TAKE** key lights green. You are in Conditional mode: Pressing the **TAKE** key allows you to return to the PGM selection menu, and select another PGM channel where you can start a replay, load a clip or another playlist, etc.

In the Conditional mode, if you select a PGM channel where a playlist is loaded and presses **TAKE**, you enter again the PLST EDIT or PLST DIFF mode.

When playlists are loaded on all channels you control in Multi PGM mode, the **TAKE** key lights red.

If you press the **TAKE** key, the Remote Panel will enter a specific PLST DIFF mode, where you can control several playlists simultaneously, and browse them or roll them in sync. **NEXT** and **SKIP** functions are also available and will apply on all controlled playlists. The **TAKE** button will not light red if one of the controlled channels does not contain a playlist.

Practical Example

1. The operator builds a playlist with Fills and another playlist with Keys.
2. He sets the **Playlist load** parameter to **Conditional** in the Operational Setup menu, Playlist section.
3. He enters the 2 PGM mode.
4. He selects the Fill playlist as current playlist, presses **A** to gain control on **PGM1**.
5. Then he presses **PLST** two or three times to enter the **PLST DIFF** mode and cue up the Fill playlist to its 1st clip.
6. Then he presses the **TAKE** key to return to the PGM selection menu.
7. He selects the Key playlist as current playlist, presses **B** to gain control on **PGM2**.
8. Then he presses **PLST** two or three times to enter the **PLST DIFF** mode and cue up the Key playlist to its 1st clip.
9. Then he presses the **TAKE** key to return to the PGM selection menu, presses **D** to gain control on both PGM channels. He presses **TAKE** to enter the **PLST DIFF** menu

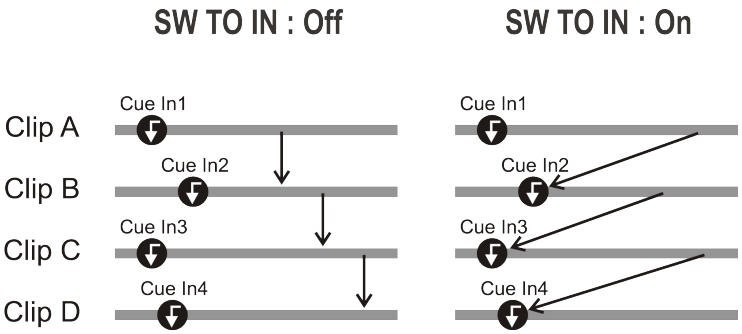
He will see the content of both playlists side by side on the LCD screen, and can browse them or play them in Sync at any speed, and perform **SKIP** and He presses **TAKE** to enter the **PLST DIFF** menu commands as needed.

3.4. Synchronization Mode (Switch To In)

The Synchronization mode allows users to define how they jump from one camera to the other. The Synchronization mode is available in the secondary menu from the main LCD display, using the **B** soft key.

If the Synchronization mode is OFF (SW to IN is not highlighted in the secondary menu), a request for camera change will produce a jump at the same timecode on the requested camera. This mode allows synchronous change of camera angle.

If the synchronization mode is ON, a request for a camera change (by pressing **CAM A**, **CAM B**, **CAM C**, or **CAM D** in the Multicam menu) will lead to a jump to a predefined CUE IN point.



If a CUE IN point has not been previously defined, Multicam acts as in SW to IN OFF mode (even if SW to IN ON is shown) because the system has no reference to jump to.

3.5. Preference Mode (PREF)

The Preference mode allows users to show the preferential camera angle by default when a clip is loaded. The Preference mode is available in the secondary menu from the main LCD display, using the **D** soft key.

When this option is ON and a clip is recalled, the preferred camera will be displayed on the main output, even if another camera angle was previously loaded on that output.

- The first preferential camera (called **preferred CAM**) is the one that was on the primary output channel when the clip was created.
- The second preferential camera (called **secondary camera**) is the one that was loaded on the next channel when the clip was created.

In the Clip screen, the first preferential camera is indicated by a star: 111B* and the second preferential camera is indicated by 2 dashes: 111B=.

When the preference option is disabled, the PGM output stays on the camera currently selected when the clip is called.

3.6. Controlled and Primary Channels

Controlled Channel

A channel is "controlled" when the operator can control it with the jog dial. In this case, the words **FULL CTRL** are present on the top of the OSD of the monitoring output of that channel.

Primary Channel

The primary channel is the first controlled channel. It is identified by stars around its name on the OSD of the monitoring output and on the LCD display of the Remote Panel (ex: *PGM1*).

Examples:

- In 3 PGM mode, if the operator controls PGM 2 and PGM 3, the primary channel is PGM 2.
- In 1PGM+PRV mode with PRV CTRL OFF, the primary channel is PGM.
- In 1PGM+PRV mode with PRV CTRL ON, the primary channel is PRV.

3.7. Secondary Controller

Introduction

The **2nd CTRL** function available on the Remote Panel in the main operational menu allows the operator to swap the control of one or several play channels between the EVS Remote and a third-party controller.

Both controllers receive permanently the status of the channel(s), but only one controller at a time is able to actually control a channel: this is called the exclusive secondary control mode. The secondary controllers are defined in the Technical Setup menu of the Remote Panel.

Interactions between IPDP and Multicam

When a Remote Panel and an IPDirector share the control of some PGMs in exclusive secondary control mode, the following principles apply:

- When a playlist/timeline is controlled by the Remote Panel on a PGM, the playlist/timeline remains the current one when IPDirector is given the control on the PGM.
- When a playlist/timeline is controlled by IPDirector on a PGM, the playlist/timeline remains the current playlist on the Remote Panel when the operator takes back the PGM control.
- When several playlists/timelines have been controlled by IPDirector on several PGMs and the operator takes back the PGM control, the current playlist/timeline on the Remote Panel is the one that was the current playlist when the control was given away, in other words the current playlist/timeline does not change.
- When the playlist/timeline controlled by IPDirector is not visible by the Remote Panel, the current playlist/timeline on the Remote Panel is the one that was the current playlist when the control was given away, in other words the current playlist/timeline does not change.

3.8. Dual LSM Mode

3.8.1. Overview

Description

The Dual LSM feature allows two LSM operators to work independently with their own LSM Remote Panel on the same EVS server, defining some operational settings independently from each other.

The Dual LSM mode has following main characteristics:

- Both operators share the clips and playlist pages.
- A set of operational parameters is duplicated. Each operator can therefore define the duplicated parameters for their own needs without interfering with the second operator.
- On the LSM Remote Panel, the operators work by default with a predefined set of camera angles, or can also decide to work with a custom set of camera angles. However, he cannot work with more camera angles than initially assigned to him.

Remote Panels

The association of LSM Remote Panels is fixed and defined as follows:

	LSM Operator #1	LSM Operator #2	Hypermotion (LSM Op #2)
2 LSM Remote	1	1	-
3 LSM Remote	2	1	-
3 LSM Remote	1	1	1
4 LSM Remote	2	2	-
5 LSM Remote	2	2	1

When an operator has access to two LSM Remote Panels, they can turn the second Remote to idle or back to active on the spot by changing the remote allocation in the main menu (**F1** or **F2** keys). When a Remote Panel is idle, all buttons are off and a message is displayed on LCD screen.

PGM Assignment

The way play channels are assigned to the Remote Panels cannot be modified for a given configuration, but varies from one configuration to the other.

The following table shows an example of the play channel assignment in the standard 6IN-6OUT configuration:

	Remote Panel #1	Remote Panel #2	Remote Panel #3	Remote Panel #4
2 LSM Remote	PGM 1-3	PGM 4-6	-	-
3 LSM Remote	PGM 1-3	PGM 4-5	PGM 6	-
4 LSM Remote	PGM 1-3	PGM 4	PGM 5	PGM 6

Operational Parameters

The LSM operator #1 can access the common parameters on the LSM Remote Panel #1 in the Operational Setup menu.

Each LSM operator can access their individual operational parameters on their LSM Remote Panel #1. These parameters are located after the Special Effects settings.

Limitations in Multicam LSM Mode

The following limitations are applicable to the Dual LSM feature used with Multicam LSM configurations:

- The **standard mix** function using the PGM/PRV channel is available in two conditions:
  - the playlist is loaded on an odd PGM (1, 3 or 5);
  - the following PGM is available for that same Remote Panel.
- The **Playlist** function is available simultaneously for both operators, with the following limitations for the LSM operator #2:
  - No **Clear Unavailable** feature which affects all playlists
  - No **Replace** feature which uses PGM1 and Loop IN.
- The **Timeline** feature is available only in Multicam LSM mode, and solely to one operator. You can define which operator has access to the timeline feature with the **TL Operator** parameter in the Operation page, Timeline Settings.
- The control of **Hypermotion Cameras** is only available on the LSM operator #2.

3.8.2. Associating Cam Keys to Recorders

Default Association

By default, the recorders are assigned to the operators and associated to the soft keys of the LSM Remote Panel as described below. This standard default assignation can differ depending on the number of recorders assigned to the Operator #1 (see Configuration manual, Base settings, **Available Inputs Op 1** parameter).

- In a configuration with 6 recorders:
  - CAM A,B,C are assigned to the LSM Operator #1 respectively on soft keys A,B,C.
  - CAM D,E,F are assigned to the LSM Operator #2 respectively on soft keys A,B,C.
- In a configuration with 8 recorders:
  - CAM A,B,C,D are assigned to the LSM Operator #1 respectively on soft keys A,B,C,D.
  - CAM E,F,G,H are assigned to the LSM Operator #2 respectively on soft keys A,B,C,D.

The SLSM cameras are assigned first, followed by the standard cameras. By default, the SLSM cameras will therefore first be assigned to the LSM operator #1.

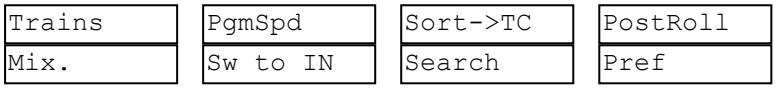
You can however change the association of the cam keys to the recorders without restriction via the **Trains** command. That means that you can also associate a recorder that the other operator has also associated to one of their cam. soft keys.

How to Change the Association of a Cam Key to a Recorder

If you have defined a custom association, you will lose it if the EVS server is rebooted: The default association will automatically be restored.

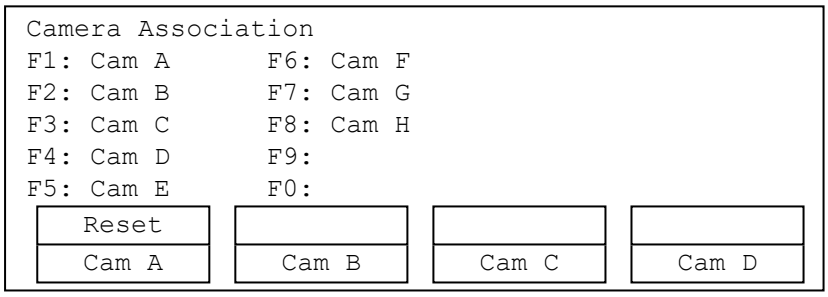
To change the default association between cam key and recorder, proceed as follows:

1. When you are in the primary menu in PGM/PRV mode, press the **MENU** key to access the secondary menu commands:



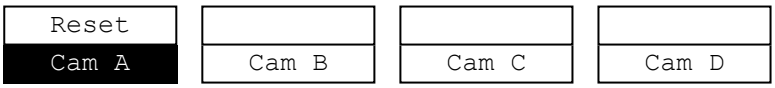
2. In the secondary menu, press **SHIFT + A** to select the **Trains** command.

   A mini-menu similar to the following one appears:



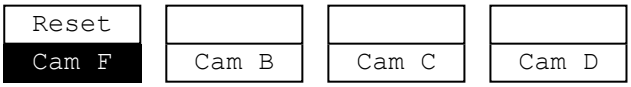
3. Select the key (**A,B,C or D**) on the Remote Panel whose association you want to change.

   The corresponding Cam key (for example Cam A) is highlighted in the menu:



4. Select the function key corresponding to the recorder you want to associate to the camera soft key (for example **F6** for **Cam F**) .

   The new recorder associated to the soft key is now displayed in the menu:



5. Repeat steps 3 and 4 if you want to change other soft key associations.
6. Press **ENTER** on the Remote Panel to validate the changes and come back to the secondary menu.

When you will create clips, the clips will be saved in the slots corresponding to the associated recorders.

How to Reset the Cam Key Association

If you want to restore the soft key association to the initial recorders, press **SHIFT + A** when you are in the mini-menu.

The default Cam Key association is automatically restored when the EVS server is rebooted.

3.8.3. Accessing All Recorders of the Local Server

Introduction

When you work on an EVS server that runs in Dual LSM mode, you have access to the default or to a custom set of recorders via the **A, B, C** and **D** soft keys of your Remote Panel.

You can also get access to all local recorders using the **Loc. Rec.** function available in the **Network** secondary menu.

Once the **Loc. Rec.** function is enabled, left and right arrows will allow you to move through all recorders of the local server in the primary menu of the PGM/PRV mode, as presented below:

Rst Cam	Local	Sync Prv	2nd CTRL
Cam A	Cam B	Cam C	--->
Rst Cam	Local	Sync Prv	2nd CTRL
Cam G	Cam H		<<--

How to Access All Recorders of the Local Server

To enable the access to all recorders of the local server, proceed as follows:

1. When you are in the primary menu in PGM/PRV mode, press **SHIFT**, then **Network** key to access the Network menu:

Loc.Rec		Previous	Next
Local	Clips	Records	Clip+Rec

2. Press **SHIFT**, then **A** to activate the **Loc. Rec.** function.

You automatically come back to the primary menu, and you can then access all recorders using the **D** soft key to see the next or previous recorders.

How to Restore the Previous Cam Key Association

You can leave the Loc. Rec. mode, and come back to the previous train configuration in one of the following ways:

- In the primary menu, press **SHIFT**, then **B** to apply the **Local** command.
- Go back to the **Network** menu and deactivate the **Loc. Rec.** function in the same way you have activated it.

If you define a new train configuration with the **Trains** command, this new configuration will be applied, and you will also leave the **Loc. Rec.** mode.

The **Loc. Rec.** button is not available when a push is requested to a push target.

4. Clip Management

4.1. Introduction

4.1.1. Clip Structure

Concepts

A clip is defined by Short IN and Short OUT points. When referring to Short IN and Short OUT points, the operators usually use the terms IN point and OUT point.

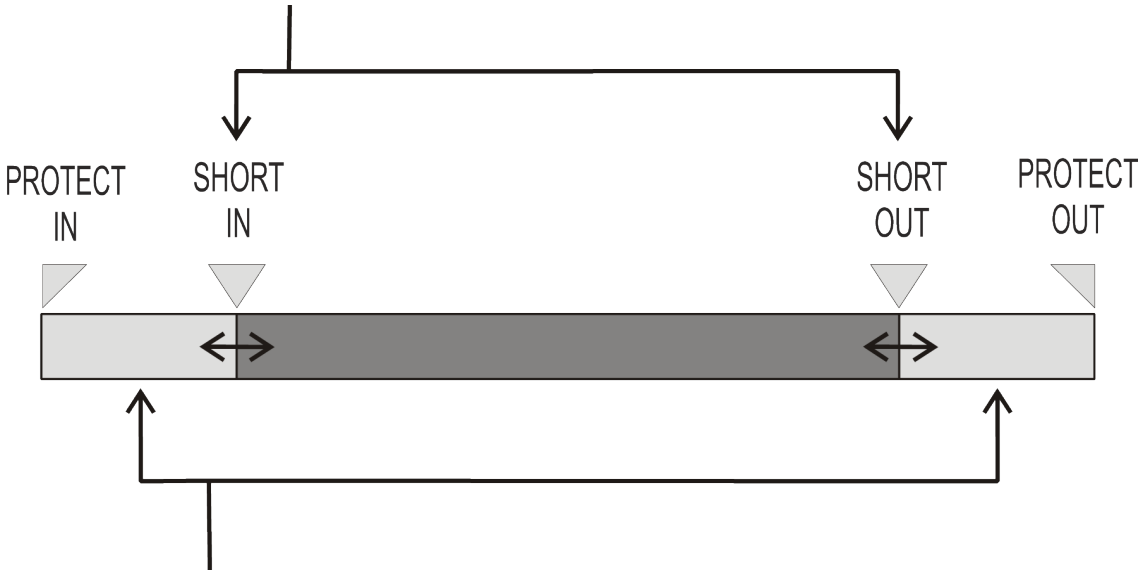
When Short IN and Short OUT points are set, the system automatically write protects a user definable length of material before and after the Short IN/OUT points respectively, these are referred to as the guardbands.

For this reason, the IN point before the guardbands and the OUT point after the guardband are called Protect IN point and Protect OUT point.

Use of Guardbands

It is possible to trim a clip by redefining Short IN and Short OUT points.

If Short IN and Short OUT points are defined, only the fields between those two points will be played if the sequence is recalled (the same applies when the sequence is included in a playlist).



Fields between Protect IN and Short IN and fields between Short OUT and Protect OUT (guardbands) can be reached with the jog. So the Short IN and Short OUT points can be redefined.

General Principles

Protect IN & Protect OUT points of a clip cannot be replaced by new ones.

Short IN & Short OUT points of a clip can be replaced by new ones.

Short OUT point is excluded. The clip freezes on previous field when playing back (with post-roll mode disabled).

(Short) IN & OUT are always on even fields. This is automatic.

The guardband beyond the Short OUT point is created with the material available when the operator saves the clip by pressing the selected F_ key. Therefore, this guardband can sometimes be shorter than the value defined in the **Guardbands** setting, in the Operational Setup menu, Clips section.

4.1.2. Clip Numbering Hierarchy

Introduction

Multicam can store up to 900 (multiplied by the number of cameras) clips and 100 playlists in its libraries (including 10 playlists on page 10 reserved for protocols).

This makes it possible to store 900 clips with up to 12 camera angles per clip, which results in 10,800 clips on an EVS video server.

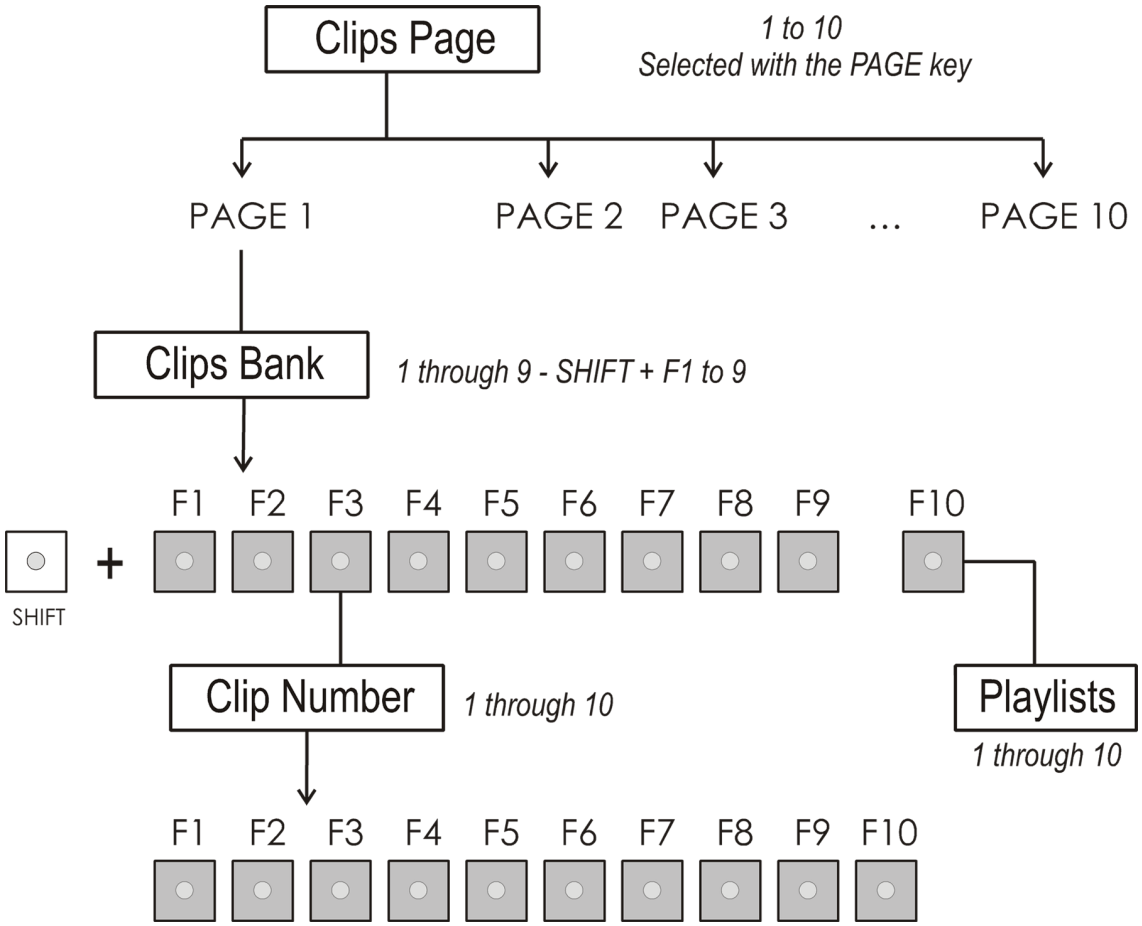
This number is displayed in the upper right window of the VGA Setup screen (**SHIFT+F2** from the PC keyboard).

If you are working with XNet SDTI network, keep in mind that the total number of clips on the entire network is limited to 32,000.

If you are working with an XNet-VIA network, the total number of clips on the entire network is limited to 64,000.

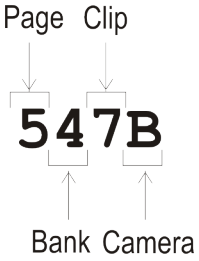
Clip Hierarchy Diagram

The following diagram represents the hierarchy of the Multicam clip numbering system. As an example, clip number “112” is used:



Clip LSM ID

The clip numbering system is as follows:



In the example, the digits have the following meaning in the numbering system:

- “5” refers to the clip page number (1 to 10).
- “4” refers to the clip bank (1 to 9)
- “7” refers to the clip number (1 to 10) inside the bank
- "B" refers to the camera name.

To identify remote clips when using the XNet SDTI network, the number of the clip is followed by the number of the machine on the network. i.e. Clip 547B/04

4.1.3. Clip Availability on Disks

Various clip types can be distinguished depending on whether they are available on the disks or not. Depending on the clip availability on disks, you can perform specific actions on the given clip or not.

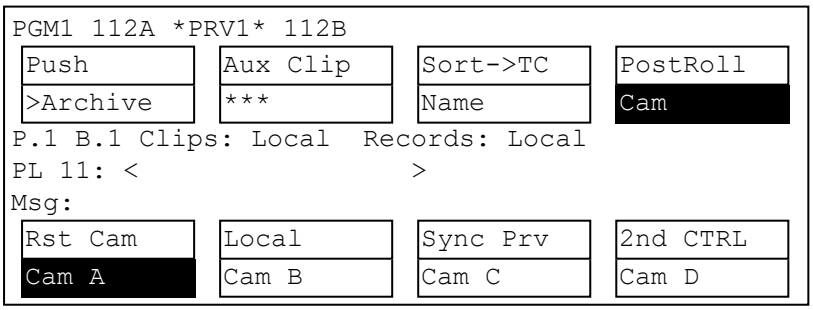
Clip	Available Actions
Clip on disk	Clips which are protected on disks, and which have Short IN and Short OUT points present on disks. All the material is available on the disk.
Growing clip	Clips which are protected on disks, and which have a Short IN point, and possibly Short OUT point defined on disks. Since the record process is still undergoing, some of the material is already on the disk but not all of it.
Reserved clip	Clips for which the position has been reserved on the SDTI database but for which there is no Short IN and Short OUT points, nor any protect present on disks.

4.2. Clip Functions on the Remote Panel

4.2.1. Remote Panel Interface

Overview

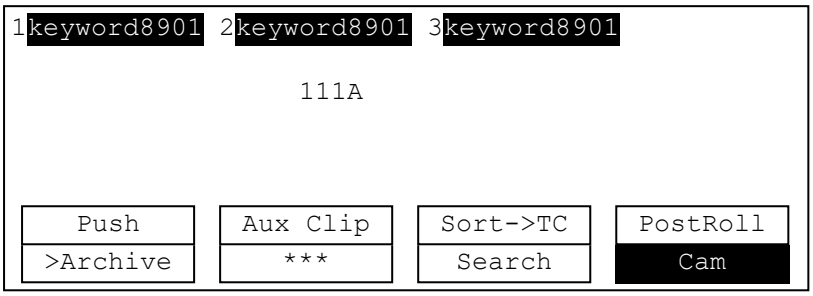
In Clip mode, the secondary menu of the Remote Panel is different from the Record Train mode:



Press **MENU** to access the secondary menu.

Secondary Menu Without Keyword File Defined

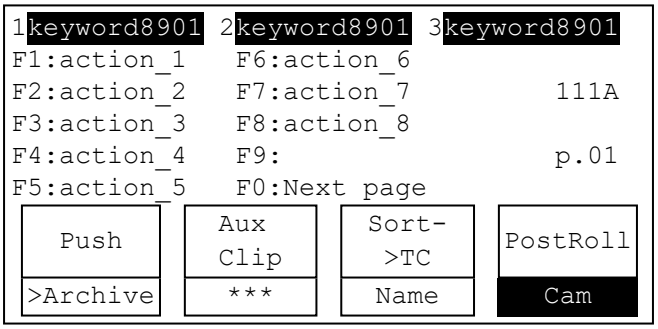
If no keyword file is selected in the setup , the LCD display will be:



In this mode of the secondary menu, clips can still be directly recalled using the **F1-F10** keys of the Remote Panel.

Secondary Menu With Keyword File Defined

If a keyword file is selected in the setup, the LCD display will be:



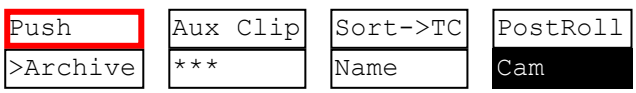
In this mode of the secondary menu, the **F1-F10** keys are used for keyword assignment, and thus can no longer be used to recall clips. For a description of the keyword-related functions, please refer to "Keyword Management" on page 179.

The ID of the current clip appears on the end of line 3 of the LCD display.

4.2.2. Remote Panel Functions

Secondary Menu in Clip Mode

Push

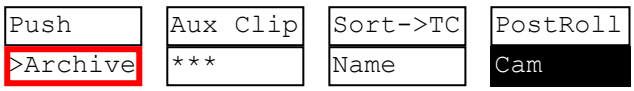


The Push function allows you to easily send a copy of a clip to another machine on the network, via the GbE network or the SDTI network .

The behavior of the push mechanism depends on the Push settings available in the Operational Setup menu on the Remote Panel, Push section.

See section "Pushing Clips" on page 84 for more information on how the pushing mechanism works.

>Archive

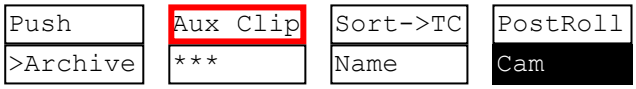


The Archive function allows the operator to flag a clip to place it in the archive queue of the XFile3 hardware available on the EVS setup. Clips can be archived to/restored from the removable drives.

This function is blinking when the clip is flagged for archiving, but has not yet been archived. It is permanently highlighted when the archiving of the clip is completed.

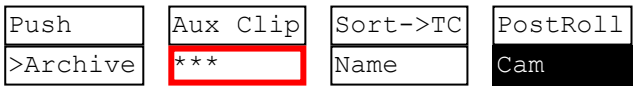
Depending on the mode selected with the D key (CLIP/CAM), the >ARCHIVE flag is assigned only to the camera angles of the clip loaded on the controlled channels (CAM mode), or to all camera angles of the clip (CLIP mode).

Aux Clip



This function allows assigning a clip as auxiliary audio clip to the current playlist. Press CLEAR+Aux Clip (CLEAR+SHIFT+B) to remove the current auxiliary clip. "Playlist Management" on page 99 for more details.

Ranking (***)

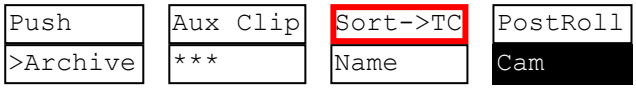


The Ranking function allows assigning a ranking to the current clip. Pressing several times this key will scroll through the different values: no ranking (not highlighted) or 1 to 3-star ranking.

Depending on the mode selected with the D key (CLIP/CAM), this ranking is assigned only to the camera angles of the clip loaded on the controlled channels (CAM mode), or to all camera angles of the clip (CLIP mode).

If the Keyword info parameter of the Operational Setup menu, OSD section is set to Yes, the ranking will appear on the OSD of the monitoring outputs when cueing up the clip.

Sort->TC



The Sort->TC function allows the operator to search the database for all clips or trains containing a specific timecode. Press SHIFT+C again in Set TC mode to call it.

When calling this function, the timecode of the current picture is used as a default selection. The operator can immediately perform the search or he can edit that timecode before starting the search.

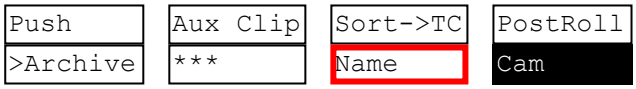
See section "Searching for Clips by Timecode" on page 86 for more information on how to search for clips by timecode.

Set TC

The Set TC function is only available in SHIFT+B on the Sort->TC menu. It allows the operator to restripe the timecode of a clip. "Restriping a Clip" on page 78.

Depending on the mode selected with the D key (CLIP/CAM), the new timecode value is assigned only to the camera angle of the clip loaded on the primary channel (CAM mode), or to all camera angles of the clip (CLIP mode).

Name

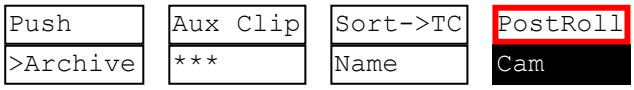


The Name function is only available if a keyword file has been selected in Keyword file setting, in the Operational Setup menu, Keyword section. It is used to name a clip based on available keywords. "Keyword Management" on page 179 for more details. When the Name function is selected, pressing SHIFT+C again will call the Search function.

Search

The Search function is “hidden” behind the Name function. Press SHIFT+C again in Name mode to call it. It allows the operator to search the database for clips based on keywords and ranking. "Keyword Management" on page 179 for more details.

PostRoll



This function enables/disables the post-roll mode. See section "Post-Roll" on page 28 for more explanations about this mode.

Clip/Cam

Push	Aux Clip	Sort->TC	PostRoll
>Archive	***	Name	Cam

Pressing the **D** key will toggle between CAM and CLIP modes on the remote. Please note that this mode on the remote and on the VGA screens is never synchronized.

- In CAM mode, the Push, Archive, Ranking assignment, Keyword assignment, and Name functions will apply only to the camera angles of the clip loaded on the controlled channels.
- In CLIP mode, these functions will apply on all camera angles of the clip.

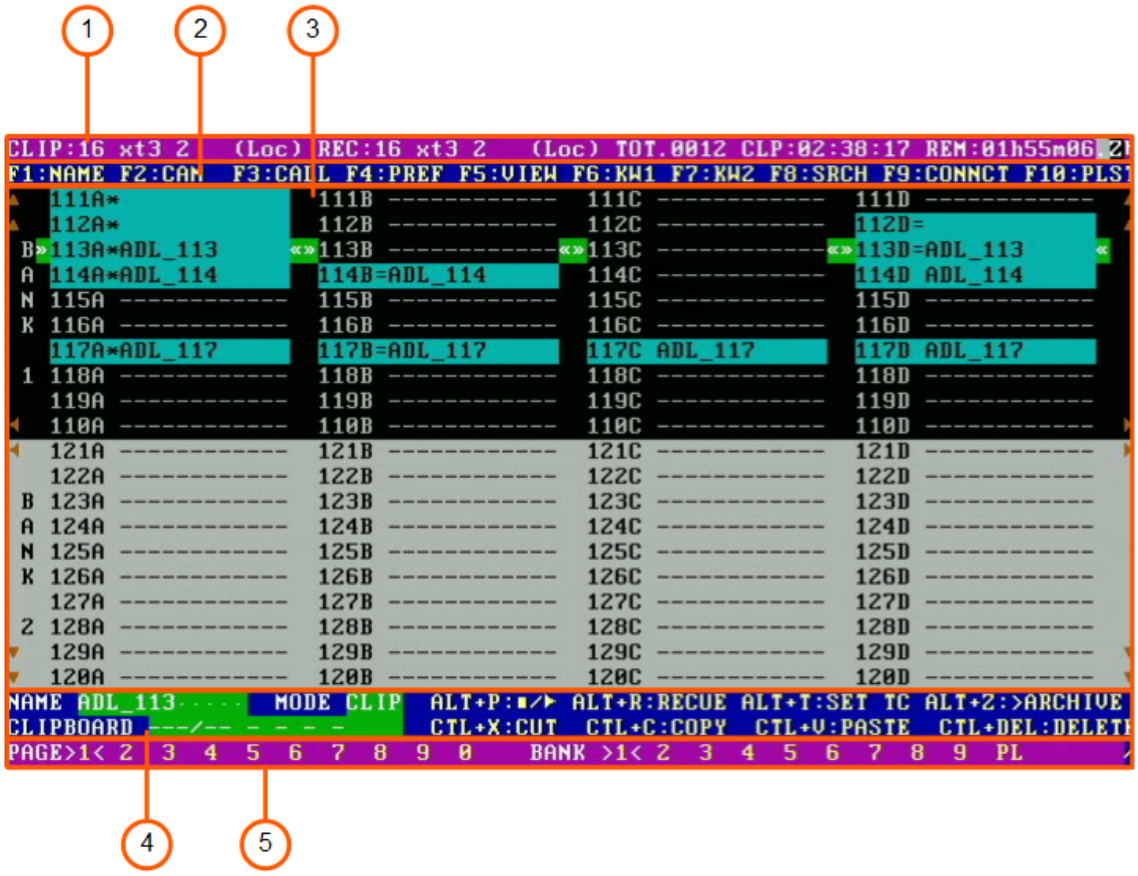
4.3. Clip Functions on the VGA

4.3.1. Clip Screen Overview

Illustration

The following screenshot presents the VGA Clip screen in 4-camera view.

The various areas detailed below are highlighted in the screenshot.



Area Description

#	Area Name	Description
1.	Title bar	The Title bar contains status information. See section "Title Bar" on page 51.
2.	Function bar	The Function bar lists the main functions available from the Clip screen. See section "Function Bar and Keys" on page 52.
3.	Clip Information area	The Clip Information area displays the clips of the selected page and bank(s), and contains information on these clips. See section "Clip Information Area" on page 54
4.	Clip Management area	The Clip Management area allows to edit the clip name, and provides a list of playout commands. See section "Clip Management Area" on page 57
5.	Page, Bank and PGM Selection area	The Page, Bank and PGM Selection area mainly allows you to see which page and bank is displayed in the Clip screen. See section "Page, Bank and PGM Selection Area" on page 58

4.3.2. Title Bar

The Title bar contains the following status information from left to right:

- Net number and Net name of the EVS server currently selected for clips and for record trains. The name is on a red background if it is a distant server.
- Total number of clips (i.e. protects, 1 camera angle counting for 1 clip in this count).
- Total duration of all clips.
- Remaining recording capacity on the server (all record trains together; valid for the local server only).

The abbreviated word **(Loc)** appears next to the name if the local machine is currently selected for clips and/or for record trains. The clips displayed in the clip screen belong to this machine.

4.3.3. Function Bar and Keys

Area Description

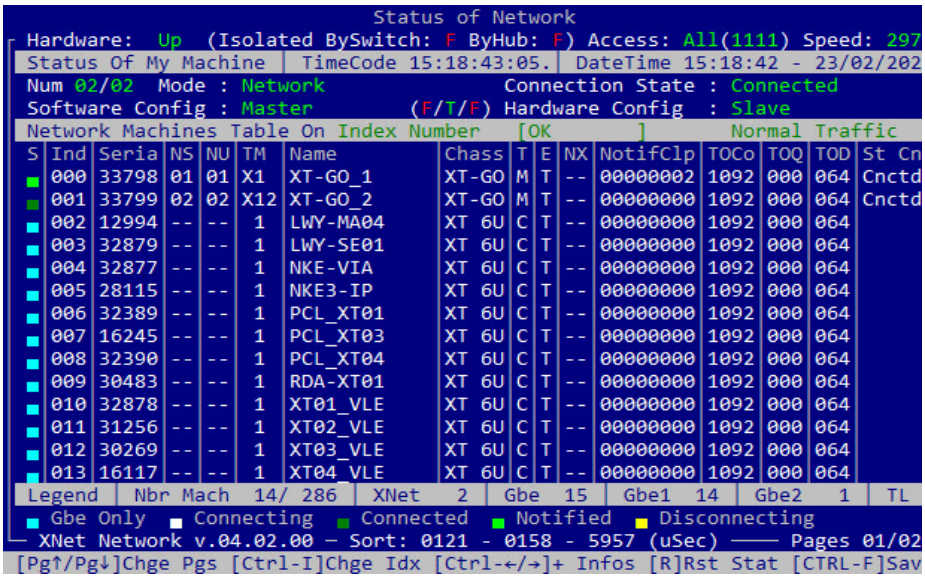
The second line of the Clip screen displays the available functions. Each function can be called by the corresponding **F_** key of the keyboard.

Keyboard Functions

Function	Key	Description
Name	F1	This function is used to name a clip.
Clip/Cam	F2	This function toggles between CLIP mode and CAM mode. • In CLIP mode, actions on a clip will use all available cameras for this clip. • In CAM mode, actions on a clip will only use the selected camera for this clip. Other functions such as Name, Delete, Copy, Set TC, >Archive depend on this mode selection.
Call	F3	The operator can gain immediate access to a local or network clip by typing its ID number.
Pref	F4	This option changes the primary camera of a clip.
View	F5	This option changes the standard display to the extended display and vice versa.
KW1	F6	This option calls the On-Air Keyword screen.
KW2	F7	This option calls the Off-Air Keyword Screen.
Delay	SHIFT+F7	This function calls the Video Delay VGA screen.
Search	F8	This option calls the VGA Search Screen.
Net	SHIFT+F8	See hereunder.
Connect	F9	See hereunder.
Playlist	F0	The Playlist screen can be accessed by selecting F10 on the keyboard.

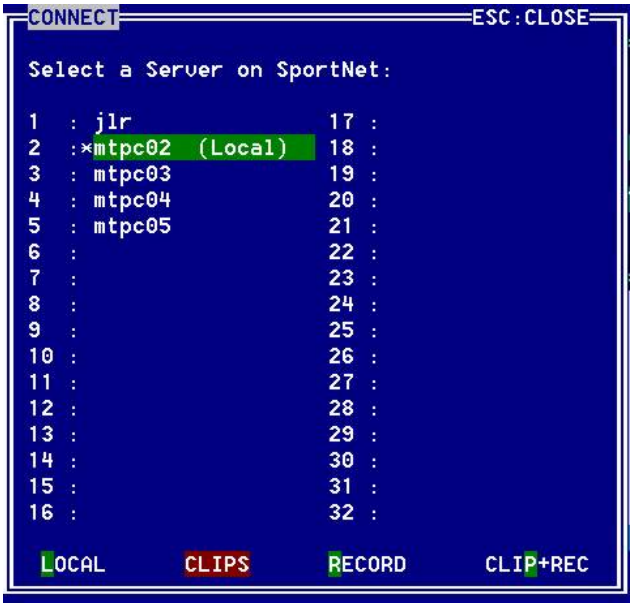
Net Function (SHIFT+F8)

This option switches to the Network Status Screen and allows monitoring the status of the different machines connected on the network.



Connect Function (F9)

This option calls the CONNECT window. This window allows the operator to connect to the clips and record trains of other machines on the network.



1. Select **CLIP**, **RECORD** or **CLIP+REC** mode with the keyboard.
2. Select the machine you want to connect to by clicking on it with the stylus or move with the arrow keys and press **ENTER** on the keyboard.

The asterisk (*) next to one of the machines in the list indicates which machine is the active network server. "Operation on XNet Network" on page 189 for more details.

The following functions can be used in the CONNECT window:

- ALT+L: Close the CONNECT window and return to local clips and record trains.
- ALT+C: CLIPS mode - to connect to the clips of a remote machine
- ALT+R: RECORD mode - to connect to the record trains of a remote machine
- ALT+P: CLIP+REC mode - to connect to the clips and record trains of a remote machine.
- ESC: Close the CONNECT window without chaning the connection mode or remote machine.

4.3.4. Clip Information Area

Introduction

The Clip Information area displays the clips of the selected page and bank(s).

Two views are possible:

- 4-camera view
- 12-camera view

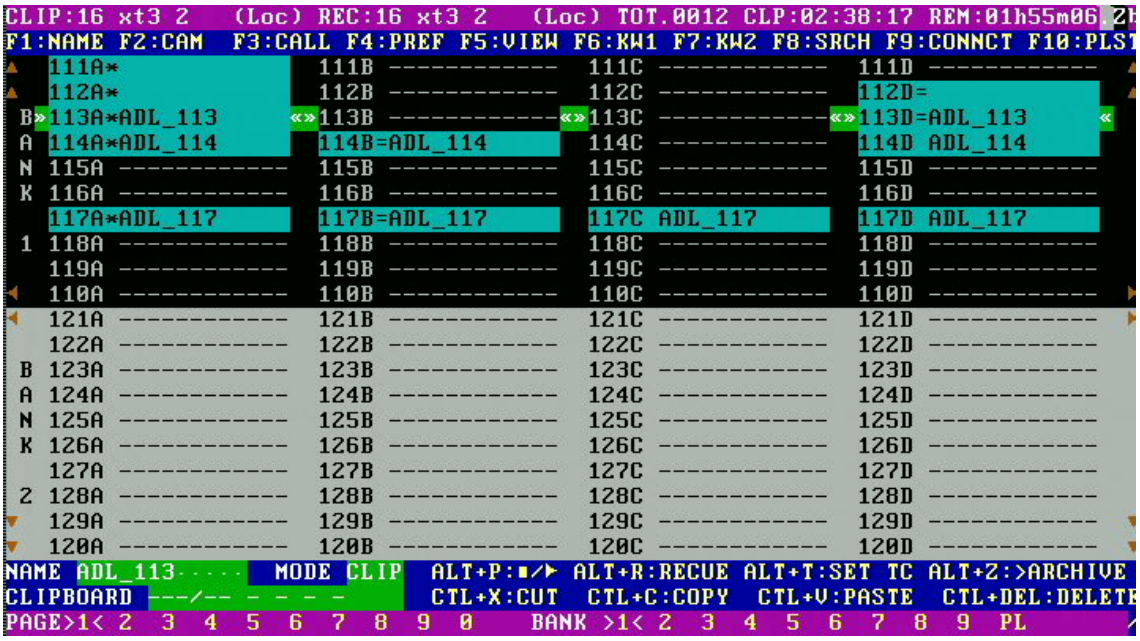
4-Camera View

The view with 4 cameras presents the clip positions and camera angles as follows:

- It shows alternatively the camera angles from A to D, from E to H or from I to L.
- It shows two banks at a time.

This is the default view for configurations with maximum 6 recorders.

You can switch between the 4-camera and 12-camera view by pressing **F5** on the keyboard.



The navigation through the Clip window, and the various functions available on this screen, can be performed using keyboard shortcuts presented in the sections below.

12-Camera View

The view with 12 cameras presents the clip positions and camera angles as follows:

- It shows the camera angles from A to L.
- It shows only one bank at a time.

This is the default view for configurations with more than 6 recorders, and for all Spotbox configurations.

You can switch between the 12-camera and 4-camera view by pressing F5 on the keyboard.

Clip Information Displayed

For each clip and camera angle, the following information is available:

Field	Description
Clip ID	Unique identifier of the clip on the server. Ex: 111A The clip ID is followed by the “Creating” message when the clip is in the process of being created, copied or moved to this location.
Clip Rank	Clip rank depending on the channel on which it has been created : • Primary (“*” next to the clip ID) • Secondary (“=” next to the clip ID) The clip rank information is highlighted in blue if the clip is protected.
Clip name	Name of the clip, either automatically assigned or defined by the user. When space is missing to display the full name, the clip name is truncated and ends with this string on a blue background >>x.
Archive Status	• If the clip ID is blinking green, the clip is flagged for archiving, but not yet archived • If the clip ID is permanently highlighted in green, the archiving of the clip has been completed

In the 4-camera view (cameras A to D), if one or more camera(s) not displayed exist for a given clip, the text >>x (where x specifies the number of hidden camera angles where video material is stored) is displayed on the right of the D column for this clip.

4.3.5. Clip Management Area

Area Description

The Clip Management area contains:

- fields which allow assigning or changing the clip name and clip mode, among others.
- shortcut keys to execute other commands on clips.

Name Field

The Name field is the only editable field. It is used to enter the name to assign to a clip/playlist, or to enter the ID of a clip to recall.

Mode Field

It indicates if the clip screen is currently in CLIP or CAM mode. In CLIP mode, actions on a clip will use all available cameras for this clip. In CAM mode, actions on a clip will only use the selected camera for this clip. Default value is CAM mode.

Clipboard Field

In CAM mode, the Clipboard field displays the camera angles of a clip which have been copied to the clip board. In CLIP mode, this field is not relevant.

Clip Commands

It displays the commands available from the Clip screen:

Command	Description
ALT+P:▶/■	Plays at 100% speed except for supermotion clips which are played back at a speed specific to the SLSM camera, and pauses playback on the current picture.
ALT+R:RECUE	Jumps to the Short IN point.Primary.
ALT+T: SET TC	Restripes the timecode of the current clip.
ALT+Z:>ARCHIVE	Allows the operator to flag a clip to place it in the archive queue of the XFile used on the customer setup. When a clip is flagged for archiving, but has not yet been archived, its ID will be blinking green in the Clip screen. It is permanently highlighted green when the archiving of the clip is completed. Depending on the mode selected with the **F2** key (CLIP/CAM), the **>ARCHIVE** flag is assigned only to the camera angle of the clip selected with the green cursor (CAM mode), or to all camera angles of the clip (CLIP mode).

4.3.6. Page, Bank and PGM Selection Area

Area Description

The bottom line of the Clip Screen contains:

- The **Page** and **Bank** zones, on a pink background, that allow you to see which page and bank are displayed in the clip screen as the displayed page and bank are surrounded by angle brackets **>X<**.
- The **Call Channel VGA** field, on a green background.

Moving Around Pages and Banks

The following table provides the main shortcut keys to navigate in the Clip screen. When the shortcuts are relevant in both 12-camera and 4-camera views, they are available in both views.

In order to ...	Proceed as follows:
Highlight clips in the displayed banks	Press **Up, Down, Left** or **Right Arrow**. The highlighted clip or clip position is surrounded by green arrows.
Move through banks	Press **ALT+Up/Down Arrow** to scroll vertically between banks.
Move through pages	Press **ALT+Left/Right Arrow** to scroll horizontally between pages.
Go to bank 1 of current page	Press **HOME** .
Go to bank 10 (playlist) of current page	Press **END**.
Return to the local clips and playlists (if the Clip window is connected to a remote server)	Press **ALT+L**
Display the 4 previous/next cameras of displayed clip positions: A-D ==> E-H ==> I-L ==> A-D, etc.	Press **CTRL+Left/Right Arrow**. or Pres **CTRL + F5**

Selecting the Play Channel

Located in the bottom right corner of the clip screen, the **Call Channel VGA** field allows the operator to select on which play channel clips called using the keyboard and VGA should be loaded.

This field is only visible if the **Call channel VGA** parameter has been enabled in the Operational Setup menu, EVS Controller section. The field is only effective in CAM mode, not in CLIP mode.

On the keyboard, press **ALT + F1** to select PGM1, **ALT+F2** for PGM2/PRV, **ALT+F3** for PGM3, etc. This function is useful to load clips on channels that cannot be controlled by an EVS Remote Panel. If this channel is in PLST EDIT mode with a PRV, the clip will automatically cue up on the PRV.

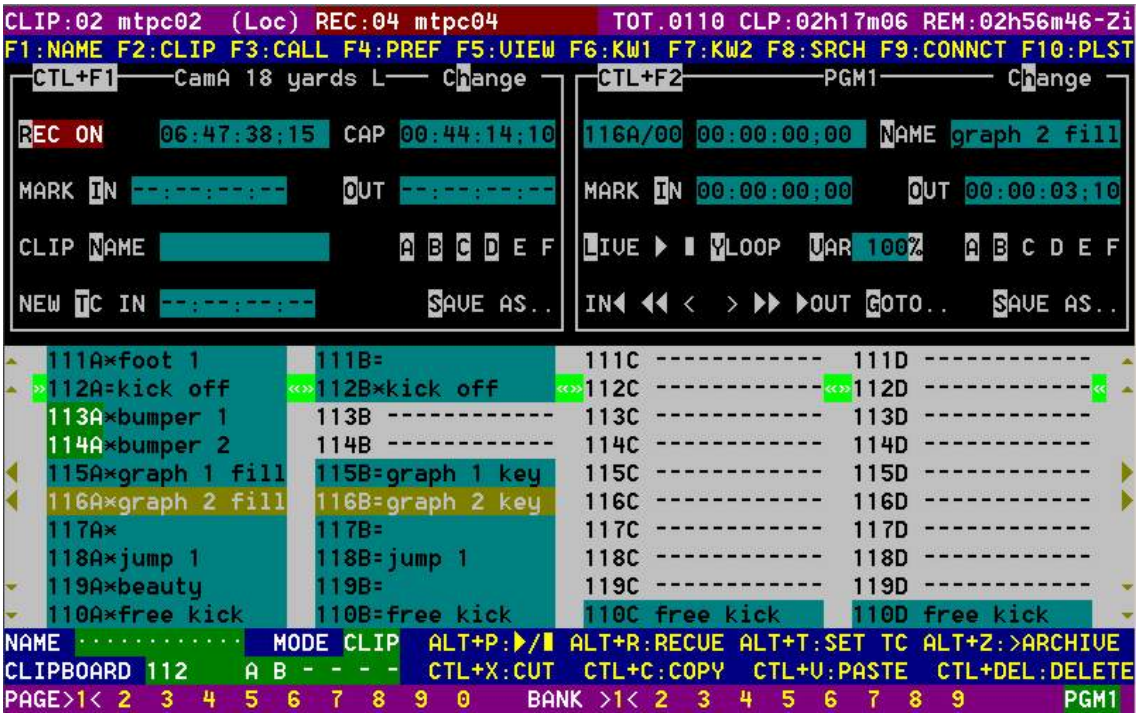
4.3.7. VGA Interface - VDR Panel

VDR Panel

The VGA VDR Panel is accessed from any VGA screen by pressing SHIFT+F9 on the keyboard:

- The lower section is similar to the clip screen, with the same functions.
- The upper section features two windows that can each take control of one channel of the server.

Pressing SHIFT+F9 in the VDR Panel returns the VGA to the Clip screen mode.



Upper Section

The two windows of the upper section can be assigned to a different channel of the server.

When entering the VDR Panel for the first time after starting the application, the control of both windows is disabled.

How to Control a Window

Press **CTRL+F1** to gain control of the left window, or **CTRL+F2** to gain control on the right window. The frame around the active window becomes green. Only one window can be active at a time.

How to Call a Command via Shortcut Keys

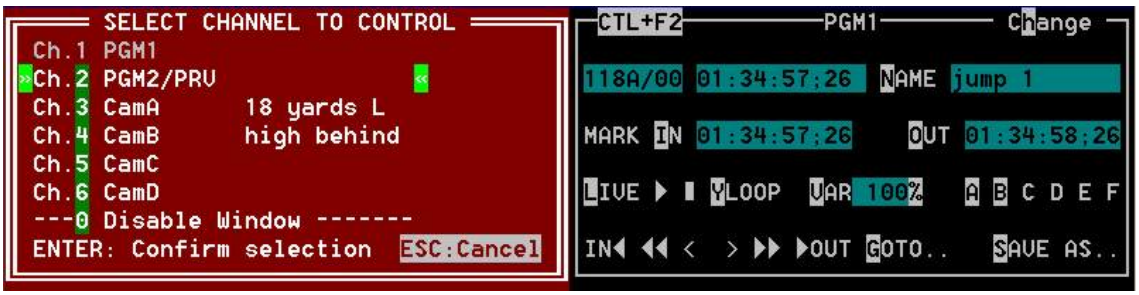
Inside the active window, letters/numbers highlighted in green indicate the keyboard shortcut to the corresponding function: press **ALT+**the highlighted letter/number.

The control of a channel from the VDR Panel is concurrent to any other controller that might be assigned to that channel: EVS Remote Panel or external protocol. A command sent from the VDR Panel to a channel will overwrite whatever the channel was doing at that time.

How to Assign a Channel in the VDR Panel

The name of the channel currently assigned to each window is displayed on the top of each of them. To assign a new channel to this window, press **ALT+H**. A new window appears on the other side to allow the selection of a new channel.

The Play channels already assigned appear in grey and cannot be selected.



You can assign a channel in two different ways:

- Use the **UP ARROW** and **DOWN ARROW** keys to select the channel and press **ENTER**. This is the only valid command for channels in 12-channel configurations.
- Press **ALT+**the number of the channel as highlighted in green. This command is only valid up to channel 9.

Select **0 – Disable Window** if you don't want to assign any channel to the window.

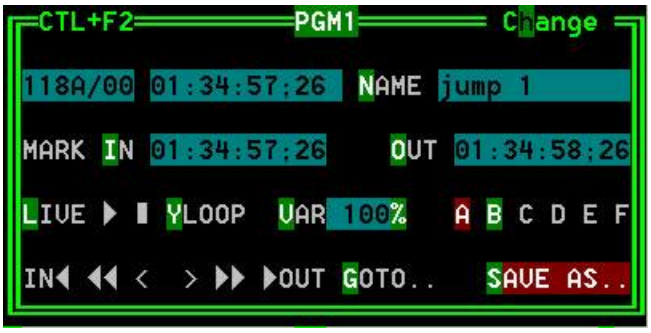
Depending whether a Play or Record channel is assigned to the VDR Panel window, its content is automatically updated.

Lower Section

The browsing of clips, the viewing modes (normal or extended), the way clips are recalled, moved and copied, etc. in the VDR Panel is strictly the same as in the Clip screen. The Connect window is called with **F9**, and allows to connect to other servers on the network.

4.3.8. VGA Functions - VDR Panel

In the Player Window



The following information are available in this screen:

- ID of the current element (clip or train)
- Current timecode
- Name of the current element
- List of available camera angles (green) and selected camera angle (red)

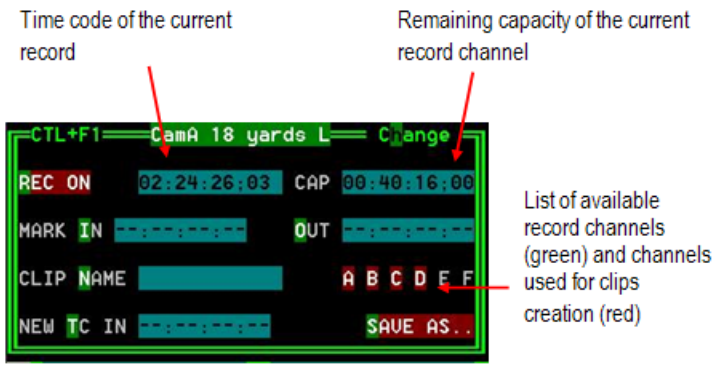
The following functions are available to play and browse the current element:

Command	Description
CTRL+ALT+ <CAM letter>	Select the camera angle of the clip you want to play.
ALT+P	Play from / Pause on the current picture
ALT+Y	Play the current clip in endless loop mode. The play will start from the current picture until the Short OUT point of the clip, then will automatically loop back to the Short IN point and keep playing, and so on...
ALT+V	PlayVar at the speed specified in the adjacent field. To edit the Var speed, press ALT+% (without SHIFT key), type the desired value and press ENTER to confirm.
< / >	Move 1 field backward / forward
SHIFT+< / >	Move 1 second backward / forward
CTRL+< / >	Fast Rewind+Fast Forward. The browsing will continue after the keys are released.
ALT+< / >	Goto IN / OUT
ALT+G	Goto timecode

After loading the desired clip, the following edition functions are available:

Command	Description
ALT+N	Renames the clip. Type the desired name and press ENTER to confirm or ESC to cancel.
ALT+I / ALT+O	Marks a new Short IN / Short OUT point on the current picture. The cursor is automatically placed in the adjacent field, so that the operator can manually enter the timecode of the desired Short IN / Short OUT point if needed. Press ENTER to confirm, or ESC to cancel.

In the Recorder Window



The VDR Panel Recorder can be used to start/stop the record, and to create clips from the local record trains. For example, it allows the creation of clips on a server that has no Play channel.

Press **ALT+R** to start or stop the record on the record channel assigned to the window. No confirmation is required.

In LSM mode, all recorders will be stopped at once to keep the synchronization between all record channels.

4.4. Managing Clips

4.4.1. Clip Creation in Multi-Essence

Introduction

The multi-essence feature with Proxy and Intra essences are supported on servers which can work in Multicam LSM. See the Server Configuration manual for more information.

When the EVS server runs a multi-essence configuration, the clips are managed in the same way as with an Intra-only configuration.

The multi-essence feature is as much as possible transparent to the operator, who should therefore continue working as usual whatever the active essence(s).

The behavior of the application is based on the principles described in the following sections.

Clip Creation

General Principles

- Each clip is created in all essences active in the running configuration.
- If you change the running configuration, you may be required to clear partially or totally the clips on the EVS server. This ensures the content is always consistent on the EVS server.
- For all essences of a clip, the user sees a single clip, and a single position in the EVS page and bank storage system.
- All essences of a given clip will be identical. This means, among others, that they will have the same IN and OUT points, ID, naming, keywords, ranking, auxiliary clip, protection, metadata, etc.
- When a clip is deleted, it is deleted in all available essences.

Exception

- The (Proxy) Lo-Res clips in a progressive resolution will have a different IN and OUT point than the corresponding Hi-Res clips:
  - If the IN point of a clip is on an odd frame, the Lo-Res clip starts with the even frame following the IN point.
  - If the OUT point of a clips is on an odd frame, the Lo-Res clip stops with the even frame preceding the OUT point.

Clip Preload and Playout

- The Intra essence is always played out.
- The Proxy essence is never be played out.

4.4.2. Creating Clips

Introduction

A clip is created by defining and IN and OUT point on a record train, and saving the A/V material between IN and OUT as a clip, hence preventing it to be deleted by the loop recording.

When you save your clip, clips are created automatically on the following cameras:

- on the primary channel.
- on all cameras associated to a player channel.
- on all cameras for which the **Automake Clip** option is set to **Yes** in Multicam Configuration window, Operation tab, Clips section.

A clip can be created with only an IN or only an OUT point. The system will automatically adjust the clip duration according to the **Default clip duration** defined setting in the Operational Setup menu, Clips section.

The auto-save process automatically saves clips and playlists at least every minute. Exiting the software (**ALT+Q**) will also save the clips and playlists.

- When the server reaches 5300 clips on a server limited to 5400 clips, a warning will be displayed to the operator. In addition, the warning code **!CLP** will then be displayed on the OSD, possibly alternating with other warning codes.
- When an operator tries to create a clip on a server on which the limit of 5400 clips has been reached, the following error message will be dipslayed: `"Clip creation failed, Server full."`

The OSD servers equipped with the MV4 board and the internal LAN are slightly different and provide more information compared to the OSD through the discrete monitoring outputs.

In the Remote Panel Interface

To create a new clip, proceed as follows:

1. Press the **RECORD** key to select the Live mode if you are not yet in this mode.
2. Use the jog dial to define the clip Short IN point then press the **IN** key to mark it
3. You can use the jog dial to define the clip Short OUT point then press the **OUT** key to mark it.

You can mark an IN or an OUT point on a paused record train and go back to live without losing the point marked by pressing **SHIFT+Return**.

4. Press **SHIFT+Page+F_ key** to select the page where the clip will be stored (page 1 contains clips 110 to 199, page 2 contains clip 210 to 299, and so on).
5. Press **SHIFT+F_ key** to select the bank where the clip will be stored (use **F1** to **F9** keys as **F10** is reserved for the playlist bank available on each page).
6. Press **F_ key** to select the location of the clip.

The clip is created in the specified location. The primary timecode of the clip is the primary timecode defined on the train where and when the clip has been created.

Press the F0 key on the Remote Panel to save ALL clips and playlists.

Example

To create a clip in location 213 (page 2, bank 1, location 3):

1. Press **SHIFT+Page+F2** to select page 2.
2. Press **SHIFT+F1** to select bank 1.
3. Press **F3** to select location 3 on the selected page.

In the VDR Panel Player

To create a new clip in the player window of the VDR Panel, proceed as follows:

1. Load a record train on the player.
2. Browse the record train to reach the desired Short IN or Short OUT point.
3. Press **ALT+I** or **ALT+O** to mark the Short IN or Short OUT point on the current picture.

   The timecode appears in the adjacent field, and the cursor is automatically placed on that field. This way, you can edit the timecode of the Short IN / Short OUT point, if desired and confirm with ENTER.
4. Optionally, repeat step 3 to define the second point (Short IN or Short OUT).

   If only a Short IN or Short OUT point is marked, the missing point is defined based on the Default Clip Duration parameter.
5. Press **ALT+S** to open the Save as window. If needed, you can name or rename the clip.
6. To save the clip, do one of the following actions:
   - To save the clip to the current cursor location in the lower section of the VDR panel, press **ENTER**
   - To save the clip in the first available clip location in the current server (that is the first available location where no camera angle is already present), press **ALT+U**.

From this window, you can browse the database, select a different page and bank, and even connect to another machine on the network using the Connect window.

In the VDR Panel Recorder

To create a new clip in the recorder window of the VDR Panel, proceed as follows:

1. Press **ALT+I** or **ALT+O** to mark the Short IN or Short OUT point on the last recorded picture.

   The timecode appears in the adjacent field, and the cursor is automatically placed on that field. This way, you can edit the timecode of the Short IN / Short OUT point, if desired and confirm with ENTER.
2. Optionally, repeat step 3 to define the second point (Short IN or Short OUT).

   If only a Short IN or Short OUT point is marked, the missing point is defined based on the Default Clip Duration parameter.
3. Press **ALT+A-F** to select only the record train(s) from which the clip(s) will be created.

   The letters highlighted in RED mean that a clip will be created from the corresponding record train and the letters highlighted in GREEN mean that the corresponding record train is available but will not be used to create a clip.
4. Optionally, press **ALT+N** to specify the name of the clip before saving it. Then enter the desired name and confirm it with **ENTER**.
5. Optionally, you can restripe the timecode of the IN point to a new value:

   Press **ALT+T**, enter the desired value and confirm with **ENTER**.

   When creating the clip, this timecode will replace the original one of the Short IN point.

6. Press **ALT+S** to open the Save as window. If needed, you can name or rename the clip.
7. To save the clip, do one of the following actions:
    - To save the clip to the current cursor location in the lower section of the VDR panel, press **ENTER**
    - To save the clip in the first available clip location in the current server (that is the first available location where no camera angle is already present), press **ALT+U**.

4.4.3. Deleting Clips

Introduction

From the LSM Remote panel, you can delete clips available on disks as well as growing clips, but:

- Loaded clips cannot be deleted.
- Clips that are on air cannot be deleted.
- In network mode, clips included in a playlist or currently used by another operator are protected and can therefore not be deleted.

In these cases, a warning message is displayed.

Additionally, a warning message box appears to confirm the deletion:

- when the clip is protected
- when the **Confirm del clp/plst** parameter is enabled for clips in the Operational Setup menu, Protection section.

When one clip of the clips of a bank are deleted, all playlists are scanned and that clip is removed from all of them.

In the Remote Panel Interface

Deleting a Single Clip

The **F_** key corresponding to the clip location on the Remote Panel must be green to be able to delete it.

To delete a clip, proceed as follows:

1. Select the page and bank where the clip that you want to delete is stored.
2. Press **CLEAR**, then press the **F_** key corresponding to the clip.

If no confirmation is required, the clip is instantly deleted.

3. If a confirmation message appears, press **ENTER** to confirm the selected clip deletion.

Deleting All Unprotected Clips in a Bank

To delete all unprotected clips stored on a given bank, proceed as follows:

1. Select the page where the bank that you wish to clear of all unprotected clips is stored.
2. Press **CLEAR**, **SHIFT** , then the **F_** key corresponding to the bank.

   The following confirmation message is displayed:

```
                Caution:

        This will delete all unprotected clips
             stored on bank X

         [Menu] : Cancel       [Enter] : Confirm
```

3. Press **ENTER** to confirm the unprotected clips deletion on the selected bank.

Deleting All Unprotected Clips

You can delete all unprotected clips in one operation using the **Clear Clips & PL** command.

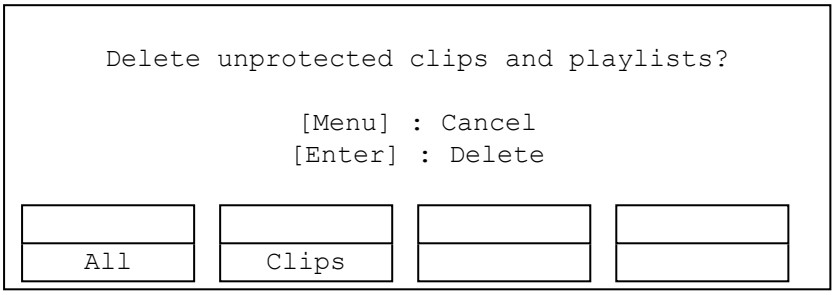
The following clips will not be deleted:

- clips stored on protected pages as defined in the Operational Setup menu, Protection section.
- clips protected by another protocol.
- clips stored in a playlists **if** you choose to delete clips only.

To clear all unprotected clips, proceed as follows:

1. Press **SHIFT+MENU** to go to the main menu.
2. Press **F7** (**Clear Clips & PL** command).

   The following screen opens:



3. Do one of the following actions on the Remote Panel:
   - Press A (All) to delete clips and playlists.
   - Press B (Clips) to delete only clips, and not playlists, nor clips included in playlists.
4. Press ENTER to validate the delete action.
5. When the confirmation message is displayed, press **ENTER** to confirm the deletion.
6. If the system is connected to an XNet network, an additional confirmation is required.
7. A message is displayed on the video monitor to notify the operation completion.

The **Clear Clips & PL** command is different from the **Clear Video Disks** command available in the Maintenance menu of EVS software.

- The **Clear Clips & PL** command deletes only the unprotected clips.
- The **Clear Video Disks** command in the Maintenance menu definitively deletes all video and audio data from the disks, including any clip stored in protected pages.

In the VGA Interface

To delete a clip, proceed as follows:

1. Move the cursor to the clip to delete.
2. Press **CTRL+DEL** or click on the corresponding area in the Clip Management area.
   - In CAM mode, only the camera selected is deleted.
   - In CLIP mode, all cameras of the clip are deleted.

4.4.4. Playing Back Clips

In the Remote Panel Interface

How to Recall a Clip

To recall a clip, proceed as follows:

1. Select the page where the clip is stored by pressing the SHIFT+Page key and the function key corresponding to the given page.
2. Select the bank where the clip is stored by pressing the SHIFT+F1 to F9 key corresponding to the requested bank.

   The clip banks 1 through 9 respectively correspond to the F1 to F9 keys within each clip page (1 to 10).
3. Select the position where the clip is stored in the bank by pressing the F1 to F9 key corresponding to the clip position.

In PGM/PRV mode, the pref cam is loaded on the PGM and the secondary cam is loaded on the PRV.

If Recall Clip Toggle option is enabled in the Operational Setup menu, EVS Controller section, pressing several times on the same F_ key will call successively all camera angles of that clip.

In Dual LSM mode, the camera angles of a clip are loaded as follows:

- If the clip contains the same camera angles as the cameras associated to soft keys, the camera angles are loaded on the camera positions corresponding to the camera association.
- If the clip contains more or other camera angles than the cameras associated to soft keys, the camera angles are loaded in alphabetical order.

How to Play Back a Clip

To play back a clip, do one of the following depending on the desired playback speed:

- Press the **PLAY** key to play back the selected clip at the default playback speed.
- Use the lever to play back the selected clip at a speed varying from 0% to 100%.

How to Play Back a Clip in Loop or Loop Bounce Mode

To play back a clip in loop or loop bounce, proceed as follows:

1. In the Operational Setup menu available from the main menu, set the Loop Button parameter (in EVS controller section) to Loop clip or Loop clip bounce.
2. Recall the clip you want to play in loop mode.
3. Press the **PLAY** key to play back the selected clip at the default playback speed.
4. Use the lever to play back the selected clip at a speed varying from 0% to 100%.

Playback Speed Options

- To play back a selected clip, with the lever, at a speed varying from 0% to a given maximum speed, you need to do the following:
  - Define the requested maximum speed in the **PGM Speed/Var max** parameter in the Operational Setup menu, EVS Controller section.
  - Select (highlight) the VarMax option in the secondary menu in PGM/PRV mode.
- To play back a selected clip, with the lever, at a given predefined speed, you need to do the following:
  - Define the requested maximum speed in the **PGM Speed/Var max** parameter in the Operational Setup menu, EVS Controller section.
  - Select (highlight) the PGMSpd option in the secondary menu in PGM/PRV mode.

Options for Camera Angle Selection

- If **PREF** is 'ON', the preferred camera angle of the clip appears on the primary channel, the secondary camera angle on the next controlled channel, and the other camera angles on the next channels in alphabetical order.
  - Example: If the preferred camera angle for clip 124 is camera C, when loading the clip, 124C is loaded on the primary channel, whatever the camera present on that channel before loading the clip.
- If **PREF** is 'OFF', the camera angle will be the same as the one already present on each controlled channel. If that camera angle does not exist, the first available camera angle of the clip is used.
  - Example: If camera B is the current camera on the primary channel, when calling clip 124, it is 124B that appears on the primary channel, even if it is not the preferred camera angle.
- When the operator is controlling only one channel (such as with **PRV CTL**), the clip appears at that location only. In the case of a clip containing a single camera angle (so only an 'A', 'B', 'C', or 'D' clip), when in full control of all outputs, the clip recalled will appear on the primary channel.

Growing Clips

You can recall and play back growing clips, or clips that are in the process of being created on a disk.

- As long as the OUT point of a growing clip is not available on the EVS server, the LED corresponding to the growing clip location blinks green when it is called and red when it is loaded on the Remote Panel. The clip LED will no longer blink as soon as both IN and OUT points are available on the EVS server.
- If the play reaches the end of the available material, it freezes until new material is available for play back. As soon as new material is available, the play resumes.
- When the OUT point of the clip is known, the remaining time is displayed, otherwise the remaining time display is '--:--:--:--' until the entire clip is copied.

In the VGA Interface

Introduction

In the Clip window, use the keyboard keys to move through pages/banks, as well as select and recall clips. The main commands to navigate in the window are detailed in the section "Clip Screen Overview" on page 50.

How to Load a Clip via the Clip Window

To cue up an highlighted clip, press ENTER.

The clip will be cued up on the on the primary channel controlled by the 1st Remote Panel and on the VGA Call Channel defined in the setup.

If the channel where the clip is supposed to be loaded is in Playlist Edit mode with a PRV channel attached, the clip will automatically cue up on the PRV channel.

How to Recall and Play a Local or Distant Clip

To recall a clip on the server you are connected to, proceed as follows:

1. Enter the 3 or 4 digits of the clip ID (for example 111 or 111A).

   The entry appears in the **Name** field.

   If you do not know precisely the clip ID, you can type and page number and bank number (only for local server).

2. Press **F3**:
   - If you entered only 3 digits, the clip primary camera is selected.
   - If you entered 4 digits, the clip given camera angle is selected.
   - If no clip matches the entry, no selection is done.

3. Press **ALT+P** to play back the selected clip.

Press **ESC** at any time to clear the **Name** field.

How to Recall and Play a Distant Clip

To recall a clip on another server than the one you are connected to, proceed as follows:

1. Enter the 3 or 4 digits of the ID, followed by a slash mark (/) and the network number of the machine (for example 111/03 or 111A/03).
   - To recall a local clip, whatever machine you are connected to, type 00 as network number (for example 111/00 or 111A/00).
2. The entry appears in the **Name** field.
3. Press **F3**.
   - If you entered only 3 digits, the clip primary camera is selected.
   - If you entered 4 digits, the clip given camera angle is selected.
   - If no clip matches the entry, no selection is done.
4. Press **ALT+P** to play back the selected clip.

In the VDR Panel

How to Load a Record Train

1. Press ALT+L to go in LIVE mode (or click on the LIVE function).
2. Press ALT+the letter of the desired record train (A/B/C/D/E/F), or click on it.

   The letters corresponding to the available record trains are highlighted in green, and the letter of the current record train in red.

How to Load a Clip

1. Use the arrow keys to move the cursor inside the lower section of the VDR Panel to the desired clip.
2. Press ENTER, or type the desired clip ID and press F3.
3. To select a different camera angle inside a clip, press CTRL + ALT+the letter of the desired camera (A/B/C/D/E/F), or click on it.

   Available camera angles are highlighted in green, the current camera angle in red.

4.5. Editing Clips

4.5.1. Naming a Clip

In the VGA Interface

How to Name a Clip via the Name Field

You can name a clip in the VGA interface.

To name a clip, proceed as follows:

1. In the Clip screen, select the clip to name by positioning the green arrows around the clip with the arrow keys.
2. Type in the desired name with the keyboard. All characters available from the keyboard are accepted, including blanks.
3. Press **F1**:
   - In CAM mode, only the camera where the cursor is located is named.
   - In CLIP mode, all cameras of the clip where the cursor is located are named.

The entry in the **Name** field is not cleared by pressing **F1** and remains for future use. Press the **BACKSPACE** key to delete the last character in the **Name** field, or press **ESC** to clear the whole field.

To be able to name/rename clips on a network machine, the **Clip edit by Network** parameter in the Operational Setup menu, Protection section, of the remote machine must be set to **Yes**. If you are unable to name a network clip, please check this setting on the remote machine.

How to Name a Clip Using a Keyword

You can name a clip using a keyword, or adding a keyword in an existing clip name as follows:

1. From the Clip screen, access one of the Keyword screens by pressing **F6** (ON-AIR keyword screen) or **F7** (OFF-AIR keyword screen).
2. Move the cursor to the desired keyword.
3. Press **ALT+N**.

The keyword is added at the end of the current name if there is enough space left.

How to Clear a Clip Name

1. In the Clip screen, select the clip whose name you want to delete by positioning the green arrows around the clip with the arrow keys.
2. If the **Name** field is not empty, press **ESC** to empty the **Name** field.
3. Press **F1** to assign this “empty name” to the clip.

About Clip Name Display

The standard used for encoding the clip name has an impact on the maximum number of characters, and whether or not the clip name is displayed on the OSD and VGA.

The following table summarizes how the clip name display is managed according to the encoding standard:

	ASCII	ASCII extended	Unicode (UTF 16)
Max. characters	24	24	12
Display on VGA	OK	Possibly distorted Name*	<UNICODE>
Display with discrete OSD	OK	Possibly distorted name*	<UNICODE>
Display with MV4 (with internal LAN)	OK	OK	OK

* when special characters are replaced by other ones due to differing conversion tables.

4.5.2. Changing the Primary Camera of a Clip

You can change the primary camera of a clip in the VGA interface.

To change the primary camera of a clip, proceed as follows:

1. In the Clip screen, move the cursor to the desired camera.
2. Press **F4** on the keyboard.
   - This camera becomes the new primary camera.
   - If the selected camera is a secondary camera (indicated by “=”), it becomes the primary camera and the previous primary camera becomes the secondary camera.

4.5.3. Editing the Ranking of a Clip

In the VGA Interface

Editing the Ranking of the Current Clip

1. From the Clip screen, access one of the Keyword screens by pressing **F6** (ON-AIR keyword screen) or **F7** (OFF-AIR keyword screen).
2. Press the **TAB** key to move the cursor to the lower area of the screen.
3. Use the **LEFT ARROW** and the **RIGHT ARROW** keys to select the desired ranking.
4. Press **ENTER**.

The selected ranking is highlighted in green.

4.5.4. Shortening a Clip

You can shorten a clip using the Remote Panel.

To shorten a clip, proceed as follows:

1. Recall the desired clip by pressing the corresponding **F_** key.
2. Move the jog dial to browse the clip and reach to the desired Short IN point.
3. Press the **IN** key to mark a new Short IN point. This new Short IN point is instantly saved.
4. Move the jog dial to reach the desired Short OUT point.
5. Press the **OUT** key to mark a new Short OUT point. This new Short OUT point is instantly saved.

Move the lever or press the **PLAY** key to play the clip. The replay will stop at the new Short OUT point (or after the Short OUT point if the post-roll mode is enabled).

You can use **Goto IN** and **Goto OUT** functions to jump immediately onto Short IN or Short OUT points respectively.

4.5.5. Restriping a Clip

Limitation of the Remote Panel Interface

The function to restripe the timecode of a clip via the Remote Panel is restricted as follows and you should use the VGA interface to change these parameters:

- You can modify only the primary timecode.
- You cannot modify the date of the clip.
- You cannot modify the type of the primary timecode.

In the Remote Panel Interface

To restripe the timecode of a clip, proceed as follows:

1. Recall the clip by pressing the corresponding **F_** key.
2. Move the jog dial to reach the picture where you want to define a new timecode.
3. Press the **MENU** key to access the secondary menu.
4. Press **SHIFT+C** (Sort=>TC) to call the **Sort TC** function.
5. Press **SHIFT+B** to call the **Set TC** function.
6. Enter the new timecode for the current picture.
7. In 59.94 Hz modes (NTSC), press **SHIFT+MENU** to select between 'Drop Frame' and 'Non Drop Frame' modes.
8. Press the **D** key to select 'CAM' or 'CLIP' mode.
    - In CAM mode, only the timecode of the camera angle loaded on the primary channel will be changed.
    - In CLIP mode, the timecode of all camera angles of the clip will be changed.
9. Press **ENTER** to confirm or **MENU** to cancel.

The primary timecode of the entire clip is updated according to the new timecode value so that the timecode remains continuous over the whole clip.

Next time this function is called, the value previously used will be set as default.

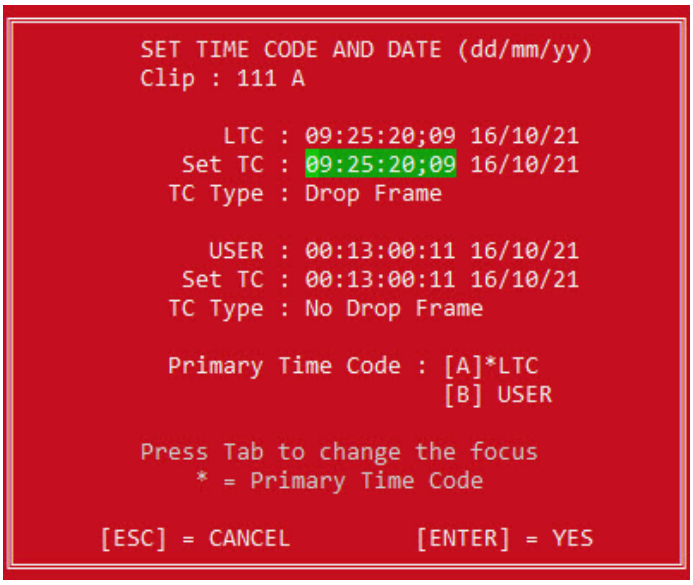
In the VGA Interface

Before you restripe the clip TC, select the CAM or CLIP mode depending on what you want to achieve:

- In **CAM** mode, only the timecode of the camera angle loaded on the primary channel will be changed.
- In **CLIP** mode, the timecode of all camera angles of the clip will be changed.

To restripe the timecode of a clip, proceed as follows:

1. Move the cursor on the desired clip and press **ENTER** to recall it.
2. Press **ALT-T** on the keyboard to call the **SET TC** function. The following Set Timecode screen is displayed:



3. To modify one of the following timecodes:
    - The LTC timecode and date: Type in the new timecode for the Short IN point and date of the clip in the **Set TC** field following the **LTC** field.
    - The user-defined timecode and date: Type in the new timecode for the Short IN point and date of the clip in the **Set TC** field following the **USER** field.
    - The primary TC for this clip: Press the **A** or **B** key corresponding to the requested primary TC.
4. In 59.94Hz modes (NTSC), press the **SPACEBAR** to select between 'Drop Frame' and 'Non Drop Frame' modes.
5. Press **ENTER** to confirm or **ESC** to cancel.

The timecode of the entire clip is updated according to the new timecode value so that the timecode remains continuous over the whole clip.

4.6. Transferring Clips

4.6.1. Clip Transfers in Multi-Essence

Move and Copy Actions

Move

All essences of a clip are moved simultaneously.

Local Copy

When a clip is copied to the same EVS server, all essences of the clip are copied.

Network Copy

When a clip is copied to another EVS server, all essences of the clip are copied.

Push Actions

When a clip is pushed to another EVS server, all essences are pushed in case the essences are also active on the other server.

4.6.2. Copying and Moving Clips

Principles

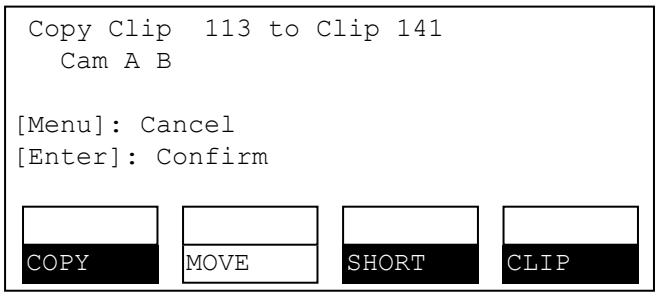
- Copying a clip gives a new clip which is totally independent from the original. It can therefore be trimmed, named, deleted, etc. without affecting the original.
- Copying clips locally on a server does not duplicate the video and audio material on the drives: it simply creates a separate reference to the same material. This means that the available storage capacity will not decrease when making copies of clips on a server. It also means that deleted copies of clips will not increase the available capacity of the server, as the material will not be deleted as long as one instance of the clip remains.
- Copying clips across the network will copy the material so it will reduce the capacity of the server where the clips are copied by the duration of the clips.
- When moving a clip using the Move function, the reference to this clip in playlists will automatically be updated. This is very useful when you wish to re-organize your clips across different pages and banks, since playlists are not affected. If you copy the clips and then delete the originals instead of using the Move function, the reference to the original clips will be removed from the playlists when deleting these clips.

In the Remote Panel Interface

To copy or move a clip, proceed as follows.

1. Select the original clip. It can be a local, a remote, or a growing clip.
2. Select an empty location locally or on an EVS server connected to the network.

   The following Copy/Move menu is displayed:



3. Select the **COPY** or **MOVE** function by pressing the **A** or **B** key. The selected function will be highlighted on the Remote Panel and the message will be updated accordingly on the OSD.
4. Press the **D** key in the Copy/Move menu to select:
   - 'CLIP' mode: all camera angles of the clips will be copied or moved.
   - 'CAM' mode: only the camera angles of the clip loaded on the controlled channels will be copied or moved.

5. For a copy only, press the **C** key in the Copy/Move menu to select:
    - 'SHORT' mode: only the material between the Short IN and Short OUT points of the original clip will be copied, augmented by the duration of the guardbands defined on the destination system.
    - 'LONG' mode: the entire original clip, including its guardbands, will be copied on the destination system.

The default settings for the Copy/Move menu are: COPY, SHORT, CLIP. If you change these settings, the new settings will be re-used the next time this menu is called. The default settings will be automatically restored when starting a new Multicam session.

6. Press **ENTER** to confirm or **MENU** to cancel.

During a network copy:
- The VGA displays the % copied of each clip.
- The corresponding light flashes green.
- Press **CLEAR** and the corresponding **F_** key to cancel the network copy. A confirmation window is displayed, press **ENTER** to confirm cancelation of the copy.

In the VGA Interface

Copying and moving clips is performed using the CUT, COPY and PASTE functions available in the Clip Management area.

How to Copy a Clip

To copy or move a clip, proceed as follows.

1. Move the cursor to the clip to copy.
2. For a copy, press **CTRL+C** (**COPY** function) or for a move, press **CTRL+X** (**CUT** function) or click on the corresponding area in the Clip Management area. During a move operation, the original clip is deleted.
3. The clip is copied to the clipboard .The clipboard area displays its content: clip number, network number if the copied clip is a remote one, and the selected cameras.
    - In 'CLIP' mode: all camera angles of the clips will be copied.
    - In 'CAM' mode: only the selected camera angle will be copied.
4. Move the cursor to the clip/playlist location where the content of the clipboard should be copied.

For a LONG copy, where the entire original clip is copied, including its guardbands:

5. Press **CTRL+V** (**LONG PASTE** function) or click on the corresponding area in the Clip Management area.

For a SHORT copy, where only the material between the Short IN and Short OUT points of the original clip is copied, augmented by the duration of the destination default guardbands:

6. Press **CTRL+SHIFT+V** (**SHORT PASTE** function) or click on the corresponding area in the Clip Management area.
   - In 'CLIP' mode: only the available camera locations inside the destination clip are copied. If some camera angles already exist for the destination clip, they are not be overwritten by the corresponding camera in the clipboard.
   - In 'CAM' mode: the selected camera angle is copied.
7. During a move operation, the original clip is deleted.

A “Cut & Paste” of a clip is equivalent to a “Move Clip”, meaning that any reference to that clip inside playlists will be updated to the new location of that clip. This is not the case when doing a “Copy & Paste”, then deleting manually the original clip.

How to Copy a Clip in the VDR Panel Player

To copy a clip from the VDR Panel Player, proceed as follows:

1. Load the original clip
2. Press ALT+S to save the current clip to another location. This creates a copy of the clip.
3. Save the clip to the current cursor location by pressing ENTER, or to the first available clip location on the current server by pressing ALT+U.
4. You can also rename the clip during this operation.

The Cut / Copy / Paste functions are available at any time to move and copy clips in the lower section of the VDR Panel, even when one of the upper windows is active.

4.6.3. Canceling a Network Copy

In the Remote Panel Interface

To cancel a remote copy, proceed as follows:

1. While the clip is copying, its light flashes green.
2. Pressing CLEAR+the corresponding F_ key to cancel the network copy.
3. A confirmation screen comes up to cancel the network copy. Press the required key.

```
        Cancel network copy ?

    [MENU]: Do not cancel copy
    [ENTER]: Cancel copy
```

4. Press **ENTER** on the Remote Panel to confirm that you cancel the copy. Otherwise, press **MENU**.

In the VGA Interface

1. In the Clip window, highlight the clip and press the **CTRL+DELETE** keys.
2. When the confirmation dialog box opens, press **ENTER** to confirm that you cancel the copy. Otherwise, press **ESC**.

If the **Copy Clip** option copies several cams of the same clip and some of them have already been copied before the **Cancel** function, the **Cancel** does not delete the copied files, it just cancels the cam(s) that are still copying or to be copied of that clip. It does not cancel the copying of other clips.

The **Cancel** function remains possible even if the page where the clip is being copied is protected.

4.6.4. Pushing Clips

Introduction

The Push function allows operators to easily send a copy of a clip to another machine on the network, via the GbE network or the SDTI network.

When the operator selects a clip and chooses the **Push** command on the Remote Panel, the clip is copied to the EVS server (called push machine) based on the Push settings defined.

Depending on the CAM/CLIP mode (selected by the **D** key), only the camera angle loaded on the controlled channel is pushed (CAM mode), or all camera angles of the clip are pushed at once (CLIP mode).

Push Machines

- If one or two default push machines have been defined in the **Push Target 1/2** settings, the clip will be automatically sent to this/these machine(s).
- If no default target is defined, the list of machines available on the network will appear. As soon as the operator selects one of them, the clip is pushed.

  Depending on the value assigned to the **Push Target** setting, the list of possible targets submitted to you will contain EVS servers on the SDTI network and/or EVS servers on the GbE network.

Receiving Pages and Slots

To make it easier for the operator to locate the clips pushed to his server, a receiving page and one or more receiving slots can be defined in the settings:

- The value of the **Push Receive Page** setting is used to select the first page.
- The camera angles specified in the **Push Receive Slots** setting are used in priority on all pages for push actions in cam mode.

Push Mechanism in CAM Mode

When the operator presses the **Push** command, the camera angle loaded on the controlled channel of the EVS server is pushed into the push receive page and on the first free push receiving slot defined in the settings.

When the current bank is full, the push mechanism overflows on the next bank.
When the current page is full, the push mechanism overflows on the next page.

When all slots corresponding to the push receiving slots have been filled in on all pages, all angles become available for push actions. The mechanism shall restart on the start page but with all angles. All the angles remain available until a new Multicam session is started.

Push Mechanism in CLIP Mode

When the operator presses the **Push** command, the clip loaded is pushed with all its camera angles into the push receive page.

The clip is pushed onto the first free clip position on the push receive page. The receiving slots setting is not taken into account.

In SDTI, the initial camera positions are preserved on the pushed machine.

In GbE, the initial camera positions are not preserved on the pushed machine.

When the current bank is full, the push mechanism overflows on the next bank.

When the current page is full, the push mechanism overflows on the next page.

In both modes, the operator who pushes the clip is notified when the receive page defined on the destination machine is full. The operator can press **MENU** to return to the normal menu.

How to Push a Clip to an EVS Server

Before you push clips, check that the Push settings are defined according to your requests.

You can push a clip from a Remote Panel as follows:

1. Load the clip you want to push to another EVS server on the play channel you are controlling.
2. Press **MENU** to call the secondary menu.
3. If requested, press **D** to toggle the CAM/CLIP mode as this determines whether you will push only the loaded camera angle or all existing camera angles for the clip.
4. Press **SHIFT+A** to trigger the Push action.

A message appears for a few seconds on the LCD to inform you whether the clip is correctly being pushed, and to indicate the clip location on the receiving machine.

4.7. Searching for Clips

4.7.1. Searching for Clips by Timecode

Introduction

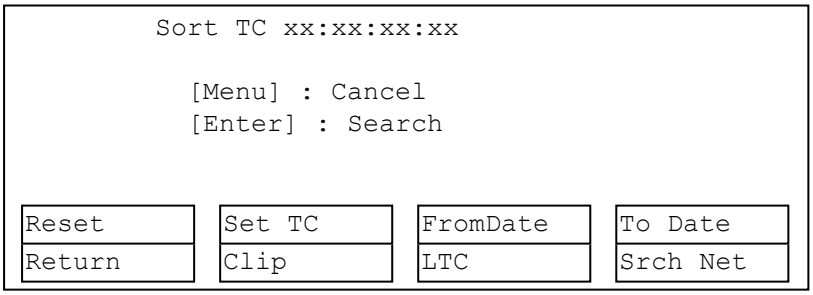
Searching for clips by timecode is only available using the Remote Panel.

The Reset function resets all default parameters, including the ones related to the material and the TC type to search on.

Starting a Search

To search for clips or trains containing a specific TC, proceed as follows:

1. Go to the main Remote screen in Clip mode or Train mode.
2. Press **MENU** to access the secondary menu.
3. Press **SHIFT+C** to access the **Sort TC** function.
4. The following screen is displayed:



5. Type the timecode you want to search for with the **F_ keys**.
6. If requested, press **SHIFT+C** to define a date from which the search should be applied:
7. Type the date in dd/mm/yy format using the **F1** to **F10** keys.
8. Press **ENTER** to confirm and exit the field.
9. If requested, press **SHIFT+D** to define a date to which the search should be applied:
10. Type the date in dd/mm/yy format using the **F1** to **F10** keys.
11. Press **ENTER** to confirm and exit the field.
12. Press one or several times the **B** key to specify whether to search for clips (**Clip**), train (**Rec**), or both (**Clip+Rec**).

13. Press one or several times the **C** key to specify whether to search for the LTC (**LTC**), the user-defined timecode type (**USER**) or whatever TC type (**LTC+USER**).
14. Press the **D** key to specify whether to search only for local clips (**Srch Loc**) or on the entire XNet Network (**Srch Net**).
15. Press **ENTER** to launch the search.

Displaying Results

If matching clips are found, the Remote Panel will automatically be in Browse mode (the **Browse** key is red), allowing the operator to quickly view the frame of each clip corresponding to the requested timecode by rotating the jog dial.

To jog inside a clip:

1. Press the **Browse** key to disengage the Browse mode.
2. Move the jog dial to move within the clip.

To come back in the search results, at the beginning of the last clip you browsed:

- Press the **Browse** key again to reactivate the Browse mode.

You can then jog back and forth to the previous or next clip in the search results.

To jump from the last clip in the list to the first:

- Move the jog dial clockwise.

To jump from the first clip in the list to the last:

- Move the jog dial counterclockwise.

Search results are reset when going by to LIVE mode, or when a new search is performed.

Examples

- You have loaded the picture of an interesting event, and you want to see all clips that contain that same event. Call the **Sort->TC** function, select the network/local search option and launch the search. Move the jog dial and you will see the same event on the same timecode from all available camera angles that have been clipped.
- You know the timecode of a particular event and you want to see all clips containing that event. Call the **Sort->TC** function, edit the timecode to the desired value, select the network/local search option and press **ENTER**: you will obtain the same result as above if the timecode belongs to the same type as the one previously mentioned.

4.7.2. Searching for Clips via Search Options

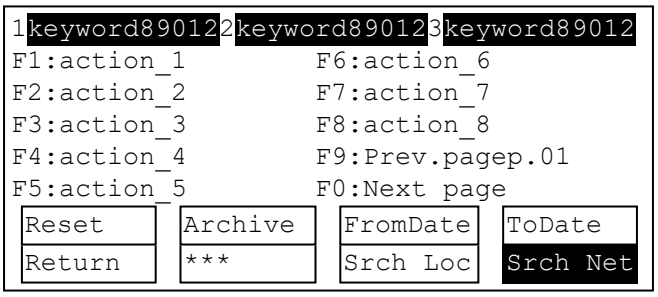
Introduction

Keywords or ranking assigned to clips as well as creation date or archive status of the clip can be used to search the clips database.

In the Remote Panel Interface

- When the current element on the primary channel is a record train, the **Search** function is directly available from the C position in the secondary menu. To call it, press **MENU** to enter the secondary train menu, then press once the **C key**.
- When the current element on the primary channel is a clip, the **Search** function is still available from the same location, but is “hidden” behind the **Name** function. To call it in this case, press **MENU** to enter the secondary clip menu, then press twice the **C key**.

In both cases, the LCD display looks like (in LIST mode):



All search criteria available are explained below.

As soon as you have selected your search criteria, the clips matching the search criteria are available for browsing as explained in "Browsing Through Results" on page 89.

Search Based on Keywords

Select the keywords that you want to use as search criteria the same way as you select them during assignment to a clip, in LIST or NUMERIC mode.

Up to three keywords can be selected as search criteria.

If all three keyword locations are used, some of them must be cleared before selecting a new keyword:

- Press **CLEAR+F1 / F2 / F3** to clear to corresponding keyword location.

To clear all three keyword locations and reset the ranking to the lowest level:

- Use the **Reset** command (**SHIFT+A**) at any time.

Search Based on Ranking

A ranking can also be used as the only search criteria, or can be combined to the keywords as an additional criterion.

- Press the **B key** several times to select the desired ranking.

To clear all three keyword locations and reset the ranking to the lowest level:

- Use the **Reset** command (**SHIFT+A**) at any time.

Search Based on the Archive Status

The Archive field allows selecting archive status for search criteria. Press SHIFT + B to change the display of the Archive soft key until it matches the requested search value:

Parameter	On the Remote
None (default)	Archive
Search for clips not archived	>Archive
Search for clips to be archived	>Archive (blinking)
Search for clips archived	>Archive

It is possible to include trains in the search. Use the **B key** to toggle between **CLIPS**/**CLIPS+REC**/**REC**.

Search Based on From Date / To Date

Select **FromDate** and **ToDate** using the **SHIFT+C** and **SHIFT+D** keys. Pressing on any of those keys changes the display on the key to **dd/mm/yy** to indicate the date format.

- The **F keys** are used to enter the date.
- The **Clear** key is the **BACKSPACE**.

To search only for a specific date, use the same date twice in the **FromDate** and **ToDate** fields.

Once a date is entered, press **CLEAR, SHIFT+C** or **CLEAR, SHIFT+D** to respectively reset the **FromDate** or **ToDate** to the default parameter (**dd/mm/yy**).

Search Local Server or Entire SDTI Network

Once the search criteria are defined:

- Use the **Srch Loc** command (press the **C** key) to search the local clips database.
- Use the **Srch Net** command (press the **D** key) to search the entire network database.

Browsing Through Results

The matching clips are the ones that contain all keywords used as search criteria, and that have at least the requested ranking.

If matching clips are found, the remote will automatically be in Browse mode (the **Browse** key is red), allowing the operator to quickly view the Short IN of each clip corresponding to the search criteria by rotating the jog dial.

To jog inside a clip:

- Press the **Browse** key to disable the Browse mode.
- Move the jog dial.
- To return to the Browse mode inside the search results, press the **Browse** key again.

Notes:

- Search results are reset when going by to Live mode, or when a new search is performed.
- If no matching clips are found, a message notifies the operator.

Adding the Search Results to the Current Playlist in List Mode

To add the search results (clips only) to the current playlist, you can use the following key combinations:

When you are in the secondary menu and the keyword menu is displayed:

- Press **ENTER** to insert the clip currently selected in the current playlist.
- Press **SHIFT+ENTER** to insert all clips of the search results at the end of the current playlist.

When you are in the main menu:

- Press **ENTER** to insert the current clip in the current playlist.
- Press **SHIFT+ENTER** to insert all clips of the search results at the end of the current playlist.

Adding the Search Results to the Current Playlist in Numeric Mode

To add the search results (clips only) to the current playlist, you can use the following key combinations:

When you are in the secondary menu, the keyword menu is displayed, and at least a keyword is selected with the F keys:

- Press **ENTER** to assign the selected keyword(s) to the current clip.
- Press **SHIFT+ENTER** to insert all clips of the search results at the end of the current playlist.

When you are in the main menu:

- Press **ENTER** to insert the current clip in the current playlist.
- Press **SHIFT+ENTER** to insert all clips of the search results at the end of the current playlist.

Resetting the Search Criteria

To **Reset** the search criteria, press **SHIFT+A**. The default values of the search criteria (no from/to date) are reset and the default TC is set to the loaded TC on the PGM.

Leaving the Search Function

Use the **Return** command (press the **A** key) to exit the search function without performing any search.

In the VGA Interface

The Search Window

Press **F8** to access the search screen. The VGA search screen is made up of several areas that will be named as follows, from top to bottom:

#	Area	Description
1.	Title bar	Bar containing the following elements from left to right: • Screen name • Name of the current keywords file displayed against a red background in the center of the Title bar • Keyword page displayed.
2.	Function bar	Bar displaying information on the various function keys available and their purpose.
3.	Keyword list	Area displaying the list of keyword list on the page specified in the Title bar.
4.	Operation tab	Tab displaying the key combinations available and the associated actions.
5.	Search Criteria area	Area displaying the search criteria available

Use the **TAB** key to shift from the Keyword list to the Search Criteria area and vice versa.

Search Criteria

Different criteria can be combined to search the database. They can be defined in the search criteria available at the bottom of the screen.

When you access the search screen, the criteria that were last defined are still available on the screen.

If the red cursor is located on another field in the Search Criteria area, use the ←/→ arrow keys to move from one field to the previous or next one, until the red cursor is positioned on the requested field.

Criteria	Description
Timecode	This restricts the search to the clips containing the timecode specified in this field. The timecode search is not applied on growing clips. • To define a timecode, type the desired value when the red text cursor is visible in that field. • Use the **BACKSPACE** key to clear the last digit entered.
Date from / to	This restricts the search to clips created between these 2 dates specified in these fields. • If only **Date to** field is defined, all clips created before that date will be considered. • If only **Date from** field is defined, all clips created after that date will be considered. • Use the **BACKSPACE** key to clear the last digit entered. • Press the **TAB** key again to move the cursor back to the keywords list.
Level / Ranking	This restricts the search to the clips with a ranking equal or higher to the ranking defined in that screen. • Press the **LEFT ARROW** or **RIGHT ARROW** key until you reach the desired ranking. • Press **ENTER**. • The selected ranking is highlighted in green. • Press the **TAB** key again to move the cursor back to the keywords list.

<table>
<tr><th>Criteria</th><th>Description</th></tr>
<tr><td>Keywords</td><td>This restricts the search to the clips containing all keywords defined in this screen.
Move the cursor to the desired keyword to assign a keyword and press ENTER.
A maximum of 3 keywords can be used as search criteria.
If all 3 keyword locations are already occupied, you should clear some of them to select new keywords.</td></tr>
<tr><td>Archive status</td><td>This restricts the search to the clips having the archive status selected.<table><tr><th>Parameter</th><th>On the VGA</th></tr><tr><td>None (default)</td><td>-</td></tr><tr><td>Clips not archived</td><td>X</td></tr><tr><td>Clips to be archived</td><td>>A</td></tr><tr><td>Clips archived</td><td>A</td></tr></table></td></tr>
</table>

Search Options

In addition to the search criteria available at the bottom of the screen, two search options are accessible using the **F2** and **F4** keys:

- Consider record trains and / or clips in the search:
  - This option allows the inclusion of record trains in the results in searches with timecode criteria.
  - Press **F2** to toggle between **CLIP**, **CLIP+REC**, and **REC**.
- Consider timecodes from the LTC and/or USER TC tables in the search:
  - This option allows to take into account the timecodes from the LTC and/or the USER TC tables in searches with timecode criteria.
  - Press **F4** to toggle between **LTC**, **USER**, and **LTC+USER**.

Clearing Keywords in the Search Criteria

1. Press **TAB** to move the arrow cursor to the lower area of the screen.
2. Use the **LEFT ARROW** or **RIGHT ARROW** key to move the cursor to the keyword to remove
3. Press **CTRL+DEL**.
4. Press the **TAB** key again to move the cursor back to the keywords list.

Clearing All Search Criteria

- Press **ALT+DEL** on the keyboard.

All keywords, timecode, Date From and Date To fields assigned as search criteria are removed.

The ranking is reset to the lowest level ("-").

Start Search

When performing the search, only the clips matching all criteria defined by the operator will be included in the search results.

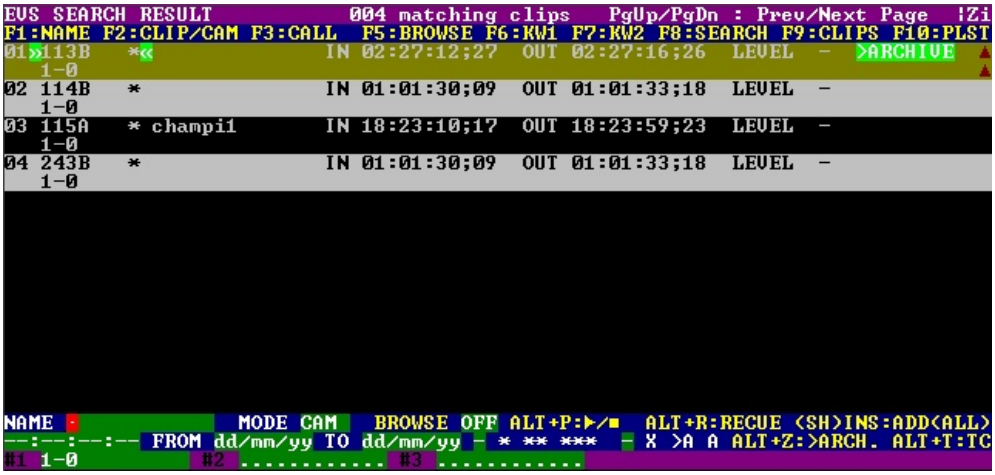
- Press **CTRL+S** (or click on the corresponding area) to search the local database.
- Press **ALT+S** (or click on the corresponding area) to search the entire network database

Search Results

The results of the database search are displayed in the Search Result screen. If new clips that match the search criteria are created after the search, they will be automatically added to the list.

The Search Result screen includes the following areas:

- At the bottom of the screen, the search criteria are displayed for information.
- In the center of the screen, a list of all matching clips is displayed.



For each clip, the following information is displayed:

- Position in the list
- Clip ID
- Clip name
- Timecode of Short IN and Short OUT points
  - Timecodes from the LTC table are displayed in grey/black.
  - Timecodes from the USER TC table are displayed in yellow.
- Ranking
- Archive status
- Current keywords.

Browsing Through Results and Loading a Clip

To browse the results list, use the **UP ARROW** and **DOWN ARROW** keys, **PAGE UP**, **PAGE DOWN**, **HOME**, and **END**.

- If the Browse mode of that screen is 'ON' (**F5:BROWSE**), the clip is loaded on the primary play channel as soon as it is selected.
- If the Browse mode is 'OFF', press **ENTER** after selecting the clip to load it.

When a clip is displayed in the search results with a timecode from the VITC table (when this search option has been selected), the clip is loaded with this timecode even if the primary TC is the LTC.

Other Possible Actions

Many functions from the Clip screen are also available from the Search Results screen:

Function	Keyboard shortcut
Name the selected clip	F1
Toggle between CLIP/CAM mode	F2
Recall the selected clip	F3
Playing or pausing the clip	ALT + P
Recue the selected clip	ALT + R
Set the clip TC	ALT + T
Archive the selected clip	ALT + Z
Add the selected clip to the current playlist	INSERT
Add all clips from the search results to the current playlist	SHIFT + INSERT

To return to the Search screen to perform a new search, press **ALT+S** or **F8**.

The previous search criteria are kept until you select new criteria.

Adding the Search Results to the Current Playlist

- To add a clip from the results list to the current playlist from the remote panel:
  - Call up the clip.
  - Press **INSERT** or **ENTER** on the Remote Panel.
- To directly add the search results (clips only) to the current playlist from the VGA:
  - Press **INSERT** on the selected clip to insert only the highlighted one.
  - Press **SHIFT+INSERT** to insert all clips at the end of the current playlist.

4.8. Managing Cue Points

Description

Cue points are used as tags to mark points on the record trains and clips during recording or playback.

Once this marking is done, you can use the cue points to quickly and easily retrieve those specific moments and use them.

Cue Points Configuration

The behavior of the cue points on clips and on record trains is defined by the following parameters:

- **Mark cue points** (Live / Playback)
- **Preroll**
- **Freeze on cue points** (No / Clips + Record trains / Clips / Record trains)

  See the section "Clips Settings" in the Configuration manual for detailed information on these settings.
- **Browse button** (Browse / Sort TC)

  See the section "Controller Settings" in the Configuration manual for information on this setting.

Possible Actions on Cue Points

Adding Cue Points

To add a cue point, press the **Mark** key.

- If **Mark cue point** is set to **Playback**, the cue point is added on the current clip.
- If **Mark cue point** is set to **Live**, the cue point is added on the record train of the PGM recorder.

Deleting Cue Points

To delete a single cue point, proceed as follows:

1. Go to the cue point.
2. Press the **CLEAR** + **Mark** keys.

To delete all cue points, proceed as follows:

1. Make sure you are **not** on a cue point.
2. Press the **CLEAR** + **Mark** keys.

Browsing Through Cue Points

To go to the previous available cue point, press the **Last Cue** key.

- If a preroll value is set, the PGM goes to the previous cue point minus the preroll duration.
- If the timecode of the previous cue point minus the preroll duration happens before Protect IN, the PGM goes to the Protect IN point.
- The previous cue point is loaded with the same camera angle as when it was defined. If this makes a duplicate of a camera angle that is displayed on another controlled PGM, the camera angles are swapped between both PGMs.

To browse through the cue points, proceed as follows:

1. Make sure the **Browse** parameter is set to **Browse**.
2. Make sure cue points are defined on the current clip or record train.
3. Press the **Browse** key to browse through the cue points of the clip or record train.

Freezing on a Specific Image

To freeze on a specific image, proceed as follows:

1. Make sure the **Freeze on cue points** parameter is enabled set to **Clips / Record trains / Clips + Record trains** in the Multicam Configuration module depending on whether you want to enable the setting in clips and/or in record trains.
2. Add a cue point on the image you want to freeze on.
3. Go to that cue point.

If a cue point is located between **OUT** point and **OUT** point + PostRoll, the playout does not freeze on the OUT point but on the cue point; and then on the OUT+ PostRoll.

If a cue point is located after the OUT + PostRoll, the playout freezes on the OUT + PostRoll, and then on the cue point.

Cue Point Behavior

- Cue points are managed only using the LSM Remote Panel.
- Cue points are assigned to an LSM Remote and stored on the EVS server RAM memory as long as a Multicam configuration is running. The cue points created on a Remote Panel therefore remain available during the whole session on this Remote Panel even if you change the number of Remote Panels in the main menu.
- During local clip copy, the cue points associated to the clip are also copied.
- During remote clip copy, the cue points associated to the clip are **not** copied.
- During clip creation, all cue points existing on the record train between Protect IN and Protect OUT points are stored along with the clip in Multicam.
- A maximum of 32 cue points can be stored per clip:
  - If more than 32 cue points are defined on the portion of the train being clipped, only the last defined 32 cue points are copied to the clip.
  - When a clip has 32 cue points defined, additional cue points delete the oldest ones.
- When a clip or a record train is loaded, the **Mark** key color on the LSM Remote is:
  - **Off**: No cue points are defined.
  - **Green**: At least one cue point is defined.
  - **Red**: The PGM is located exactly on a cue point.

5. Playlist Management

5.1. Introduction

Playlist Creation

Playlists can be created on the server:

- via the LSM Remote Panel and/or the Multicam user interface. The playlists are using specific banks on each page that can be accessed directly without requiring a dedicated creation step (please refer to "Setting and Loading Playlists" on page 109).
- by means of the Playlist Panel application in IPDirector.
- via external protocols.

Limitation on Playlist and Timeline Elements

- A playlist can include up to 999 elements.
- Up to 16000 playlist elements can be saved on a server.
- The temporary playlist elements, available for undo and redo actions, are stored on the server and are purged each time the Multicam application is closed.

Playlist Location

All playlists created are automatically stored on the banks dedicated to playlists and timelines on the server, i.e. the bank 10 of each page.

Playlists on page 10 are not available from the EVS Remote Panel. These playlists are reserved for external protocols (Odetics, Louth VDCP, EVS AVSP).

Refreshing the Playlist Information

Playlist information is not permanently refreshed on the network. The playlist information for a remote playlist bank is only transferred when entering that bank. If you are already connected to a remote playlist bank, you need to press SHIFT+F10 again to refresh the playlist information for this bank.

Use of Playlist Function in Dual LSM Mode

When the EVS server runs the Dual LSM Mode, both operators can use the playlist function at the same time on their Remote Panel.

They can edit and play the same playlist with the following restrictions for LSM Remote Panel #2:

- The **Replace** function is not available.
- The **Clear Unavailable** feature is not available.

5.2. Selecting Playlists or Timelines

Playlist or Timeline LSM ID

The playlist/timeline numbering system is as follows:

In the example, the digits have the following meaning in the numbering system:

- "5" refers to the clip page number (1 to 10).
- The bank page is not specified as the playlists are always stored on bank 10 of a page.
- "7" refers to the playlist or timeline position (1 to 10) inside bank 10.

The playlist bank of page 10 is not available from the EVS remote, since it is actually reserved for the EVS AVSP protocol (for Air Box and Air Edit).
To identify remote playlists when using the XNet SDTI network, the number of the playlist is followed by the number of the machine on the network, i.e. Playlist 51/04.

How to Recall a Playlist or Timeline

To recall a playlist or timeline, proceed as follows:

1. Select the page where the playlist is stored by pressing the **SHIFT+Page** key and the function key corresponding to the given page.
2. Select the bank where the playlist is stored by pressing the **SHIFT+F10** key corresponding to the playlist bank.
3. Select the position where the playlist is stored in the bank by pressing the **F1 to F9** key corresponding to the playlist position.

5.3. Playlist Functions on the Remote Panel

5.3.1. Edit and Playout Modes

Introduction

Two modes are available on the Remote Panel to access and manipulate the playlists: The Playlist Edit mode and the Playlist Playout mode:

- The Playlist Edit mode is used to modify the playlist.

  It is also named **PLST EDIT** mode.

- The Playlist Playout mode is used to roll the playlist on air.

  It is also named **PLST DIFF** mode.

Editing the playlist in Playlist Playout mode is not possible.

The OSD on with the MV4 board and the internal LAN are slightly different and provide more information compared to the OSD through the discrete monitoring outputs (J3 &J4).

Accessing the Playlist Edit Mode

When you load a playlist selected by pressing the **PLST** key on the Remote Panel, you directly enter the Playlist Edit mode. The first frame of the element highlighted in the playlist appears on the PGM. At the start, full control will be on the PGM side; scrolling through the playlist can be done here.

From the Playlist Playout mode, you need to press the **EDIT** function (**D** button) or move the jog dial to return to the Playlist Edit mode from where you can edit the playlist.

The main menu in the Playlist Edit mode available is the following:

		Effect	Edit All
Insert	Speed	FX Dur	Delete

A secondary menu is also available when you select **MENU** from the main menu in the Playlist Edit mode. All commands are not always available in the secondary menu:

Clr Unav		OtherAng	Add cut
Replace	MakeLoc	Redo	Undo

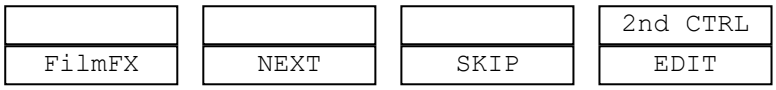
In Playlist Edit mode, the duration displayed in the top right corner of the LCD screen is the playlist total duration, from the beginning to the end.

Accessing the Playlist Playout Mode

To load a selected playlist is Playlist Playout mode, you need to press the **PLST** key on the Remote Panel a second time when the playlist is open in Playlist Edit mode.

The first frame of the playlist element following the one on the PGM will be displayed on the PRV side. This allows the operator to play only parts of the playlist, starting from the current position.

The menu available from the Playlist Playout mode on the Remote Panel display is the following:



A third selection of the **PLST** button cues the playlist to the beginning, displaying the first playlist element on the PGM side and the following clip on the PRV.

5.3.2. Functions in Playlist Edit Mode

Main Menu Functions

Edit All

If you want to edit all clips of the playlist at the same time, select Edit All (**SHIFT+D**) before you perform the requested editing action with one of the following playlist commands: Speed, Effect, FX Dur.

Insert

The Insert function (**A** key) allows the operator to insert a clip into the playlist. The same operation can be achieved using the **TAKE** key.

Speed

The Speed function (**B** key) allows defining the speed at which one or all clips of a playlist will be played. Select the playback speed of the clip with the lever, then press **ENTER** to validate. Values are 'Unknown' and from 0 to 100%.

Operators have access to the secondary lever control like when clips are replayed. While editing the speed of a clip, pressing **SHIFT+Lever** on the Remote allows to access the secondary lever speed defined in the menu.

FX Dur

The FX Dur function (**C** key) sets the duration of the transition effect. The default value that initially appears is determined by the **Video effect duration** setting in the Operational Setup menu, Playlist section. The effect duration will affect the transition at the beginning of the selected clip. Use the lever to adjust the value, then press **ENTER** to confirm.

Effect

The Effect function (SHIFT+C key) is used to select the type of transition effect (Mix/Wipe/Cut/Fade). Move the lever to set the type of effect, when Effect is highlighted. Press ENTER to validate.

Delete

The Delete function allows the operator to quickly edit a playlist by removing the selected clip. The clip that has been «cut» can then be inserted into another location. This clip is displayed on the second PRV output. To insert it at another position in the playlist, simply go to that position using the jog dial and press the Insert key (or TAKE).

Secondary Menu Functions

Replace

The Replace function makes it possible to replace a portion of a playlist by the same A/V material to which effects have been added (externally or internally). This consolidates the effects within the playlist.

Clr Unav.

The Clr Unav. (Clear Unavailable) function (SHIFT+A key) allows the user to remove the clips that are not available on the network from all local playlists. This function is only visible when unavailable clips are present and when the Split Audio Editing is turned off.

MakeLoc

The MakeLoc (Make Local) function (B key) offers the possibility to copy locally remote clips in a playlist. In the playlist secondary menu, select on the B position MakeLoc.

When the function is called, the remote clips are replaced, as soon as they are available, by short copies of the clips created locally on the server. The local clips are created on the pages indicated as Playlist Receive Page in the Clip settings (Operation tab, in the Multicam Configuration module).

Undo/Redo

The last modifications of a playlist can be undone/redone for as long as the operator does not exit the Playlist mode (e.g.: returning to Live).

Pressing the Undo command (D key) will undo the last modification. Up to 9 modifications can be undone. Once a modification has been undone, it is possible to redo it by pressing the Redo key (C key).

OtherAng

The OtherAng (Other Angle) function (**SHIFT+C** key) allows the operator to replace the current playlist element by another playlist element showing a different angle of the recorded material.

When the OtherAng option is selected, Multicam loads the local and network trains that include the TC IN of the playlist element to replace. The trains are loaded on the PRV channel, at the current TC of the loaded element. The jog is used to shift from one record train to the other.

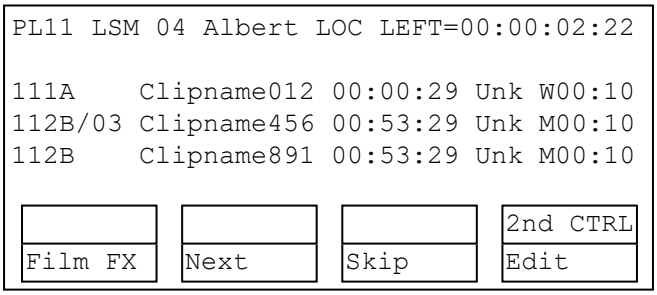
Once the requested record train is displayed on the PRV channel, pressing **ENTER** replaces the current playlist element by the one created from the selected angle.

Add Cut

The Add cut function (**SHIFT+D** key) allows the operator to split an existing clip into two independent clips at a selected point. Both resulting clips are duplicates of the original one with additional short-in and short-out points added at the split point.

5.3.3. Functions in Playlist Playout Mode

Once the playlist is cued and ready to roll, the menu below is displayed on the Remote LCD. This menu gives the operator the ability to manipulate the playlist while it is playing. The duration displayed in the top right corner of the LCD screen in Playlist Playout mode is the remaining duration until the end of the playlist.



Film FX

Selecting this function (**A** key) will create a film style effect during the playout of the playlist by repeating one field every two fields. The audio is also affected by this effect, making it unusable and therefore, muted. This mode is deactivated when exiting a playlist.

Next

While the playlist is rolling on air, selecting the Next function will start the transition of the next clip with the transition effect listed on the playlist. This can be used if a clip is running too long and it is necessary to shorten up the playing time.

Skip

While the playlist is rolling, the next clip in the sequence is always displayed on the PRV screen. The Skip function allows the operator to discard clips before they go on-air. The clip that will be «skipped» is the one displayed on the PRV screen. This function does not remove the clip from the playlist, but it simply allows it to be skipped during playback.

Edit

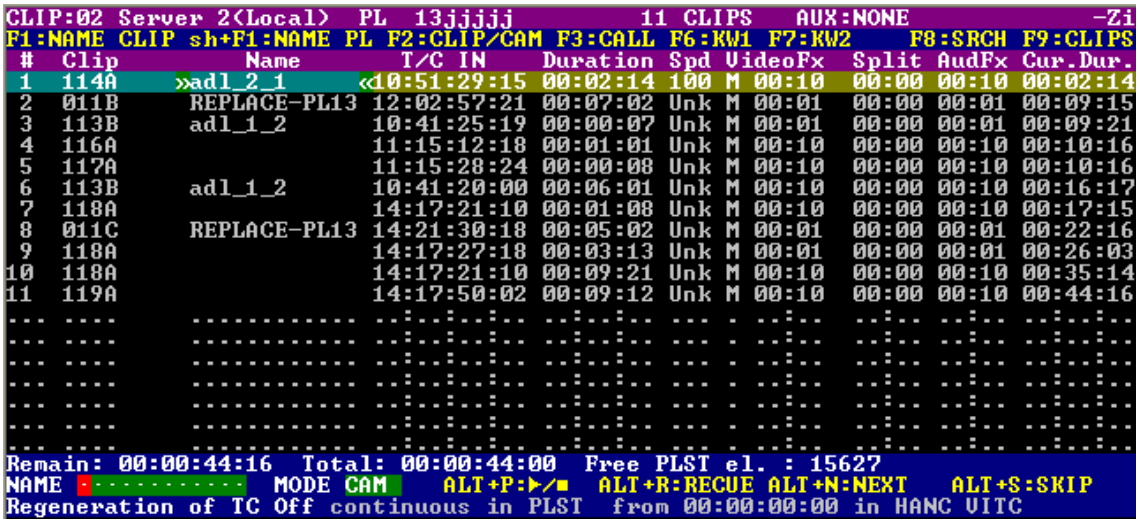
Selecting the Edit function gets the user back to the Playlist Edit mode.

5.4. Playlist Functions on the VGA

5.4.1. VGA Playlist Screen

Introduction

Pressing F10 on the keyboard calls the VGA Playlist screen. The Playlist screen displays information on the clips included in the current or loaded playlist. Several transport functions are available from this screen. "Clip Functions on the VGA" on page 50 for more information.



Display Depending on the Load Playlist Setting

When the **Load playlist** parameter is set to **Conditional** in the Operational Setup menu, Playlist section, on the Remote Panel, the information displayed on the VGA Playlist Screen will differ depending on whether a playlist is loaded on the PGM1 or not:

If a playlist is loaded on the PGM1:

- All the information displayed on the Playlist Screen refers to the loaded playlist.
- The PLAY, SKIP, NEXT and RECUE commands are displayed on the blue-highlighted section at the bottom of the page.

If no playlist is loaded on the PGM1:

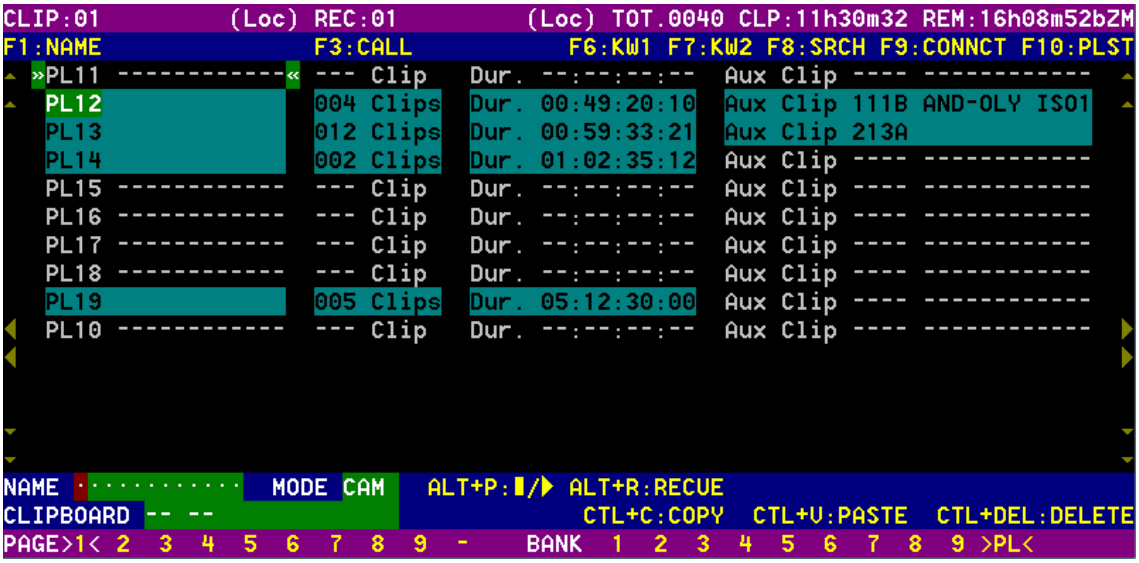
- The information displayed on the Playlist screen refers to the current playlist, except the remaining time, which is not displayed.
- The PLAY, SKIP, NEXT and RECUE commands are NOT displayed on the blue-highlighted section at the bottom of the page.

5.4.2. VGA Playlist Bank Screen

Accessing the Playlist Bank from the Clip Bank

When the Clip screen is displayed, press **END** on the keyboard to access the VGA Playlist Bank screen on the same page.

This gives an overview on the playlists and timelines stored on the bank:



Displayed Information

For each playlist or timeline, the following information is displayed:

Field	Description
Playlist ID Timeline ID	Unique identifier of the playlist or timeline on the server. Ex: PL16, TL 18
Playlist Name Timeline Name	Name of the playlist. It cannot exceed 12 characters. Ex: ”game edit
X clips	Number of available clips in the playlist (unavailable network clips are not taken into account). Ex: 98 clips
Dur: --:--:--:--	Total playback duration with available clips. Ex: 00:04:34:12
Aux Clip	Aux Clip ID and name of the audio auxiliary clip.

Color Codes

Different highlighting colors are used on playlist and timelines to provide the following information:

Colour	Highlighed Elements	Meaning
Cyan Blue	Playlist ID	Position on which a playlist is stored. The information related to the playlist is highlighted in cyan blue.
Dark Blue	Timeline ID	Position on which a timeline is stored. The information related to the timeline is highlighted in cyan blue.
Blinking Green/Cyan Blue	Playlist ID	Playlist flagged to be archived or being archived. Only the playlist ID is blinking.
Blinking Green/Dark Blue	Timeline ID	Timeline flagged to be archived or being archived. Only the timeline ID is blinking.
Green	Playlist ID Timeline ID	Playlist or timeline archived.

5.4.3. Editing Functions in VGA Playlist Screen

To use the following commands, you must be in Playlist Edit or Playlist Playout mode:

- To enter the Playlist Edit mode, press the **PLST** key on the EVS Remote. The screen of the Remote Panel displays the information about the previous, current and next three clips of the playlist.
- To enter the Playlist Playout mode, press the **PLST** key again.

The following operations can be performed from the VGA playlist screen:

Criteria	Description
Naming a playlist or the current clip	For more information, see section "Naming a Playlist or Playlist Element" on page 116.
PLAY/pause	Press **ALT+P** to start the playback / pause of the playlist from the current position.
RECUE	Press **ALT+R** to recue to the beginning of the playlist and pause.
NEXT	Press **ALT+N** while the playlist is playing to force immediately the transition to the next clip in the playlist.
SKIP	Press **ALT+S** while the playlist is playing to skip the next clip. The current clip will play until the defined OUT point, than the playlist will skip the next one and play the one after instead.

5.5. Managing Playlists

5.5.1. Setting and Loading Playlists

Introduction

A distinction is made between setting and loading a playlist:

- When you load a playlist, you actually load it on a given player channel either to edit it or to play it out.
- When you set the current playlist, you access the playlist location on the server but you do not load it on a player channel. Thus you can insert clips directly in the current playlist without having to load it onto a channel.

At Multicam startup, the current playlist is automatically playlist 11,that is the playlist 1 on bank 10 of page 1.

How to Set the Current Playlist

In the Remote Panel Interface

To set the current playlist, proceed as follows:

1. Only if you want to select a distant playlist, first press **SHIFT+Network** then press the **F_ key** corresponding to the server on which the playlist is located.
2. Press **SHIFT+Page+F_ key** to select the page in which the desired playlist is located.
3. Press **SHIFT+F10** to select the playlist bank.
4. Press **F_ key** to select the desired playlist:
    - If the new playlist is not empty, it is automatically loaded on the selected player channel (in 3 PGM mode) or on the PGM (in PGM/PRV mode) and it becomes the current playlist.
    - If the new playlist is empty, the system will ask you whether you want to copy the current playlist at this new location. Press **ENTER** to confirm.

To load the current playlist, continue as follows:

5. Press **PLST** to load the current playlist on a player channel (it cannot be empty).

To exit the playlist mode:

6. Press the **RECORD** key to return to E2E mode.

Page 1 contains playlists 10 to 19, Page 2 contains playlists 20 to 29, and so on.

In the VGA Interface

To set the current playlist, proceed as follows:

1. From the clip screen, press **END** to access the playlist bank.
2. Press **DOWN ARROW** to select the playlist that you want to define as the current playlist.
3. Press **ENTER** on the selected playlist to set it as the current playlist.

How to Recall and Load a Playlist

You can only recall and load a playlist if this is not empty.

To load a playlist on a player channel, proceed as follows:

1. Access the desired playlist bank by pressing **F10** from the requested page.
2. Select the playlist to load with the **F1-F10** keys.

   The selected playlist becomes current and is displayed on the LCD display.
3. Press **PLST** key on the Remote Panel to load the current playlist.
   - If the new playlist is not empty, it is automatically loaded on the selected player channel (in 3 PGM mode) or on the PGM (in PGM/PRV mode) and it becomes the current playlist.
   - If the new playlist is empty, the system will ask you whether you want to copy the current playlist at this new location.

5.5.2. Rolling a Playlist

How to Roll a Playlist

After recalling a playlist, you will roll the playlist using the pre-defined speed of each clip.

Use the **PLAY** key to start rolling the playlist.

Playlist Speed

- As soon as the lever is used to start the playback or during playback, the pre-set speed for the current clip is canceled and set by the lever position only.
- The playlist will return to pre-set speed mode as soon as another clip with a pre-set speed is found.
- If the speed for a supermotion clip is set to “UNK”, pressing the PLAY key on that clip will start the playback of the playlist at the speed specific to the SLSM camera (for example 33% with SLSM 3x cameras).

When using the PLAY key to start the playlist, it is recommended to set the lever at the top position (100%). If the lever is in low position and the operator touches it by mistake while the playlist is rolling, the playlist could freeze on-air.

Playlist Effects

You need to roll a playlist with effects in PGM/PRV mode or with the Mix on one channel feature activated on the PGM for the effects to be applied during playout.

5.5.3. Deleting Playlists

Deleting a playlist deletes all the playlist elements from the playlist as well as the playlist definition in the database.

In the Remote Panel Interface

Deleting a Single Playlist

To delete a playlist, proceed as follows:

1. Press **SHIFT+Page+F_ key** to select the page in which the playlist to delete is located.
2. Press **SHIFT+F10** to select the playlist bank.
3. Press **CLEAR+F_ key** to delete the corresponding playlist.
4. According to the value of the **Confirm del clp/plst** parameter in the Operational Setup menu, Protection section, you will be asked or not to confirm the deletion action.
5. The empty playlist location remains available.

Deleting all Unprotected Playlists in a Bank

To delete all playlists stored on a same bank, proceed as follows:

1. Press **SHIFT+Page+F_ key** to select the page in which the playlists to delete are located.

2. Press **CLEAR+SHIFT+F10** to delete all playlists stored in the corresponding bank. The following confirmation message is displayed:

```
                Caution:

     This will delete all playlists/
       timelines stored on bank X

[Menu] : Cancel        [Enter] : Confirm
```

3. Press **ENTER** to confirm the deletion. All playlists and timelineson the selected bank will be deleted.

Deleting all Unprotected Playlists

Using the Delete Clips & PL command from the main menu, and selecting All will delete all clips, as well as playlists.

See section "Deleting Clips" on page 68 for more information on this delete action.

In the VGA Interface

Deleting a Playlist

To delete a playlist, proceed as follows:

1. In the Clip window, go to the requested playlist bank by pressing ALT+Down Arrow in the requested page.
2. Highlight the requested playlist and press CTRL+DEL to delete the playlist entry.

5.5.4. Copying Playlists

Introduction

From the VGA Clip screen and the Remote Panel, you can copy playlists.

The copy process is seamless to the user as long or short copies of a playlist are performed as a background process. If the destination playlist is recalled and the on-air playlist element has not yet been transferred to the local machine, the on-air element played out is the original one. The on-air element will be automatically copied locally when the playlist will be removed from the playout channel.

Copy Options

When you copy a distant playlist from the VGA, or a local/distant playlist from the Remote Panel to the local EVS server, you have different options:

- The **EDL copy** copies only the playlist definition while the playlist elements remain at their original location.
- The **EDL+Clips copy** copies the playlist definition and the playlist elements to the destination. In this case, you must also choose one of the following:
  - The **short copy** that copies only the material included between the IN and OUT points of the playlist elements with the clip guardbands as defined on the destination system.
  - The **long copy** that copies the complete original clips. This makes a difference when the playlist elements have been trimmed compared to the original clip.

EDL+Clips copy processes cannot be queued. If the operator tries starting a new copy process while the previous one is still running, a message will ask him whether he wants to stop the previous process to start the new one, or cancel his new request.

Available Copy Actions

The basic principle is that only copies to the local EVS server are possible, whereas copies to a distant EVS server are not supported.

The following table provides an overview on the copy actions available from the Remote Panel and from the VGA interface. The playlists are copied to an empty playlist position:

<table>
<tr><th rowspan="2">L = local playlist/position
D = distant playlist</th><th colspan="2">Remote Panel</th><th colspan="2">VGA Interface</th></tr>
<tr><th>L to L</th><th>D to L</th><th>L to L</th><th>D to L</th></tr>
<tr><td>EDL Copy</td><td rowspan="2">Yes</td><td rowspan="2">Yes</td><td>Yes</td><td rowspan="2">Yes</td></tr>
<tr><td>EDL+Clips Copy (short or long)</td><td>No</td></tr>
</table>

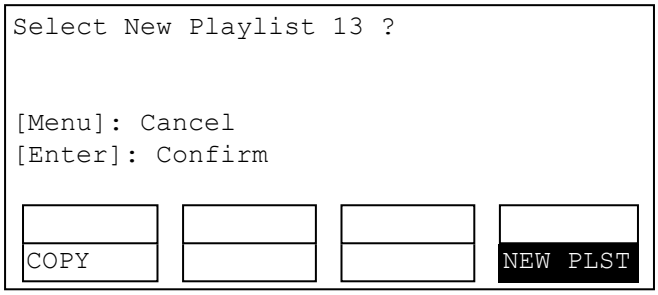
In the Remote Panel Interface

To copy a playlist, proceed as follows:

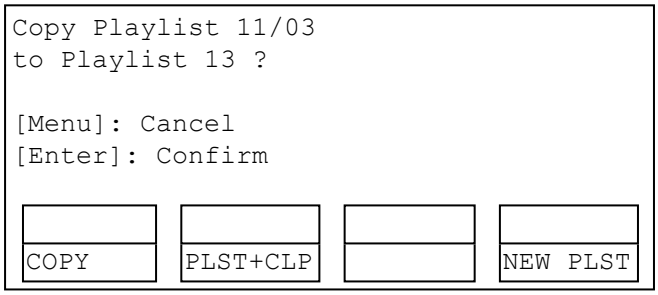
1. Go to the source playlist bank (local or from another machine on the network).
2. Select the original playlist to copy by pressing the corresponding **F_ key**.
3. Go to the destination playlist bank.

4. Select an empty playlist location.

   A new menu appears on the LCD display of the Remote Panel, with the corresponding message on the OSD of the monitoring outputs, asking whether you want to copy the original playlist to the new location or whether you simply want to select a new, empty playlist (default choice):



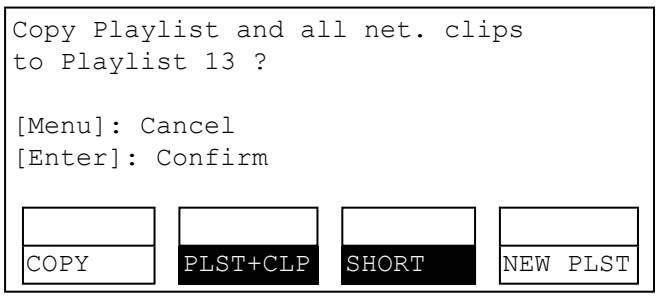
5. Press **COPY** (**A** key) to select the copy option. The menu becomes:



6. Specify whether to copy the EDL with or without the clips:

   - Press **ENTER** to copy only the EDL without copying the elements contained in the original playlist. The copy is done instantly since there is no material to transfer.
   - Press **PLST+CLP** (**B** key) to copy the EDL together with the playlist elements.

     The display becomes:



7. Press the **C** key to specify whether to perform a **SHORT** or a **LONG** copy.
    - **SHORT** mode (default): only the section of the elements between the Short IN and Short OUT as defined in the playlist will be copied, increased by the duration of the guardbands, as defined on the destination system.
    - **LONG** mode: the entire original clips, including their guardbands, will be copied on the destination system.
8. Press **ENTER** to confirm the copy or **MENU** to cancel.

The **F_ key** of the destination playlist will flash until all clips have been copied. This playlist can be recalled during that process for browsing, editing, or playback. If some clips have not yet been copied, the original network clip is used instead.

In the VGA Interface

How to Copy a Local Playlist

To copy a local playlist, proceed as follows:

1. Press the **END** key to open the playlist bank.
2. Select the playlist to copy.
3. Press **CTRL+C** to copy the playlist.
4. Go to the empty playlist location on the same server where you want to copy the playlist.
5. Press **CTRL+V** to paste the playlist. The EDL of the playlist is copied to the requested location.

How to Copy a Distant Playlist

To copy a distant playlist, proceed as follows:

1. Press **F9** to open the Connect window.
2. With the **DOWN ARROW** and **UP ARROW** keys, select the distant server from which you want to copy a playlist.
3. Press **ENTER**.
4. Press **END** to go to the playlist bank on the requested page.
5. Select the original playlist to copy with the **DOWN ARROW** and **UP ARROW** keys.
6. Press **CTRL+C** to copy the playlist.
7. Press **F9** to open the Connect window.
8. Select the local server and press **ENTER**.
9. On the requested playlist bank, select an empty playlist location on your local machine.

10. Press **CTRL+V** to paste the playlist.

    The following dialog box pops up:

    ```
    Copy Playlist xx/xx to yy.
    Select Copy Playlist Mode (Space Bar)

    Playlist Only
    Playlist with Clips: Short Mode
    Playlist with Clips: Long Mode

    Esc: Cancel - Enter: Confirm
    ```

11. Press the **SPACEBAR** to select the requested copy option.
12. Press **ENTER** to confirm. The playlist is copied to the requested location.

Merging Playlists

From the VGA Interface, it is possible to merge two playlists by copying a playlist and pasting it to an existing playlist. The copied playlist will be added at the end of the destination playlist.

5.5.5. Naming a Playlist or Playlist Element

Introduction

You can name or rename a playlist or one of its elements only from the VGA interface.

When entering a name, use **BACKSPACE** to delete the last character or **ESC** to clear the entire field.

How to Name a Playlist

From the Playlist Bank Window

To name a playlist from the VGA Playlist Bank window, proceed as follows:

1. From the Clip screen, press **END** to go to the Playlist Bank screen of the requested page.
2. Use the **DOWN ARROW** to select the playlist to name.
3. Enter the desired name on the keyboard. It appears in the **Name** field at the bottom of the screen.
4. Press **F1** to assign the new name to the selected playlist. The playlist name appears in the title bar next to the playlist number.

From the Playlist Window

To name the current playlist from the VGA Playlist window, proceed as follows:

1. On the Remote Panel, select the playlist you want to name and load it pressing PLST.
2. On the VGA, press **F10** to open the VGA Playlist screen. The loaded playlist is displayed.
3. Enter the desired name on the keyboard. It appears in the **Name** field at the bottom of the screen.
4. Press **SHIFT+F1** to assign the new name to the current playlist. The playlist name appears in the title bar next to the playlist number.

How to Name a Playlist Element

To name the current element in the loaded playlist from the VGA Playlist window, proceed as follows:

This function is only available when the playlist is the current one in Playlist Edit mode (**PLST EDIT**) or Playlist Playout mode (**PLST DIFF**) on the Remote Panel.

1. Press **F10** to open the VGA Playlist screen. The loaded playlist is displayed and the current playlist element on the Remote Panel is selected.
2. Enter the desired name for the element on the keyboard. It appears in the **Name** field at the bottom of the screen.
3. Press **F1** to assign the new name to the current element. The name for the current element appears in the **Name** column of the selected element.

Naming the current element of the loaded playlist will affect the original clips.

5.6. Editing Playlists

5.6.1. Adding Clips in a Playlist

Introduction

You can add clips to a playlist in different ways, but always from the Remote Panel:

- Adding clips at the end of the current playlist without entering the Playlist Edit mode.
- Inserting clips before or after the clip selected in the loaded playlist.
- Adding one or more clips returned by a search at the end of the current playlist.

How to Add Clips at the End of the Current Playlist

You can create a playlist very quickly. The experienced operator can include a clip at the end of the playlist containing an action that happened seconds before the playlist is played on air. To add clips quickly at the end of the current playlist, you do not have to enter the Edit mode.

To add clips to the current playlist, proceed as follows:

1. Activate a playlist as the current playlist.
2. Recall the first clip for your playlist.
3. Press **ENTER** on the Remote Panel.

The clip is added at the end of the current playlist.

4. Repeat as many times as necessary until the last clip is entered.

How to Insert Clips into a Playlist

The following rules apply to the procedure below:

- You need to be in PGM/PRV mode to be able to use the **TAKE** key on the Remote Panel to insert a clip.
- Depending on what is selected for the **Insert in playlist** parameter in the Operational Setup menu, Playlist section, the clip will be inserted before or after this selected position.

To insert a clip into a playlist, proceed as follows:

1. Using the Playlist Edit mode or the Browse mode, scroll to the location where the clip must be inserted.
2. Call the selected clip. It appears on the PRV output.
3. Do one of the following to insert the selected clip in the playlist, at the position shown on the PGM output:
    - Press the **A** key (**Insert** function) on the Remote Panel
    - Press the **TAKE** key on the Remote Panel
    - Press the **SHIFT+INSERT** keys on the Remote Panel

A confirmation message will appear if the option **Confirm Ins/Del clips** has been enabled in the Operational Setup menu, Playlist section.

After the clip has been inserted, you can press **PLST** to return to the playlist at the current position.

How to Insert the Result of a Clip Search into a Playlist

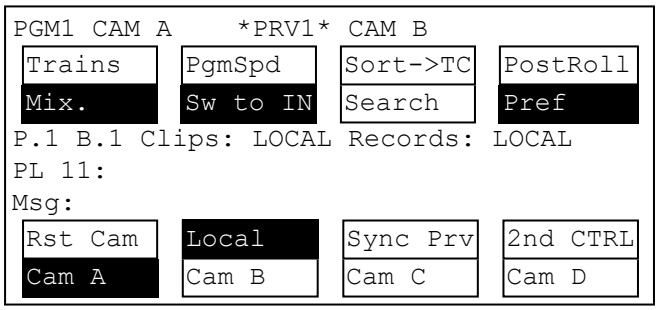
Working Principles

- In Playlist Edit mode with a PRV channel, when PRV CTL is enabled, the operator has full control of the PRV channel while the playlist remains loaded on the PGM channel.
- On the PRV channel, you can perform all clip-related functions, including database search using timecode, keywords and ranking, from the VGA Search Screen as well as from the secondary clip menu of the Remote Panel.
- Once the desired clips are found, they can easily be inserted in the playlist that is still loaded on the PGM output. By switching PRV CTRL ON or OFF, you can very easily combine playlist editing and database search functions.

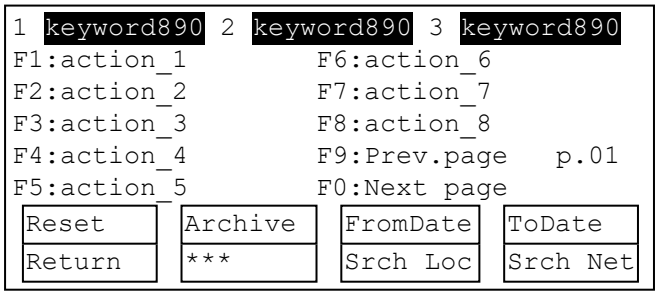
Procedure

To insert one or more clips from a search result at the end of the current playlist, proceed as follows:

1. From the main menu, activate the current playlist.



2. Press **MENU+C** to enter the Search mode:



3. Enter the search criteria.
4. Launch the search on the local server or on the whole network by pressing respectively the **C** (**Srch Loc**) or **D** (**Srch Net**) keys on the Remote Panel.

5. Do one of the following:
    - To insert only one clip at the end of the playlist, browse to the clip and press **ENTER**on the Remote Panel.
    - To insert only one clip into the playlist at the last browsing position, browse to the clip and press **SHIFT + INSERT**on the Remote Panel.
    - To insert all clips returned in the search result, press the **SHIFT+ENTER** keys on the Remote Panel.

The clips are inserted at the end of the current playlist.

Modifying Distant Playlists

Remote playlists are available as 'Read Only', and cannot be edited. If you want to modify a network playlist, you have to create a local copy on your machine first. This operation is done instantly if the clips remain in their original location.

Inserting Growing Clips into Playlists

Growing clips can be inserted in playlists in the same way as other clips. However, their display has the following characteristics:

Display:

- They will be displayed with the 'Creating' message in the playlist on the VGA.
- The growing clips ID will be blinking on the mini playlist display and on the playlist screen on the Remote Panel, as well as on the OSD.

Remaining time:

- The remaining time in playlists containing growing clips with only an IN point is displayed as --:--:-- on the screens (OSD, VGA, Remote Panel screen) where this information is shown.

5.6.2. Deleting and Moving Playlist Elements

Introduction

Just as you can add clips into a playlist only with the Remote Panel, deleting clips from a playlist or moving clips within a playlist are also performed via the Remote Panel.

How to Delete an Element from a Playlist

To delete a playlist element in a playlist, proceed as follows:

1. While you are in Playlist Edit mode, scroll within the playlist to the element that needs to be deleted.

   If the Browse mode is active, the first frame will appear on the display as each clip is scrolled through.

2. Select Delete from the Playlist Edit menu.

The selected element will be removed from the playlist. A confirmation message will appear if the **Confirm Ins/Del clips** parameter has been enabled in the Operational Setup menu, Playlist section.

How to Move an Element within a Playlist

You can only move elements within a playlist if you are in PGM/PRV mode.

To move a playlist element within a playlist using the Remote Panel, proceed as follows:

1. While you are in Playlist Edit mode, scroll within the playlist to the clip that needs to be moved.
2. Select Delete from the Playlist Edit menu. The clip is sent to the clipboard and loaded on the PRV channel.
3. Scroll to the location in the playlist where you want to insert the clip.

Remember that the position where the clip is inserted will depend on the value of the **Insert in playlist** parameter in the Operational Setup menu, Playlist section, that is to say before or after the selected playlist element.

4. Press **TAKE** or **Insert** on the Remote Panel to insert the clip from the clipboard at the requested location.

The playlist element is inserted at the requested location.

If the playlist element has been trimmed before being moved, the element will be reinserted in the new position with the new guardbands.

5.6.3. Browsing Within a Playlist

Introduction

You can browse within a playlist in different ways in the Remote Panel:

- Browse through the content of each clip in the playlist.
- Browse quickly by jumping to the first field of each clip in the playlist.

Browsing Through a Playlist

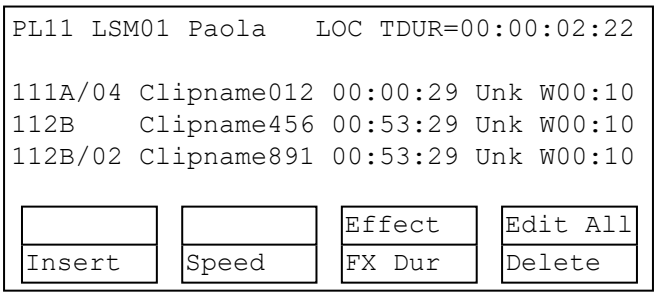
When you load a playlist, the default playlist mode allows you to scroll up and down through all the playlist elements.

Browsing Quickly Through a Playlist

When you are neither in Playlist nor in Clip mode, press the **Browse** key on the Remote Panel to enter the current playlist in Browse mode.

In this mode, you can quickly jump to the first field of each clip inside the playlist by moving the jog dial. To return to the normal Playlist Edit mode, press the **Browse** key again.

When you are in Playlist Edit mode, you can of course also activate the Browse mode by pressing the **Browse** key.

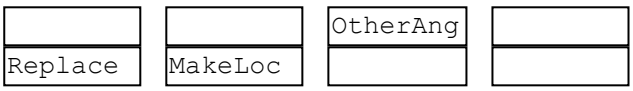


5.6.4. Changing the Camera Angle of a Playlist Element

From the Remote Panel, you can change the camera angle of a playlist element if the material is still available in a local or distant record train.

To change the camera angle of a playlist element, proceed as follows:

1. When you are in Playlist Edit mode, scroll within the playlist to the playlist element.
2. Press **MENU** to access the secondary menu:



3. Press **SHIFT+C** to search and load the local and distant record trains that include the same TC IN as the playlist element.

The first record train is loaded on the PRV channel, at the current TC of the loaded element.

4. Press **Browse** and use the jog to move within one record train to browse its content.
5. Once you have loaded the requested camera angle on the PRV channel, press **ENTER**.

This will replace the current playlist element by a new clip having the same TC IN and TC OUT. The new clip is stored on the playlist receive page.

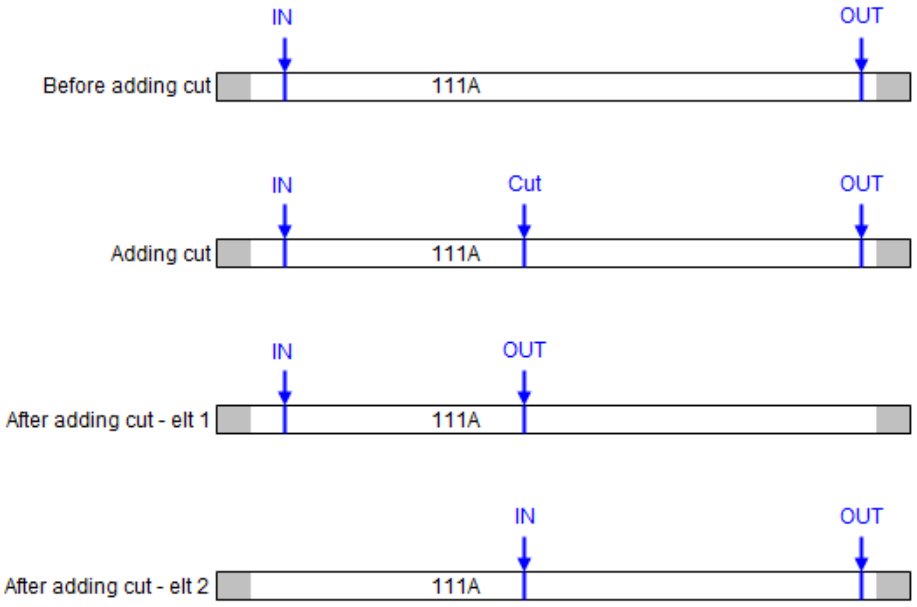
The effects, the split audio and the swap points defined on the initial playlist element are preserved.

5.6.5. Adding Cuts in Playlist Elements

Description

The **Add Cut** command is only available from the Remote Panel. This command duplicates a playlist or timeline element (clip, record train...) and adjusts the SHORT IN and SHORT OUT points of these new duplicated elements:

- On both these elements, the guardbands and other effects are kept unchanged as in the original one.
- In the first duplicated element, the SHORT IN point is left unchanged while the SHORT OUT point is adjusted to the cut point.
- In the second duplicated element, the SHORT OUT point is left unchanged while the SHORT IN point is adjusted to the cut point as illustrated hereunder.



Multicam Behavior

When adding a cut to a clip, Multicam will behave as follows:

- The transition applied at the cut point is a cut (for both audio and video).
- The speed of the cut elements is the same as the original element, even if it is “Unknown”.
- The stop and start modes of the cut elements are auto.
- Any loop defined on the playlist that includes the original element conserves and includes the cut elements.
- Any tag defined and active on the original element at the cut point is recreated at the short-in of the second cut element.

The adding cut is not possible in the following cases:

- Within a video effect.
- Within an audio effect beginning or finishing the original element.

5.6.6. Trimming Clips into a Playlist

Introduction

Every playlist element can be trimmed independently of all other instances of the same clip number. Trim actions are only available in the Remote Panel.

How to Trim Clips in a Playlist

To trim clips in a playlist, proceed as follows:

1. Browse to the desired element in the playlist.
2. Re-mark a new Short IN or Short OUT.

   If the clip duration is too short, clear the IN or OUT point by selecting **CLEAR** and then set the new IN or OUT point at the desired position.

Clearing restores the existing IN or OUT point to the end of the guardbands of the clip.

5.6.7. Sorting the Playlist Elements by TC IN

Introduction

From the VGA Interface, it is possible to sort (reorder) the playlist elements by TC IN. The sort is done on the TC displayed in the TC IN column, whatever the type of TC displayed (User TC or LTC).

This operation will change the order of the playlist elements, and reset the transitions to the default transitions defined on the Remote Panel.

How to Sort Playlist Elements by TC IN

To reorder the playlists elements by TC IN in a playlist, proceed as follows:

1. Open the playlist in the VGA Playlist screen.
2. Press the **TAB** key until you highlight the **Sort by TC IN** field in the Playlist management area at the bottom of the screen.
3. Press **ENTER** to validate.
4. Press **ENTER** again to confirm the operation.

The playlist elements are reordered by TC IN.

You can undo the operation using the **Undo** command available in Playlist Edit mode on the Remote Panel.

5.7. Transition and Audio Operations

5.7.1. Overview on Transition Effects

Introduction

You can apply effects on the audio and video transitions of a clip in a playlist. For each transition, you define the effect type and duration. You can only apply transition effects using the Remote Panel.

By default, a mix transition effect (audio and video) is applied to each new clip inserted into the playlist. However, you can change the type of transition effect in the main menu of the Playlist Edit mode.

With the license code 111, the duration and type of the audio transitions are tied to the duration and type of the video transitions.

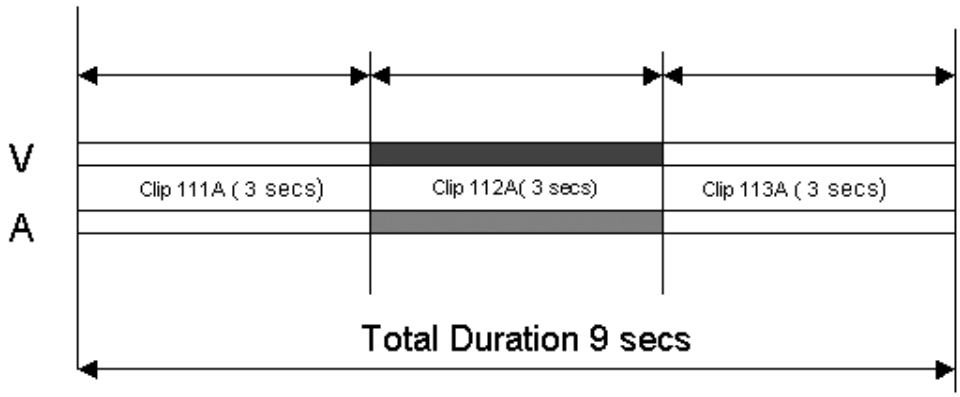
With the license code 112, only available with the XT-VIA chassis, you can unlock the audio from the video, and define different transition durations for audio and video. This is explained in dedicated sections in this chapter.

In UHD-4K, the transition effects are only supported with a 1REC+1PLAY configuration on which Mix on one channel is enabled.

Illustrations

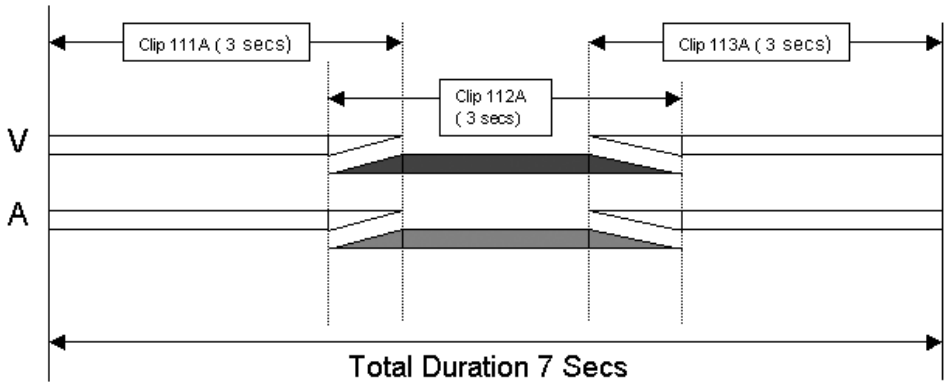
The following drawings show that the transition effects are applied on the material included in the playlist element, not on the guardbands:

Normal Playlist with Cuts



Playlist with 1:00 sec Effect Duration

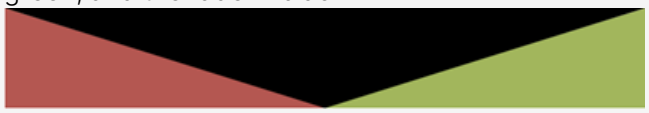
In an LSM playlist, the video and audio effects end at the OUT point of a clip, so the duration of clips is shortened by the length of the effect.



Available Video Transition Effects

The following video transition effects can be defined:

Effect Type	Description
Cut	No transition effect is applied between both elements.
Mix	Dissolve effect between both elements.
Wipe	The last frame of the previous element is gradually replaced by the first frames of the next element. The wipe effect is shown as a vertical line moving across the video. The direction of the wipe effect (left to right, right to left) is defined in the **Wipe type** parameter in the Operational Setup menu, Playlist section. The line color in the wipe effect is defined in the **Set color for** and **Colour** parameters in the Operational Setup menu, Special Effects section.
Fade from color (<)	A fade out effect from a defined color is applied on the first frame of the clip (on which the effect is defined). The previous clip ends in cut mode. In the drawing below, the previous clip is displayed in red, the next clip is green, and the fade in black: 

Effect Type	Description
Fade to color (>)	A fade in effect to a defined color is applied on the previous clip up to the transition in cut mode to the next clip (on which the effect is defined). In the drawing below, the previous clip is displayed in red, the next clip is green, and the fade in black: 
Fade to/from color (V fade)	A fade in effect to a defined color is applied on the previous clip up to its OUT point and a fade out effect from the same color is applied on the next clip (on which the effect is defined) from its IN point. The effect duration must be a multiple of 2 frames. In the drawing below, the previous clip is displayed in red, the next clip is green, and the fade in black: 

The color of the fade effects is defined with the **Fade to/from color** parameter in the Playlist settings of the Operational Setup menu.

Available Audio Transition Effects

With license code 111, the audio transition is always a mix.

With license code 112 (only available on XT-VIA chassis), the audio transition is a mix by default as the audio is locked to the video (**Audio locked to video** parameter set to **Yes**) in the Operational Setup menu, Playlist section.

With license code 112 (only available on XT-VIA chassis), the audio effect is automatically adapted to the video effect when you set the **Audio locked to video** parameter to **No** in the Operational Setup menu, Playlist section.

The following table shows which audio transition effect is applied depending on the defined video transition effect.

Audio Effect	Cut	Mix	Fade from Mute	Fade to Mute	V Fade to/from Mute
Video Effect					
Cut	√	√			
Mix		√			
Wipe Left -> Right		√			
Wipe Right -> Left		√			
Fade from color			√		
Fade to color				√	
V Fade (to/from Black)					√

Default Values for Transition Durations

It is possible to set a default value for the duration of the video and audio transitions in the Operational Setup menu. Once this is defined, each time a clip is entered or inserted into a playlist, transitions are applied with the default values.

The **Video effect duration** parameter is available in the Operational Setup menu, Playlist section, and ranges up to 20:00 secs.

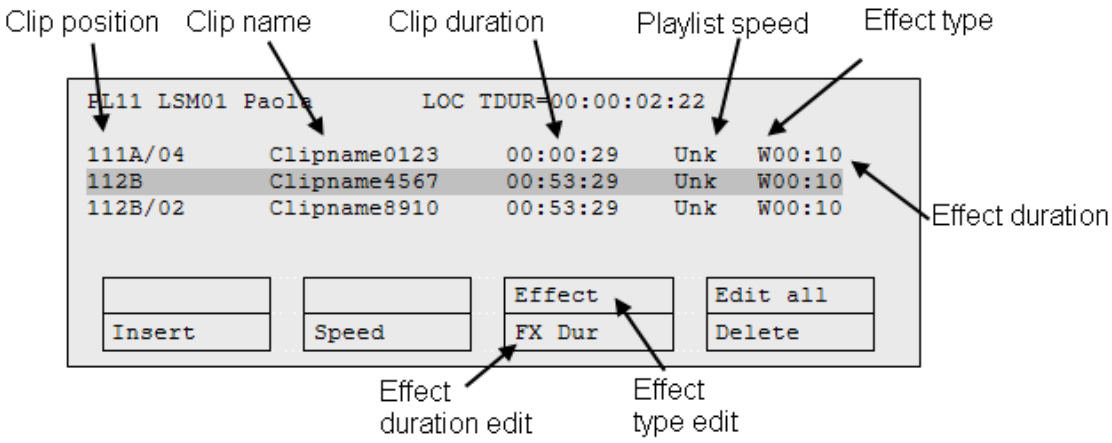
When the **Audio locked to video** parameter is set to **Yes** in the Operational Setup menu, Playlist section, in other words when the split audio is disabled, audio effect duration is the same as the video effect duration.

When the **Audio locked to video** parameter is set to **No** in the Operational Setup menu, Playlist section, the **Audio effect duration** parameter is available in the Operational Setup menu, Playlist section, and you can set a different duration for the default transition for the audio and the video.

5.7.2. Adding Transition Effects in a Playlist

Transition Effects Commands

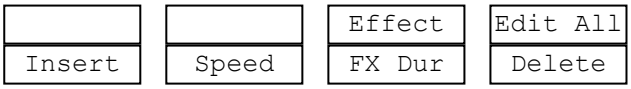
The functions related to transition effects are available from the main menu of the Playlist Edit mode, and the effects applied are also displayed on the Remote Panel display:



How to Add a Transition Effect

You can add transitions on one or all elements of a playlist as follows, or more precisely modify the default effect applied (mix):

1. Select the playlist location and press PLST to open it in Playlist Edit mode. The main menu appears:

2. Browse to the playlist element at the beginning of which you want to modify the effect or press **Edit All** (**SHIFT+D**) to modify the effect on all playlist elements.
3. To modify the effect, press **Effect** (**SHIFT+C**) and move the lever until the requested effect is displayed on the LCD display.

   The effect type is displayed as a letter/symbol in the information corresponding to the loaded element (see highlighted letter):

   ```
   111A/04 Clipname012 00:00:29 Unk W00:10
   ```

The following effect types are available:

Command	Description
C	Cut
M	Mix
W	Wipe
>	Fade to color
<	Fade from color
V	Fade to/from color

4. To modify the default duration for the transition effect, press **FX Dur** (**C**) and move the lever until the requested duration is displayed in the last field of the corresponding element:

```
111A/04 Clipname012 00:00:29 Unk W00:20
```

5. Press **ENTER** to validate the modifications in effect type and/or duration.

You need to roll a playlist with effects in PGM/PRV mode or with the Mix on one channel feature activated on the PGM for the effects to be applied during playout.

5.7.3. Swapping Audio Tracks

Introduction

The swap audio tracks mode allows swapping audio tracks between two points in a playlist. This function can only be executed on the Remote Panel.

- The **Auto** mode replaces:
  - audio tracks 1 & 2 by audio tracks 3 & 4 in four audio mode
  - audio track 1 by audio track 2 in stereo mode.
- The **Manual** mode lets you choose which tracks to replace.

In 8- and 16-track modes, you only have access to the manual mode.

With 24 and 32 mono audio, this feature is not supported.

You need to enable the **Advanced audio editing** parameter in the Operational Setup menu, Playlist section to be able to use the Swap audio tracks feature. The access to this parameter, and to the Swap audio tracks feature, requires the license code 112 being installed. The parameter is not available with 24 and 32 mono audio.

Enabling the Audio Swap Mode

To enable the Audio Swap mode, proceed as follows:

1. Enter the Operational Setup menu.
2. Select the Swap audio tracks parameter value in the Operational Setup menu, Playlist section.

   NEW ! The parameter is not available with 24 and 32 mono audio.
3. Choose the **Auto** or **Manual** value.

Swapping Audio Track in Auto Mode

To perform a swap audio track in Auto mode, proceed as follows:

1. In Playlist Edit mode, select the Video Base mode (V Base) by pressing **SHIFT+A**. The LCD screen will now display additional function:

```
PL11 LSM01 Paola   LOC TDUR=00:00:02:22

111A/04 Clipname012 00:00:29 Unk W00:10
112B    Clipname456 00:53:29 Unk W00:10
112B/02 Clipname891 00:53:29 Unk W00:10

 V Base    A Base              Swap
 A Advanc  A Delay   A FX DUR  A Split
```

2. Press the **Swap** function (**SHIFT+D**).
3. Jog your playlist until you reach the point where you want to change the audio tracks.
4. Mark an IN point.

   The OSD screen indicates the following information:

In dual stereo mode:

```
*PL11/03* LEFT 06:42:22
V Mix 02:25   Spd.Unk
A Mix 02:25 A.Del. 00:00
IN-00:00:00 OUT+00:00:27

       00:10
       1→3 3→3
       2→4 4→4
12:23:45:13 00:07:13 100
112B/04 ClipName 999/999
```

In stereo mode:

```
*PL11/03* LEFT 06:42:22
V Mix 02:25   Spd.Unk
A Mix 02:25 A.Del. 00:00
IN-00:00:00 OUT+00:00:27

       00:10
       1→2
       2→2
12:23:45:13 00:07:13 100
112B/04 ClipName 999/999
```

5. Press the **Swap** function again (**SHIFT+D**).
6. Jog your playlist until you reach the point where you want to reset the original audio tracks.
7. Mark an OUT point.

The OSD screen indicates the following information:

In eight tracks mode:

```
*PL11/03* LEFT 06:42:22
V Mix 02:25    Spd.Unk
A Mix 02:25 A.Del. 00:00
IN-00:00:00 OUT+00:00:27

        00:10
        1→3 3→3 5→5 7→7
        2→4 4→4 6→6 8→8
12:23:45:13 00:07:13 100
112B/04 ClipName 999/999
```

In dual stereo mode:

```
*PL11/03* LEFT 06:42:22
V Mix 02:25    Spd.Unk
A Mix 02:25 A.Del. 00:00
IN-00:00:00 OUT+00:00:27

        00:10
        3→1 3→3
        4→2 4→4
12:23:45:13 00:07:13 100
112B/04 ClipName 999/999
```

In stereo mode:

```
*PL11/03* LEFT 06:42:22
V Mix 02:25    Spd.Unk
A Mix 02:25 A.Del. 00:00
IN-00:00:00 OUT+00:00:27

        00:10
        2→1
        2→2
12:23:45:13 00:07:13 100
112B/04 ClipName 999/999
```

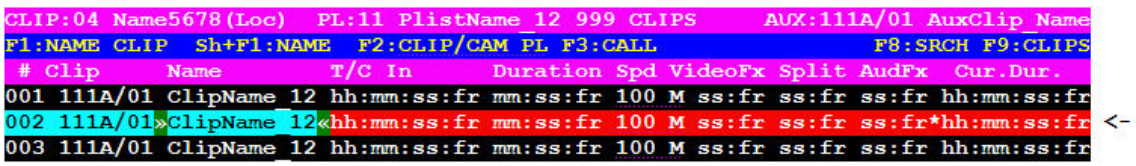
Specific Behavior

- One can set as many swap points as needed.
- If only an IN swap point is set for one clip, the audio tracks will be reset by default for the next clip in the playlist.
- When a swap point is set, a cross-fade is played between the original audio track and the new track. The duration of the cross-fade is the default audio transition.
- When a swap point is present in a playlist, the display on the VGA and on the OSD changes: a “*” is added next to the audio Fx information:

Display

Display on the VGA:

The swap function can only be used on the Remote Panel. The playlist display on the VGA will however look like this after a swap point has been set:



Display on the OSD:

```
*PL11/03* LEFT 06:42:22
V Mix 02:25   Spd.Unk
A Mix*02:25 A.Del. 00:00
IN-00:00:00 OUT+00:00:27
```

LOOP:

```
12:23:45:13 00:07:13 100
112B/04 ClipName 999/999
```

Swapping Audio Track in Manual Mode

If the Manual mode is selected for the Swap audio tracks parameter value in the Operational Setup menu, Playlist section, the swap operates in a similar way but asks the operator which track to swap when setting the swap points.

1. Select the original track:
   - In 2-Track mode: select between the tracks 1,2 or **MENU** to cancel.
   - In 4-Track mode: select among the tracks 1 to 4, or **MENU** to cancel.
   - In 8-Track mode: select among the tracks 1 to 8, or **MENU** to cancel.
   - In 16-Track mode: select among the tracks 1 to 16, or **MENU** to cancel. The tracks 1-8 are displayed on the first page and the tracks 9-16 are available via **F10** on the second page.
   - Use the function keys to select the track to change.
2. When the choice is made, the operator selects by which track the selected one has to be replaced:
   - In 2-Track mode: select the new track between 1, 2 or 0.
   - In 4-Track mode: select the new track among 1 to 4, or 0
   - In 8-Track mode: select the new track among 1 to 8, or 0
   - In 16-Track mode: select the new track among 1 to 16, or 0. The tracks 1-8 are displayed on the first page and the tracks 9-16 are available via F10 on the second page.
   - Several swap points can be set on the same timecode (for ex. 1 -> 3, 2 -> 4).

Selecting track 0 will mute the output until the next swap point or the end of the clip.

Deleting Swap Points

When you are on a swap point, press **CLEAR+IN/OUT** to delete the current swap point. All swap points for that timecode are deleted.

When you are not on a swap point, press **CLEAR+IN/OUT** to bring up a confirmation message to delete all swap points for the current clip.

Navigating Among Swap Points

When you are in Swap mode, the previous swap point can be reached by pressing the **Goto IN** button on the Remote Panel. The next swap point is reached by pressing the **Goto OUT** button. The function works in loop mode.

5.7.4. Using the Split Audio Mode

Introduction

The split audio feature is only available on the Remote Panel.

With 24 and 32 mono audio, this feature is not supported.

The split audio makes it possible to:

- Apply transition effect types and durations which are different on the audio and video tracks.
- Delay or advance the beginning of an audio or video transition.

When you play a playlist containing a split audio, the speed cannot be adjusted while playing. Changing the speed has to be set in the playlist itself.

As long as a growing clip is present in a playlist, the split audio is not allowed.

The Split audio mode feature requires the license code 112 being installed, and is therefore only available on XT-VIA chassis. For more information on the required license key, contact the Support or Sales team.

Default Transition Duration with Split Audio

- The simplest type of split audio edit that can be performed on an LSM is to make the video and audio transitions at the beginning of the clip have different durations, such as a 12 Frame Video Mix with a 2 sec Audio cross fade.
- The value of the Audio effect duration parameter of the Operational Setup menu, Playlist section, is only taken into account when the Advanced Audio Editing mode is enabled. Otherwise, the audio effect duration is always locked to the video effect duration, whatever the value of these parameters.
- If the Audio effect duration parameter in the setup is set to Lock to video, it will never be possible to adjust independently the duration of the audio and video transitions. If you want to adjust one of these transitions and the other one follows, please check the Audio effect duration parameter in the setup, and make sure it is NOT set to Lock to Video.

How to Activate the Split Audio Mode

To activate the split audio mode, proceed as follows:

1. Enter the Setup menu as described in the Multicam Configuration manual.
2. Enable the Advanced audio editing parameter in the Operational Setup menu, Playlist section.

   The parameter is not available with 24 and 32 mono audio.

Split Audio Menu

In Playlist Edit mode, when the Split Audio is activated, the Remote Panel displays **V Base** (**SHIFT+A**) and **A Base** (**SHIFT+B**) commands:

V Base	A Base	Effect	Edit all
Insert	Speed	Fx Dur	Delete

Activating the V Base option gives access to the following additional menu. The A Base menu is similar, but allows corresponding actions on video transitions:

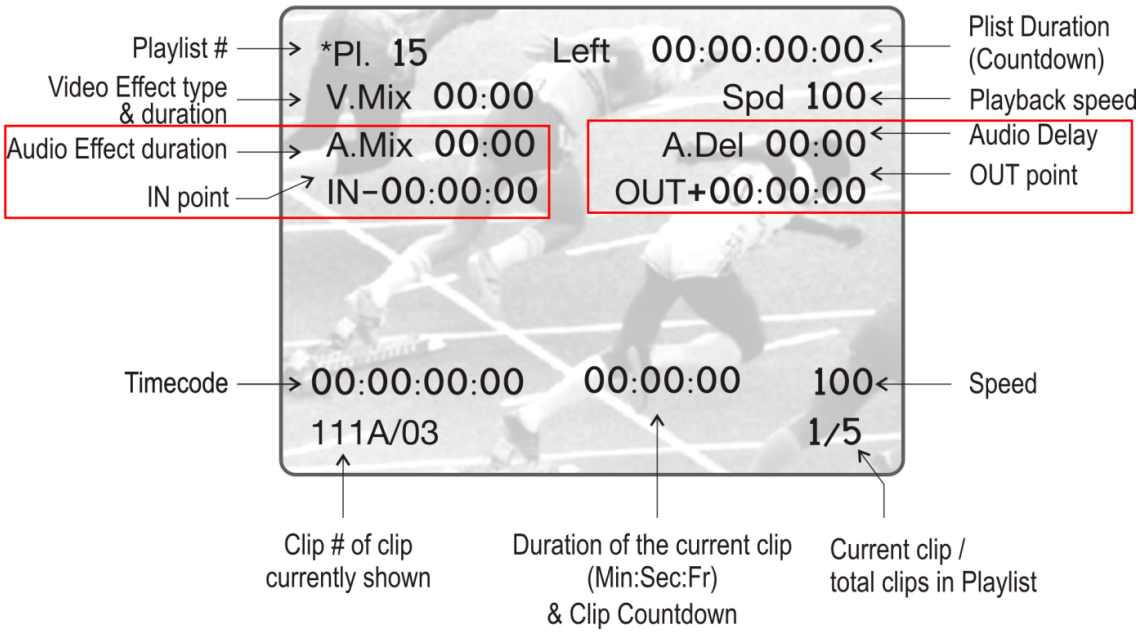
V Base	A Base	Swap	Edit All
A Advance	A Delay	A Fx Dur	A Split

The following table describes the split audio commands in V Base edit. The A Base commands are the same but relate to the video transitions.

Command	Description
A Advance	Advances the beginning of the audio transition.
A Delay	Delays the beginning of the audio transition.
A Fx Dur	Extends the duration of the audio transition on both sides. This creates an audio delay or advance depending on the modification applied to the effect duration.
A Split	Performs an audio advance or delay by specifying the TC for the beginning of the transition.

OSD Display

On the monitor display, additional information is also displayed when the split audio mode is active:



The information displayed below the playback speed will display the audio delay/advance or video delay/advance in frames depending on the editing action applied, or 'no split' if no delay or advance is applied.

How to Insert a Clip into a Playlist with Split Audio

To insert a clip into a playlist with split audio, proceed as follows:

1. Enter the Playlist Edit mode.
2. Browse to the desired clip in the playlist.
3. Press to highlight V Base (SHIFT+A)
4. Press to highlight A Split (D)
5. Jog to the point where you want to set your transition and mark an OUT point if you do an audio delay or mark an IN point if you do an audio advance.

5.7.5. Extending a Transition in Split Audio

Introduction

Whenever you perform a video or audio split on the Remote Panel, the transition originally set is changed, which means extended on either or both sides of the transition boundaries.

In the Operational Setup menu, Playlist section, use the Extend split transition parameter to set the default mode for extending transition effects, which means you specify where the effect is extended.

The Split Audio mode is not supported and the **Extend split transition** parameter is not available with 24 and 32 mono audio.

Transition Modes

The following table summarizes the various transition modes:

Criteria	Description
Center (on) Cut	The transition is extended equally in both directions. This is the default value.
End (on) Cut	The transition is extended to the left, so that the end of the transition is not changed.
Start (on) Cut	The transition is extended to the right, so that the start of the transition is not changed.
Ask	Asks the operator to choose one of the 3 options above each time he edits a transition.

Possible Cases

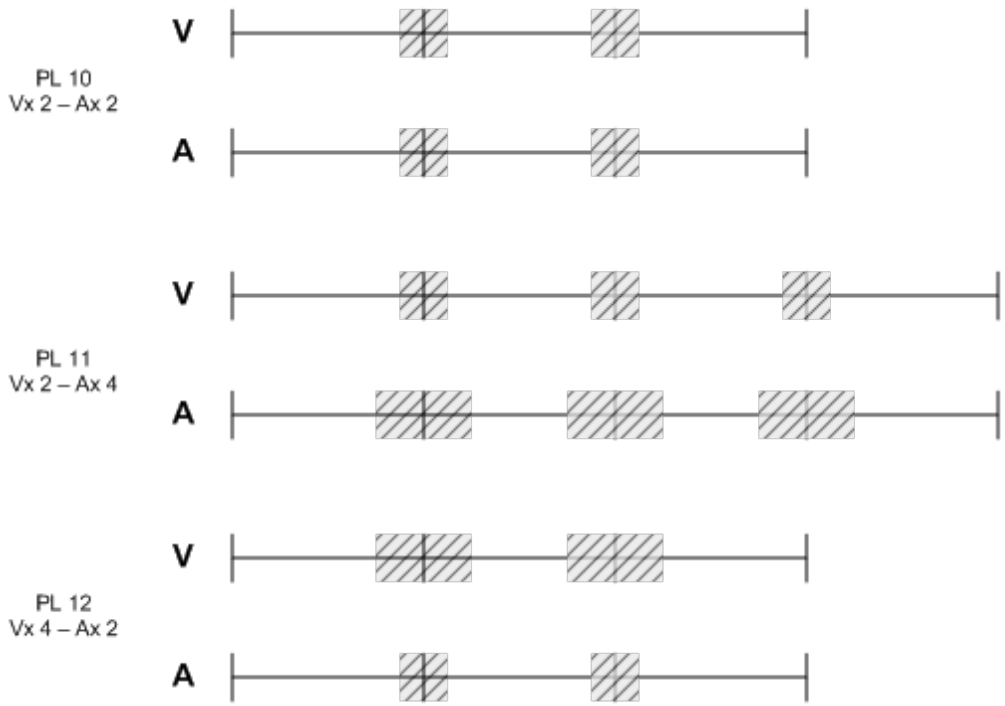
You can build different types of playlists depending on:

- the transition mode in video or audio split
- the transition duration

The following schemas show, for each transition mode, a playlist with:

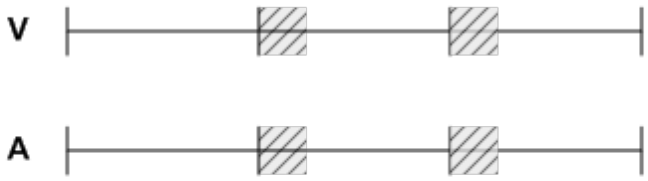
- the same video and audio transitions (no audio or video split) on playlists 10, 13 and 16
- an extended audio transition (V Base edit) on playlists 11, 14 and 17
- an extended video transition (A Base edit) on playlists 12, 15 and 18

Center On Cut

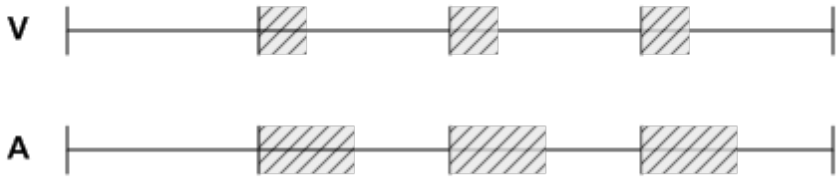


Start On Cut

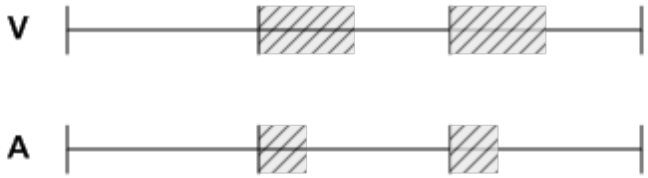
PL 13
Vx 2 – Ax 2



PL 14
Vx 2 – Ax 4

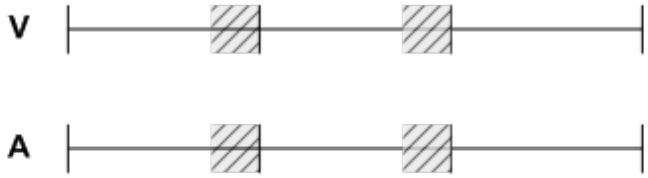


PL 15
Vx 4 – Ax 2

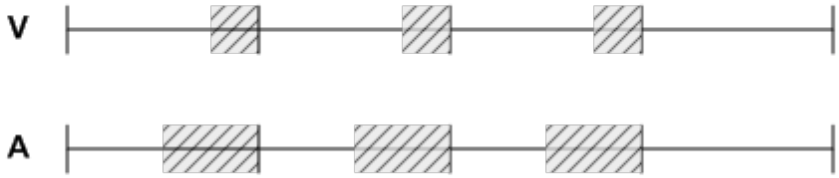


End On Cut

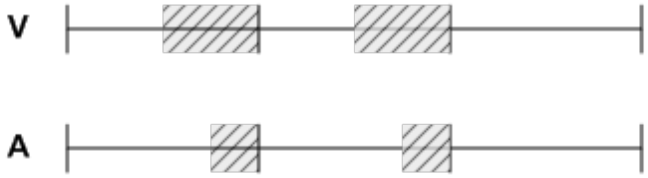
PL 16
Vx 2 – Ax 2



PL 17
Vx 2 – Ax 4



PL 18
Vx 4 – Ax 2



Changing the Audio or Video Effect Duration

Introduction

When you change the video or audio effect duration, you extend or reduce the duration of the video or audio transition:

- In case of **Center on cut**, the transition is extended/reduced on both sides. This creates an audio delay or advance depending on whether you reduce or extend the transition duration.
- In case of **Start on cut**, the transition is extended/reduced at its end point.
- In case of **End on cut**, the transition is extended/reduced at its start point.

How to Change the Video Effect Duration

To change the video effect duration, proceed as follows:

1. Enter the Playlist Edit mode.
2. Browse to the desired clip in the playlist.
3. Press **SHIFT+A Base** (**A**).
4. Press to highlight **V Fx Dur** (**C**).
5. Move the lever to adjust the value.

How to Change the Audio Effect Duration

To change the audio effect duration, proceed as follows:

1. Enter the Playlist Edit mode.
2. Browse to the desired clip in the playlist.
3. Press **SHIFT+V Base** (**A**).
4. Press to highlight **A Fx Dur** (**C**).
5. Move the lever to adjust the value.

5.7.6. V Base Editing in Split Audio

Description

In a V Base edit, you delay or advance the beginning of the audio transition compared to the video transition of the clip. VBase Editing is only available on the Remote Panel.

When editing a playlist in V Base or A Base, the video transition information will be on the top line of the OSD display, whereas the audio transition information will be on the bottom line of the OSD display.

How to Insert an Audio Delay

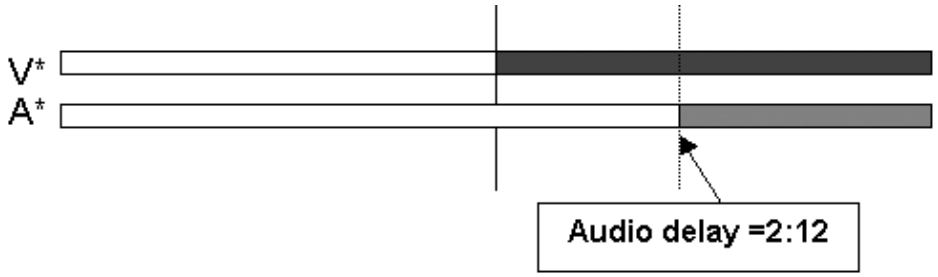
Inserting an audio delay consists of delaying the beginning of the audio transition compared to the video transition. The **Start on Cut** and **End on Cut** are not taken into account in these editing actions.

To insert an audio delay, proceed as follows:

1. Enter the Playlist Edit mode.
2. Browse to the desired clip in the playlist.
3. Press to highlight **V Base** (**SHIFT+A**).
4. Press to highlight **A Delay** (**B**).
5. Enter a value with the **F_** keys including leading zeros (0+2+1+2= 2:12).
6. Or move the lever and press **ENTER**.

The value entered will be present on the PRV SCREEN when the clip is next to play in a playlist.

Audio is extended from the end of the previous clip and the audio on the clip being edited is shortened.



How to Insert an Audio Advance

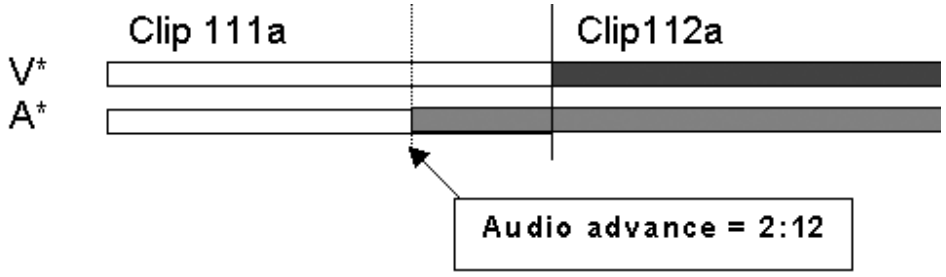
Inserting an audio advance consists of advancing the beginning of the audio transition compared to the video transition. The **Start on Cut** and **End on Cut** are not taken into account in these editing actions.

To insert an audio advance, proceed as follows:

1. Enter the Playlist Edit mode.
2. Browse to the desired clip in the playlist.
3. Press to highlight **V Base** (**SHIFT+A**).
4. Press to highlight **A Advance** (**A**).
5. Enter a value on the **F_** keys including leading zeros (0+2+1+2= 2:12).
6. Or move the lever and press **ENTER**.

The value entered will be present on the PRV SCREEN when the clip is next to play in a playlist.

Audio is shortened on the previous clip and the beginning of the clip being edited is extended.



How to Add an Audio Split

When you perform an audio split, you specify the TC for the beginning or the end of the audio transition. In this case, you can choose whether you perform an audio delay or advance.

To add an audio split, proceed as follows:

1. Enter the Playlist Edit mode.
2. Browse to the desired clip in the playlist.
3. Press to highlight V Base (SHIFT+A).
4. Press to highlight A Split (D).
5. Jog to the point where you want to set your transition.
6. Do one of the following:
   - Mark an OUT point if you do an audio delay.
   - Mark an IN point if you do an audio advance.

The value entered will be present on the PRV screen when the clip is next to play in a playlist.

If the IN or OUT point is defined two clips before or after the current clip (or even beyond), you will be asked to convert the playlist to a timeline.

5.7.7. A Base Editing in Split Audio

Description

In an A Base edit, you delay or advance the beginning of the video transition compared to the audio transition of the clip. ABase Editing is only available on the Remote Panel.

When editing using the Video IN/OUT as the reference point (V Base), the video will be the top line on the OSD display. When editing using the audio IN/OUT as the reference point (A Base), the audio will be the top line on the OSD display.

How to Insert a Video Advance

Inserting a video advance consists of advancing the beginning of the video transition compared to the audio transition.

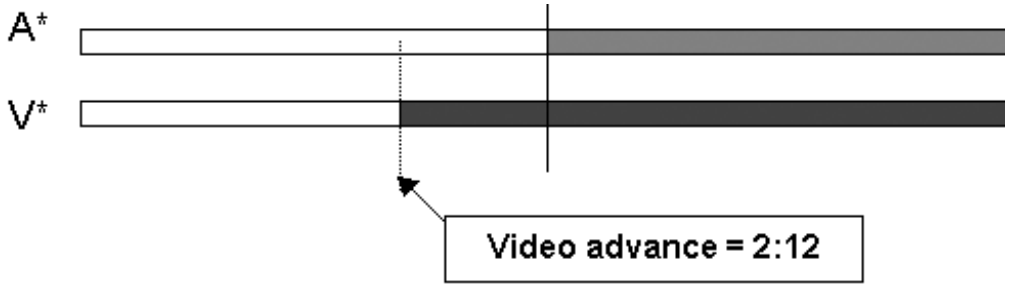
To insert a video advance, proceed as follows:

1. Enter the Playlist Edit mode.
2. Browse to the desired clip in the playlist.
3. Press A Base (SHIFT+B).
4. Press to highlight V Advance (SHIFT+A).
5. At the on screen prompt, enter a value on the F_ keys including leading zeros (0+2+1+2= 2:12).

   OR move the lever and press ENTER.

The value entered will be present on the PRV SCREEN when the clip is next to play in a playlist.

Video is shortened in the previous clip and the video from the clip being edited is extended.



How to Insert a Video Delay

Inserting a video delay consists of delaying the beginning of the video transition compared to the audio transition.

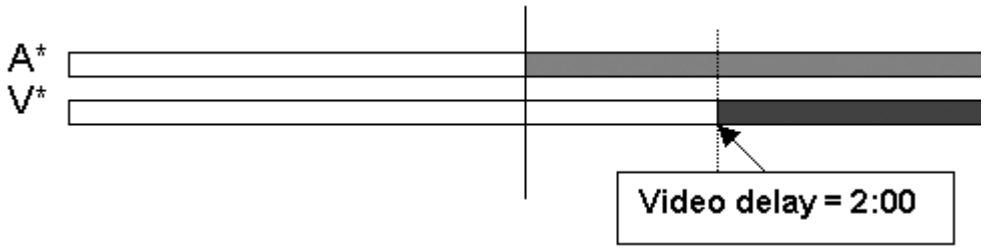
To insert a video delay, proceed as follows:

1. Enter the Playlist Edit mode.
2. Browse to the desired clip in the playlist.
3. Press A Base (SHIFT+B).
4. Press to highlight V Delay (SHIFT+B)
5. At the on screen prompt, enter a value on the F_ keys including leading zeros (0+2+1+2= 2:12).

   OR move the lever and press ENTER.

The value entered will be present on the PRV SCREEN when the clip is next to play in a playlist.

Video from the previous clip is extended and video from the clip being edited is shortened.



How to Add an Video Split

When you perform a video split, you specify the TC for the beginning or end of the video transition. In this case, you can choose whether you perform an video delay or advance.

To add a video split, proceed as follows:

1. Enter the Playlist Edit mode.
2. Browse to the desired clip in the playlist.
3. Press to highlight A Base (SHIFT+B)
4. Press to highlight V Split (D)
5. Jog to the point where you want to set your transition
6. Do one of the following:
   - Mark an OUT point if you do a video delay.
   - Mark an IN point if you do a video advance.

The value entered will be present on the PRV SCREEN when the clip is next to play in a playlist.

If the IN or OUT point is defined two clips before or after the current clip (or even beyond), you will be asked to convert the playlist to a timeline.

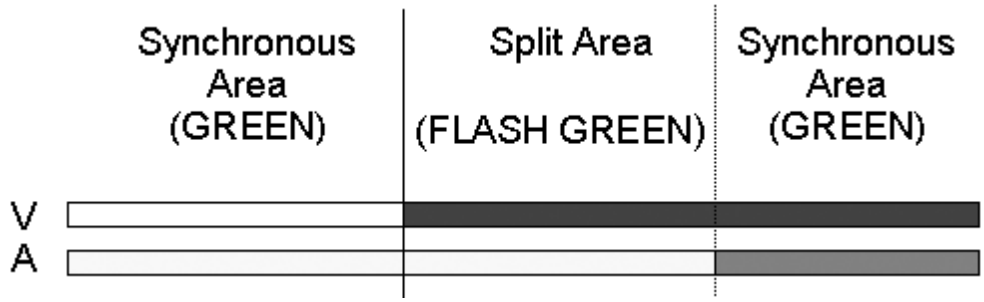
IN Key Colors in Playlist Mode

- When the Playlist is sitting on the Video and Audio IN point of a Clip, the IN key will light red.
- When the Playlist is sitting on the Video IN point of a Clip, the IN key will also light red.
- When the Playlist is sitting on the Audio IN point of a Clip, the IN key will flash red.
- If the Playlist is in a position where the Audio and Video are synchronous, the IN/OUT keys will be green.
- If the Playlist is in a position where the Audio and Video IN points have been split, the IN key will flash green.

OUT Key Colors in Playlist Mode

- When the Playlist is sitting on the Video and Audio OUT point of a Clip, the OUT key will light red.
- When the Playlist is sitting on the Video OUT point of a Clip, the OUT key will light green.
- When the Playlist is sitting on the Audio OUT point of a Clip, the OUT key will flash red.
- If the Playlist is in a position where the Audio and Video are synchronous, the IN/OUT keys will be green.
- If the Playlist is in a position where the Audio and Video OUT points have been split, the OUT key will flash green.

Example on Audio Delay Edit



Transitions are reset to zero on INSERT and DELETE functions.

5.7.8. Using the Replace Function

Introduction

The purpose of the Replace function is to consolidate the effects defined on a playlist as follows:

The operator loops a section or an entire playlist back to themselves and, during the playback, add some effects externally (graphic insertion for instance) or internally (changing the speed).

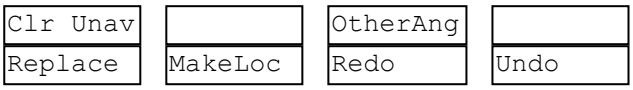
While the operator plays the playlist back, and inserts the requested effects, the playback result is re-injected into the playlist from a predefined IN frame. The OUT point of the replaced section is predefined or manually defined in the record process.

The Replace function is only available on the Remote Panel.

The Replace function is not allowed on playlists containing growing clips.
The Replace function is not supported on UHD-4K configurations.

Accessing the Replace Function

Press **MENU** in Playlist Edit mode to open the secondary menu with the Replace function. Select **Replace** in this menu to access the Replace function :



Replace Edit Mode

This mode allows to specify the following information for the Replace:

- IN point and OUT point, for the section to replace in the playlist. The OUT point can also be defined during the Replace itself.
- Loop mode parameters.

In the Replace Edit mode, the playlist is considered as one entity on which you can mark one IN point and one OUT point (pressing the IN and OUT points does not retrim the current playlist clip).

Those IN and OUT points will be used to determine what portion of the playlist will be replaced.

Replace Playback Mode

In this mode, you play the playlist back and insert the new section between the defined IN and OUT points.

After you have selected the required settings for the Replace function, the Replace Playback mode is automatically activated: the playlist is cued before the IN point (to create guardbands), ready to be initiated.

The playlist is played at the speed defined in the playlist but the lever can also be used to vary the playback speed.

When the Protect OUT point of the clip is reached, a clip containing the IN and OUT points with the guardbands is created on the Receive page defined in the Operational Setup menu. The loop is stopped and the user switches back to match Frame Edit mode.

Methods

You can perform a Replace action in two ways:

- By defining an IN and OUT points in the Replace Edit mode.
- By defining only an IN point in the Replace Edit mode, and defining the OUT point while you perform the Replace in the Replace Playback mode.

The IN and OUT points cannot be marked on a transition (including split audio transitions and swap zones) or on a split zone (the key will flash red when it is the case).

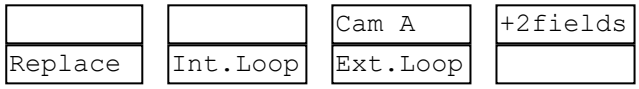
How to Perform a Replace

First define the Replace function in the Replace Edit mode. Then execute the Replace function in the Replace Playback mode.

To perform a Replace, proceed as follows:

1. Open the playlist in which you want to replace a section in Playlist Edit mode.
2. In Playlist Edit mode, press **Menu** on the Remote Panel to access the secondary menu.
3. Press the **A** key to enter the Replace Edit mode.
4. Use the jog dial to reach the desired IN point for the Replace section and press the **IN** key to mark it.

   When the IN point has been marked, the display switches to:

5. If you want to specify the OUT point for the Replace section at this stage, jog to the requested point and press the **OUT** key. Otherwise, you can define the OUT point while you perform the Replace.

   The **Int.Loop** (B) and **Ext.Loop** (**C**) keys are blinking.

6. If you want to specify the OUT point for the Replace section at this stage, jog to the requested point and press the **OUT** key. Otherwise, you can define the OUT point while you perform the Replace.
7. Press the **B** or **C** key to select whether you will use the internal loop or external loop to perform the Replace.
   - The playlist is cued before the IN point (to create guardbands), ready to be initiated.
   - A message appears on Remote: "`Start Replace: lever or play button`".
8. Push the lever or press the **Play** key on the Remote Panel to shift to the Replace Playback mode and start the Replace process.
9. If you have not defined the OUT point for the Replace in step 5, press the OUT key when you reach the desired OUT point.

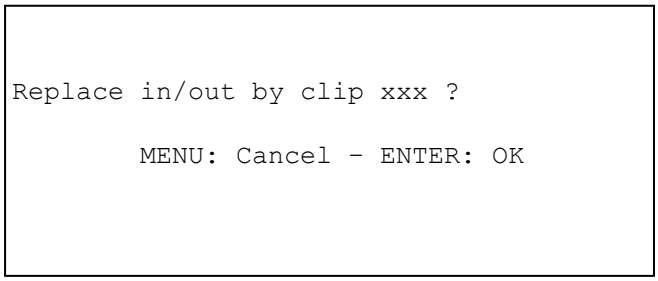
   While the Replace is being performed, the following messages are displayed on the OSD:

   "`Replace in Progress`"

   "`Clipping guardbands`"

   "`Replace by clip xxx`"

   On the Remote Panel, a confirmation message pops up:

10. Press **ENTER** on the Remote Panel to validate the Replace:
    - The material between the IN and OUT points is replaced with the newly created clip.
    - The playlist returns to Playlist Edit mode, positioned at the end of the inserted clip.
    - Press the **MENU** key on the Remote Panel to cancel the Replace.

Loop Mode in the Replace Function

When the IN point has been marked, the display switches to:

Replace	Int.Loop	Ext.Loop	+2fields

- The **Int.Loop** and **Ext.Loop** keys are blinking.
- Before entering the Replace Playback mode, choose between Internal Loop or External Loop.
- The Internal Loop is the same loop as the existing loop process.
- The External Loop allows you to select on which channel you will physically re-record the output of your PGM. The link is physical: it is necessary to make the video link manually with a router or video/audio cables; it is not done inside the server.

Additional parameters are available for the external loop:

- With the **Cam A** function (**SHIFT+C**), you can select the camera the PGM will be recorded to for the external LOOP process. Press **SHIFT+C** until the desired camera is selected.
- With the **+2fields** function (**SHIFT+D**), you can select by how much the video coming back to your record channel will be delayed. If you are using a DVE, it could introduce a delay. This system is based on the assumption that audio and video are in sync when they hit the record channel. The delay value cannot be negative.

  Select **SHIFT+D** to highlight the delay value; the display allows you to add frames or fields of delay to the delay value. Press either **MENU** or **SHIFT+D** to leave this mode.

5.7.9. Adding an Auxiliary Audio Clip

Introduction

This option allows adding a new stereo audio track (e.g. sport comments, music, jingles, ambient sound) to the original video clips. This is only available from the Remote Panel.

This stereo audio track is available on the PVW output and on analogue outputs 7/8 or on digital outputs 15/16. The selection of the track output is done with the **Aux. Track Output** parameter in the Operational Setup menu, Audio section.

The original audio tracks are still available on outputs 1/2 (3/4). The auxiliary audio clip selected is always played back with normal speed (100%), whatever the selected playback speed for the video.

When the playback of the playlist is not started from the beginning, the system calculates the offset between the current position and the beginning of the playlist, and applies the same offset to the Aux. Clip, so that it can remain synchronized with the playlist.

If the duration of the Aux Clip is longer than the playlist duration, the auxiliary audio clip keeps playing even after the video has stopped. Otherwise, the audio clip ends itself before the end of the playlist, when the audio clip reaches its OUT point.

How to Add and Remove an Auxiliary Audio Clip

To add/remove an auxiliary audio clip to a playlist on the Remote Panel, proceed as follows:

1. Activate the **Aux.Clip** button by selecting a clip from the clip bank.
    - This can be done outside of the PLST EDIT mode, or in PLST EDIT mode with PRV CTRL ON.
    - The Aux Clip option appears in the secondary menu on the Remote Panel.
2. Press **MENU** to call the secondary menu.
3. Press **Aux.Clip** button (**SHIFT+B**).
    - The ID of the Aux Clip appears in the title bar of the Playlist screen (**F10**)
4. To remove the current aux. clip:
    - Load the aux clip.
    - Pressing **MENU** to open the secondary menu.
    - Press **CLEAR+SHIFT+B** (Aux. Clip) on the Remote Panel.

6. Timeline Management

6.1. Introduction

Playlist Creation

Playlists can be created on the server:

- via the LSM Remote Panel and/or the Multicam user interface. The playlists are using specific banks on each page that can be accessed directly without requiring a dedicated creation step (please refer to "Setting and Loading Playlists" on page 109).
- by means of the Playlist Panel application in IPDirector.
- via external protocols.

Limitation on Playlist and Timeline Elements

- A playlist can include up to 999 elements.
- Up to 16000 playlist elements can be saved on a server.
- The temporary playlist elements, available for undo and redo actions, are stored on the server and are purged each time the Multicam application is closed.

Playlist Location

All playlists created are automatically stored on the banks dedicated to playlists and timelines on the server, i.e. the bank 10 of each page.

Playlists on page 10 are not available from the EVS Remote Panel. These playlists are reserved for external protocols (Odetics, Louth VDCP, EVS AVSP).

Refreshing the Playlist Information

Playlist information is not permanently refreshed on the network. The playlist information for a remote playlist bank is only transferred when entering that bank. If you are already connected to a remote playlist bank, you need to press SHIFT+F10 again to refresh the playlist information for this bank.

Use of Playlist Function in Dual LSM Mode

When the EVS server runs the Dual LSM Mode, both operators can use the playlist function at the same time on their Remote Panel.

They can edit and play the same playlist with the following restrictions for LSM Remote Panel #2:

- The **Replace** function is not available.
- The **Clear Unavailable** feature is not available.

6.2. Timeline Mode

6.2.1. Overview of the Timeline Mode

How to Access the Timeline Mode

The Timeline mode available from the Remote Panel allows you to edit the timeline.

To enter the Timeline Edit mode, proceed as follows:

1. Select the position where the requested timeline is stored on the playlist bank
2. Press the **PLST** button.

Output Assigment

The first user of the EVS server gets its first two outputs assigned as follows:

- Output 1: TL Recorder. It always displays the edit.
- Output 2: TL Player.

In the Timeline Edit mode, you work by default on the recorder: the jog dial and the lever control the recorder.

You also listen to all the timeline audio tracks.

Timeline Menu

The Timeline Editing menu is the following:

Speed		Fx Dur	Effect
Video	Audio1	Audio2	Extend*

A secondary menu is also available when you select **MENU** from the main menu in the Playlist Edit mode. All commands are not always available in the secondary menu:

Film FX	Delete		
Match	Add Cut	Redo*	Undo*

The functions with an asterisk are only displayed when they can be used.

See section "Functions in Timeline Mode" on page 154, for more a short description of the each function.

6.2.2. Functions in Timeline Mode

Main Menu Functions

The main menu appears as follows on the Remote Panel. The functions with an asterisk are only displayed when they can be used.

Speed		Fx Dur	Effect
Video	Audio1	Audio2	Extend*

Video / Audio1 / Audio 2

The **A** (Video), **B** (Audio1) and **C**(Audio2) keys make it possible to select the track on which you want to work. By default, the three tracks are selected.

Extend

The **Extend** function (**D** key) allows to extend the length of a timeline element by extending the IN or OUT points of the timeline element. The Extend is always performed in Overwrite mode, which means that the material 'covered' by the Extend is deleted from the timeline. See section "Extending a Timeline Element" on page 170 for more information.

Speed

The **Speed** function (**SHIFT+A** key) allows defining the speed at which one or all elements of a timeline will be played. Select the playback speed of the clip with the lever, then press **ENTER** to validate. Values are 'Unknown' and from 0 to 100%.

Operators have access to the secondary lever range while editing the speed of a clip, by pressing **SHIFT+Lever** on the Remote Panel. See section "Changing the Speed of a Timeline Element" on page 172 for more information.

FX Dur

The FX Dur function (SHIFT+ C key) sets the duration of the transition effect. The default value that initially appears is determined by the value set in the Operational Setup menu. The effect duration will affect the transition at the beginning of the selected clip. Use the lever to to adjust the value, then press ENTER to confirm.

Effect

The Effect function (SHIFT+C key) is used to select the type of transition effect (Mix/Wipe/Cut/Fade) to be applied to the timeline element(s) included between a Mark IN and Mark OUT. Move the lever to set the type of effect, when Effect is highlighted. Press ENTER to validate. See section "Adding Transition Effects in a Timeline" on page 175 for more information.

Secondary Menu Functions

The secondary menu appears as follows on the Remote Panel. The functions with an asterisk are only displayed when they can be used.

Film FX	Delete		
Match	Add Cut	Redo*	Undo*

Match

The Match function (A key) allows users to load the record train on the player channel at the same timecode as the current frame on the recorder channel.

Add Cut

The Add Cut function (B key) allows the operator to split an existing clip into two independent clips at a selected point. Both resulting clips are duplicates of the original one with additional SHORT IN and SHORT OUTpoints added at the cut point. See section "Adding Cuts in Timeline Elements" on page 163 for more information.

Undo/Redo

The last modifications of a timeline can be undone/redone for as long as the operator does not exit the timeline mode (e.g.: returning to Live).

Selecting the Undo command (D key) will undo the last modification. Up to 10 modifications can be undone. Once a modification has been undone, it is possible to redo it by pressing the Redo key (C key).

Film FX

Selecting this function (SHIFT+A key) will create a film style effect during the playout of the timeline by repeating one field every two fields. The audio is also affected by this effect, making it unusable and therefore, muted. This mode is deactivated when exiting a timeline.

Delete

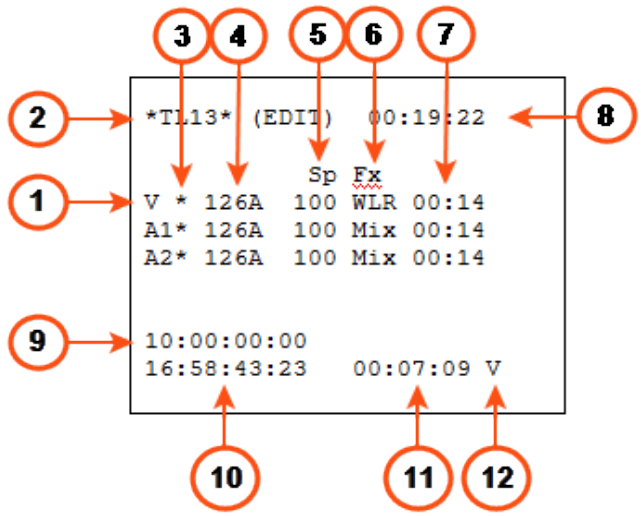
The **Delete** function (**SHIFT+B** key) allows the operator to remove a portion of a timeline. If the content is deleted in Overwrite mode, it is replaced by a black element. If the content is deleted in Insert mode, no space is left empty in the timeline. See section "Deleting Part of a Timeline" on page 169 for more information.

6.2.3. Display in Timeline Mode

On-Screen Display

The OSD on with the MV4 board and the internal LAN are slightly different and provide more information compared to the OSD through the discrete monitoring outputs (J3 &J4).

The screenshot below shows the OSD display when the timeline is loaded in Timeline Edit mode. The following table briefly describes each information highlighted on the screenshot.



#	Information Type	Description
1.	Track type (V, A1, A2)	Type of track in the timeline: V (Video), A1 (Audio1), A2 (Audio2). A timeline created in Multicam always includes two audio tracks.
2.	Timeline ID	Timeline number and location on the EVS server. The timeline 13 is located on page 1, bank 10 (playlist bank), and position 3.
3.	Track selection (*)	The asterisk shows the selected tracks, to which the editing actions will be applied. Tracks are selected using the **A**, **B** and **C** keys on the Remote Panel.

#	Information Type	Description
4.	Timeline element (TLE) LSMID	LSM ID of the current timeline element, that is the element at the nowline position.
5.	Speed (Sp)	Playing speed of the current timeline element.
6.	Transition effect (Fx)	Transition effect applied to the current timeline element. The transition effect is applied at the beginning of the timeline element.
7.	Transition effect duration	Duration of the transition effect.
8.	TL remaining time	Remaining time to the end of the timeline, that is to the last timeline element (black clip).
9.	Timeline TC	General timecode for the timeline. It gives the nowline position in the timeline.
10.	Clip TC	User timecode of the current clip for the track specified in the bottom line.
11.	TLE remaining time	Remaining time to the end of the current timeline element for the track specified in the bottom line.
12.	Reference track	First selected track in the timeline. The information in the bottom line of the OSD relates to this track.

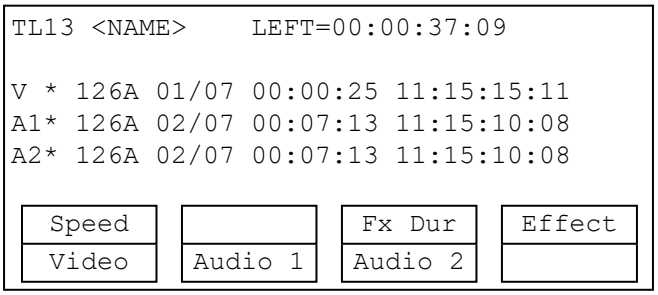
Color Codes on Track Types

The track type symbol of a desynchronized audio track (A) will appear in red.

The track type symbol of a track (A or V) that contains a black element (other than in the last position) will appear in orange.

Remote Panel Display

The Remote panel displays the following information:



The top row includes the TLID, TL name (if any), and TL remaining time.

Each track row displays the following information, from left to right:

- track type
- track selection (*)
- TL element LSMID
- TL element position in the timeline
- TL element remaining time
- TL element timecode

The red blinking keys of the Remote Panel and the black background on the LCD display show on which track(s) the editing actions will be carried out. In other words, if video only is selected when users do an insert, only the video will be inserted.

6.3. Managing Timelines

6.3.1. Creating Timelines

Introduction

The timelines can be created in one of the following ways:

- Using the Remote Panel, you can create a timeline from scratch, or from an existing playlist or timeline.
- Using the VGA interface, you can only create a timeline from an existing playlist or copy an existing timeline into a new position.

In the playlist banks where they are stored, the timelines are identified by “TL” for timeline, as opposed to "PL" for the playlists.

It is not allowed to insert growing clips in a timeline.

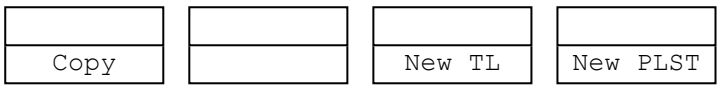
In the Remote Panel Interface

How to Create a New Timeline from Scratch

To create a new timeline from an empty playlist position:

1. In the playlist bank, press an **F_ key** corresponding to an empty playlist position.

   The following menu appears on the LCD display:



2. Press the **C** key (**New TL** option) to create a New TL.

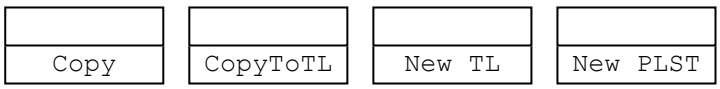
A new timeline is created on the selected position, with a black clip (000Z) of 24 hours.

How to Create a Timeline Based on a Playlist

To create a timeline based on a source playlist, proceed as follows:

1. Press the **F_ key** corresponding to the source playlist.
2. Press the **F_ key** corresponding to an empty playlist position.

   The following menu appears on the LCD display:



3. Press the **B** key (**CopyToTL** option) to copy the source playlist onto the selected position, and convert it at the same time into a timeline.
4. Press **ENTER** to confirm the copy.

The playlist is converted into a timeline at the selected position. A black clip (000Z) is added at the end of the timeline.

The transitions and speeds defined on the original playlist are preserved on the converted timeline.

In the VGA Interface

How to Create a Timeline Based on a Playlist

To create a timeline based on a source playlist, proceed as follows:

1. In the Clip window, select the playlist you want to convert.
2. Press **CTRL+C** to copy it.
3. Press **CTRL+T** to paste it into an empty playlist position (do not use **CTRL+V**).

The playlist is converted into a timeline at the selected position.

Audio in Timelines Based on an Existing Playlist

All audio tracks in the playlist are placed on the timeline as follows:

- Independently from the audio configuration, the first audio input is edited on the first audio track, the second input on the second audio track.
- The **Mono per group** parameter in the Operational Setup menu, Audio section, can be used to set how many audio mono tracks can be used for each edit track.

6.3.2. Copying Timelines

Introduction

Copying a timeline works exactly in the same way as copying a playlist. For this reason, this section will only provide an overview on the possible timeline copies.

See section "Copying Playlists" on page 112 for more details on how to copy a timeline from the Remote Panel and from the VGA.

Possible Copy Actions

The basic principle is that only copies to the local EVS server are possible, whereas copies to a distant EVS server are not supported.

The following table provides an overview on the copy actions available from the Remote Panel and from the VGA interface. The timelines are copied to an empty position in the playlist bank:

L = local timeline/position D = distant timeline	Remote Panel		VGA Interface	
	L to L	D to L	L to L	D to L
EDL Copy	Yes	Yes	Yes	Yes
EDL+Clips Copy (short or long)			No	

The copy action will not be executed in the following situations:
- copy to an EVS server with an audio configuration incompatible with the TL audio configuration
- copy to an EVS server with a video standard incompatible with the TL video standard

6.4. Editing Timelines

6.4.1. Overview of Editing Features

Editing Mode

Two editing modes are available when you perform editing actions in a timeline: **Insert mode** or **Overwrite mode**.

Insert Mode

The **Insert mode** works as follows:

- When you add audio or video content in the timeline, the media already included in the timeline is not removed. The content is inserted in the selected position and it pushes further right the existing elements of the timeline placed after this position.
- When you delete content, a black element is left where the material has been removed.

The **Insert** mode is either available from the menu options, or via the **SHIFT+INSERT** key depending on the editing feature.

Overwrite Mode

The **Overwrite mode** works as follows:

- When you add audio or video content in the timeline, the media already included in the timeline is removed from the selected position, by the duration of the added media.
- When you delete content, no black element is left where the material has been removed.

The **Overwrite** mode is either available from the menu options, or via the **TAKE** key depending on the editing feature.

Because the process is destructive, undo and redo are available, up to ten actions, during the edition of a timeline as long as the LIVE button (**RECORD**) is not used. When you go live, the undo history is lost.

When the tracks have been desynchronized due to an editing action, or a black clip is added within the timeline further to an editing action, the track type of the desynchronized tracks are displayed in orange.

Supported Editing Features

In Multicam, the following editing features are available:

Editing Feature	Description
Insert (3-point edit)	Allows inserting a clip or a portion of a clip or record train (audio and/or video) onto any position in the timeline. This is available in Insert or Overwrite mode.
Insert (4-point edit)	Allows inserting a portion of audio or video material (clip or record train) between a Mark IN and Mark OUT defined on the timeline. The speed of the inserted material is adapted to fit between the defined Mark IN and Mark OUT. This is available in Insert or Overwrite mode.
Extend	Allows extending the duration of a timeline element, either from its IN or from its OUT point. This is always performed in Overwrite mode.
Transition effects	Allows adding transition effects on a selected timeline element. This feature cannot be applied on the whole timeline at a time.
Speed	Allows changing the speed of a timeline element. This is available in Insert or Overwrite mode.

Accessibility to Timeline Editing Features

The timelines created in IPEdit can include more advanced editing features (See the IPEdit User Manual).

On the Remote Panel, you will be able to edit IPEdit timelines only if they include features supported by Multicam, that is to say:

- One video track and two audio tracks.
- No effect on any of the tracks.

In IPEdit, you can edit any timeline created in Multicam. Once a timeline has been edited in IPEdit and contains features unsupported in Multicam, it is no longer editable from the Remote Panel.

6.4.2. Adding Clips to a Timeline

Adding a clip to a timeline is the only editing action you can perform on any timeline on the Remote Panel, whether it has been created in IPEdit or from the Remote Panel.

To add a clip to a timeline, proceed as follows:

1. Recall the requested timeline by selecting its page (**SHIFT+Page+F_ key**), bank (**SHIFT+F10**), and the timeline position (**F_ key**). This is now the current timeline.
2. Recall the clip to insert at the end of the timeline by selecting its page, bank, and position.
3. Press **ENTER**.

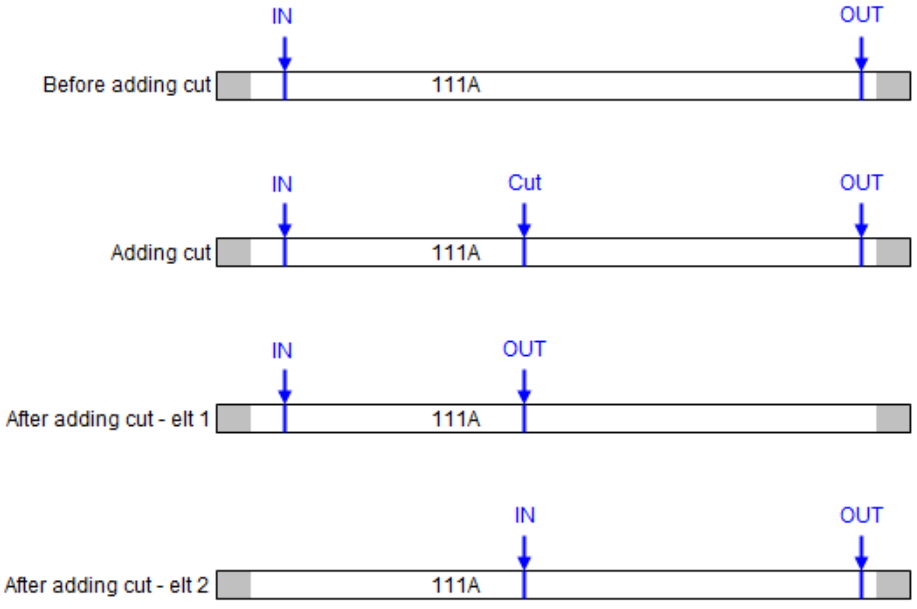
The clip is inserted at the end of the timeline.

6.4.3. Adding Cuts in Timeline Elements

Description

The Add Cut command is only available from the Remote Panel. This command duplicates a playlist or timeline element (clip, record train...) and adjusts the SHORT IN and SHORT OUT points of these new duplicated elements:

- On both these elements, the guardbands and other effects are kept unchanged as in the original one.
- In the first duplicated element, the SHORT IN point is left unchanged while the SHORT OUT point is adjusted to the cut point.
- In the second duplicated element, the SHORT OUT point is left unchanged while the SHORT IN point is adjusted to the cut point as illustrated hereunder.



Multicam Behavior

When adding a cut to a clip, Multicam will behave as follows:

- The transition applied at the cut point is a cut (for both audio and video).
- The speed of the cut elements is the same as the original element, even if it is “Unknown”.
- The stop and start modes of the cut elements are auto.
- Any loop defined on the playlist that includes the original element conserves and includes the cut elements.
- Any tag defined and active on the original element at the cut point is recreated at the short-in of the second cut element.

How to Add Cut to a Timeline Element

To add a cut to a timeline element in a timeline opened in Edit mode, proceed as follows:

1. Jog to the position where you want to add a cut.
2. Press **MENU** to access the Edit mode secondary menu.
3. Select the **Add Cut** option (**B** key) in the secondary menu.

The timeline element is cut in two parts that keep the same LSMID.

6.4.4. Inserting Material into a Timeline

Overview

Description

The **Insert** feature in Multicam consists of inserting new material into the timeline. The timeline is loaded on the recorder and the material to insert is loaded on the player.

The **Insert** action can be done as a three-point edit or four-point edit.

The **Insert** action can be done in Insert or Overwrite mode.

This action is only possible on the Remote Panel.

Insert or Overwrite Mode

If the Insert action is performed in **Overwrite** mode, the material 'covered' is overwritten by the inserted material. The timeline duration is not modified.

If the Insert action is performed in **Insert** mode, the material 'covered' is moved to the right of the timeline. The timeline duration is increased by the duration of the inserted material.

Three-Point Edit

In a **three-point edit**, three marks must be defined on the recorder and on the player for Multicam to be able to perform the **Insert** action, as shown below:

	IN	OUT
Recorder	X	X
Player	X	

	IN	OUT
Recorder	X	X
Player		X

	IN	OUT
Recorder		X
Player	X	X

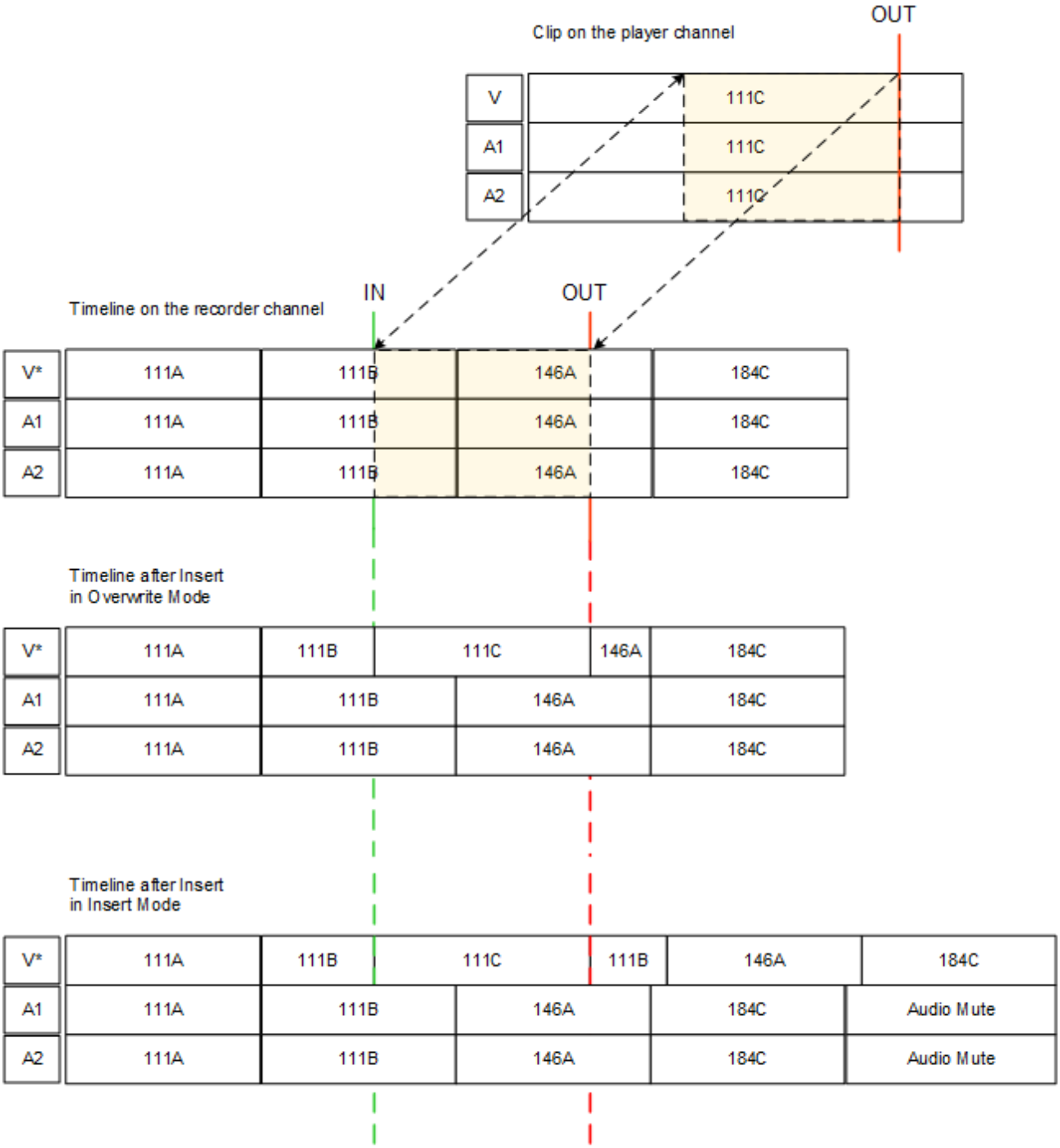
	IN	OUT
Recorder	X	
Player	X	X

Four-Point Edit

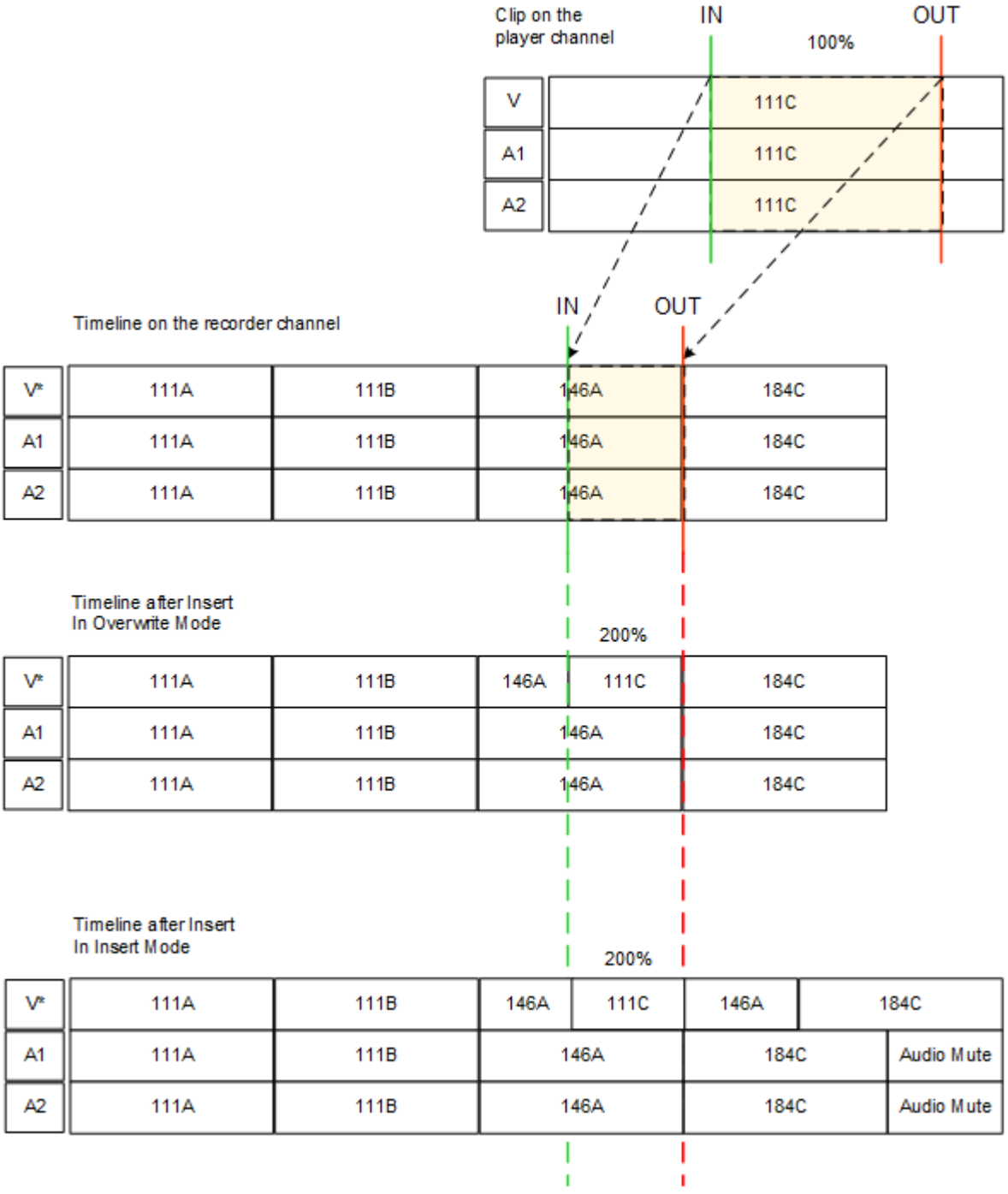
In a **four-point edit**, you must insert a Mark IN and a Mark OUT both on the timeline (recorder) and on the material loaded on the player for Multicam to be able to perform the action.

The speed of the inserted material will automatically be adapted to the duration between the Mark IN and Mark OUT in the timeline.

Example of Three-Point Edit



Example of Four-Point Edit



How to Insert Material Into a Timeline

Procedure

To perform an Insert (3- or 4- point edit), proceed as follows:

1. Recall the requested timeline by selecting its page (**SHIFT+Page+F_ key**), bank (**SHIFT+F10**), and the timeline position (**F_ key**).
2. Press **PLST** to load the timeline in Timeline Edit mode.
3. Use the jog dial to position on the requested Mark IN point in the timeline and press the **IN** key, if requested.
4. Use the jog dial to position on the requested Mark OUT point in the timeline and press the **OUT** key, if requested.

   At least one IN or OUT needs to be defined on the timeline in 3-point edit, and both IN and OUT needs to be defined in 4-point edit.
5. Press the Preview Control key (**PRV CTL**) to access the player.
6. Recall the clip containing the new material to insert.
7. Place a Mark IN and/or Mark OUT in the clip.

   At least one IN or OUT needs to be defined on the timeline in 3-point edit, and both IN and OUT needs to be defined in 4-point edit.
8. When the three or four marks have been defined on the timeline and in the clip, do one of the following actions:
   - Press **SHIFT+INSERT** to perform the Insert action in Insert mode
   - Press **TAKE** to execute the Insert action in Overwrite mode.

Results

In a three-point edit, a portion of the clip selected on the player has been inserted:

- Between the Mark IN and Mark OUT defined in the timeline
- After the Mark In defined in the timeline
- Before the Mark OUT defined in the timeline.

In a four-point edit, the portion of the clip selected on the player has been inserted between the Mark IN and Mark OUT in the timeline, and the speed of the inserted portion has been adapted to match the desired duration in the timeline.

In Insert mode, a black element is now present in the tracks the Insert action has not been applied to.

6.4.5. Deleting Part of a Timeline

Introduction

It is possible to delete:

- a timeline element on which you define a Mark IN or Mark OUT
- a portion of a timeline delimited by a Mark IN and Mark OUT points

The **Delete** action can be performed in Insert or in Overwrite mode:

- In **Overwrite** mode, the deleted portion is replaced by a black element.
- In **Insert** mode, no space is left empty and the remainder of the timeline shifts to the left.

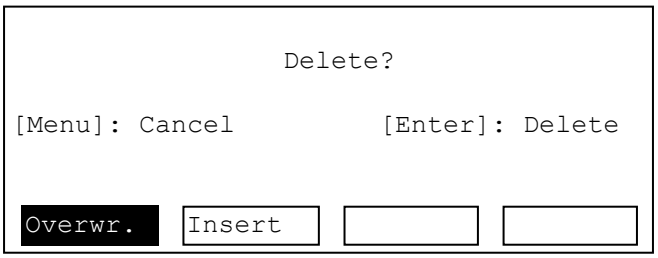
This action is only possible on the Remote Panel.

How to Delete Part of a Timeline

To delete a timeline element of a timeline loaded in Timeline mode, proceed as follows:

1. Jog to position where you want to delete a timeline element or a portion of a timeline.
2. Do one of the following action:
   - Press the **IN** key or **OUT** key in the timeline element you want to delete.
   - Press the **IN** key and **OUT** key, respectively at the beginning and end of the portion to delete.
3. Press **MENU** to call the secondary menu.
4. Press the **SHIFT+B** keys to select the **Delete** command.

   The LCD display and menu changes to become the following:



5. Press **A** or **B** key to perform the action respectively in Overwrite (**A**) or Insert (**B**) mode.
6. Press **ENTER** on the Remote Panel.

The timeline element or portion of the timeline is deleted in the selected mode.

6.4.6. Extending a Timeline Element

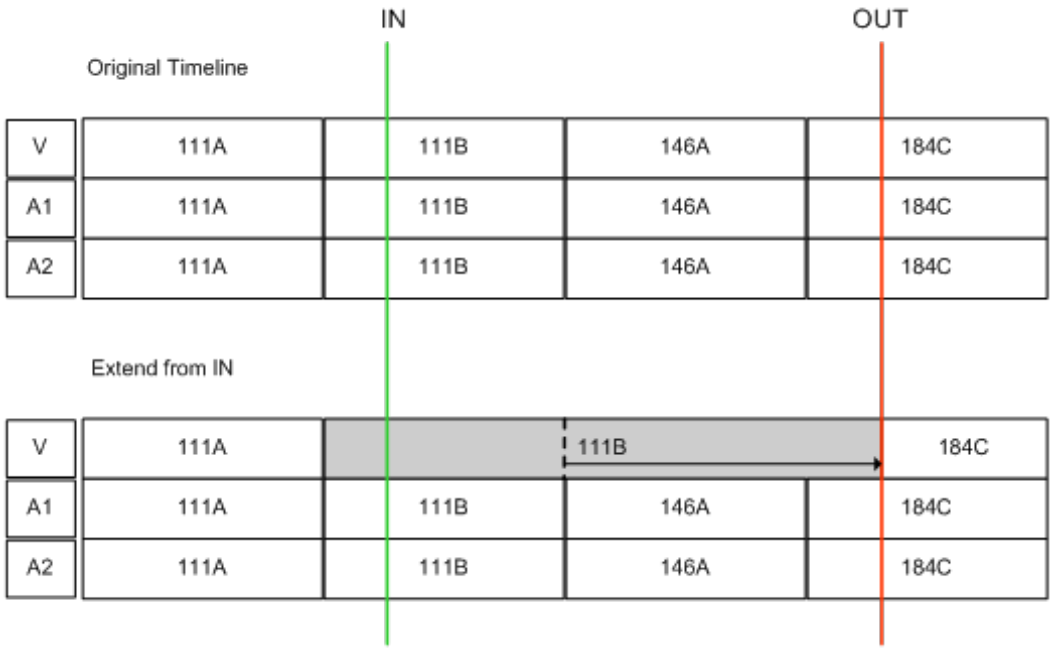
Introduction

The **Extend** feature in Multicam consists in extending the length of a timeline element by extending the IN or OUT points of a clip as explained below, as long as the material is available. This action can be performed with the Remote Panel.

If the required material is not available, the Remote Panel will beep. The Extend is always performed in Overwrite mode, which means that the material 'covered' by the Extend is deleted from the timeline.

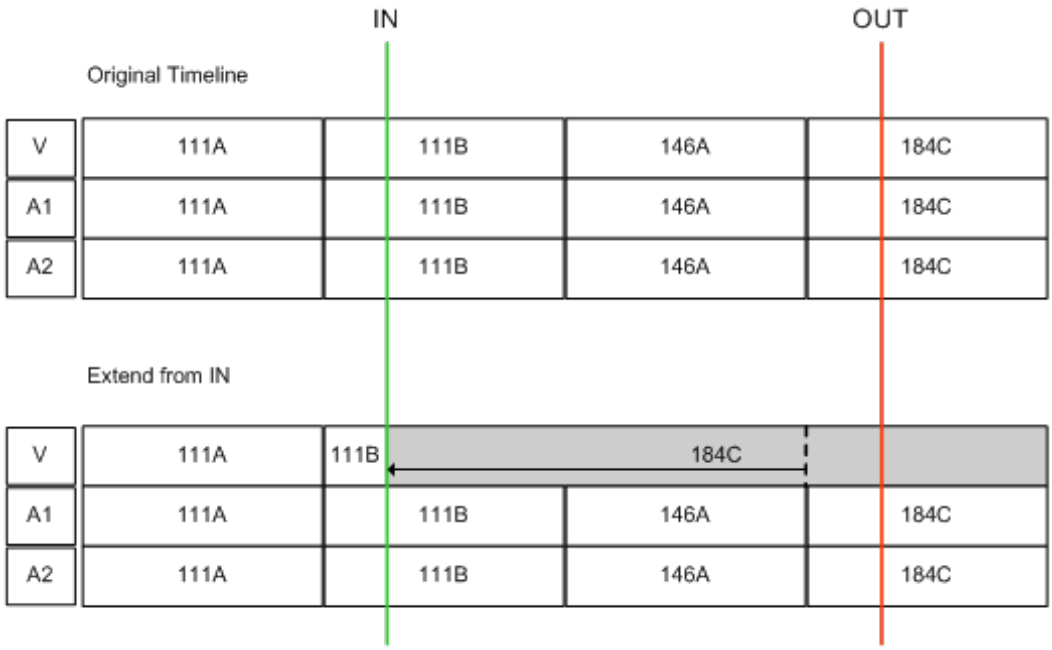
Extend From IN

This editing action shifts the OUT point of the timeline element which includes the Mark IN to the defined Mark OUT. The following schema shows an example with only the video track selected.



Extend From OUT

This editing action shifts the IN point of the timeline element which includes the Mark OUT to the defined Mark IN. The following schema shows an example with only the video track selected.

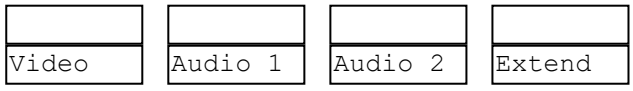


How to Extend a Timeline Element

To perform an Extend, proceed as follows:

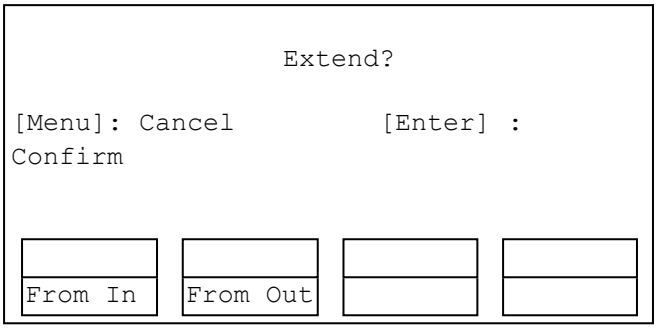
1. Recall the requested timeline by selecting its page (**SHIFT+Page+F_ key**), bank (**SHIFT+F10**), and the timeline position (**F_ key**).
2. Press **PLST** to load the timeline in Timeline Edit mode.
3. Use the jog dial to position on the requested Mark IN point and press the **IN** key.
4. Use the jog dial to position on the requested Mark OUT point and press the **OUT** key.

   'IN' and 'OUT' are displayed on the OSD. The Extend option is displayed on the LCD menu as follows:



5. Press the **D** key (**Extend**) to perform the Extend action.

   The LCD display and menu change to become the following one:



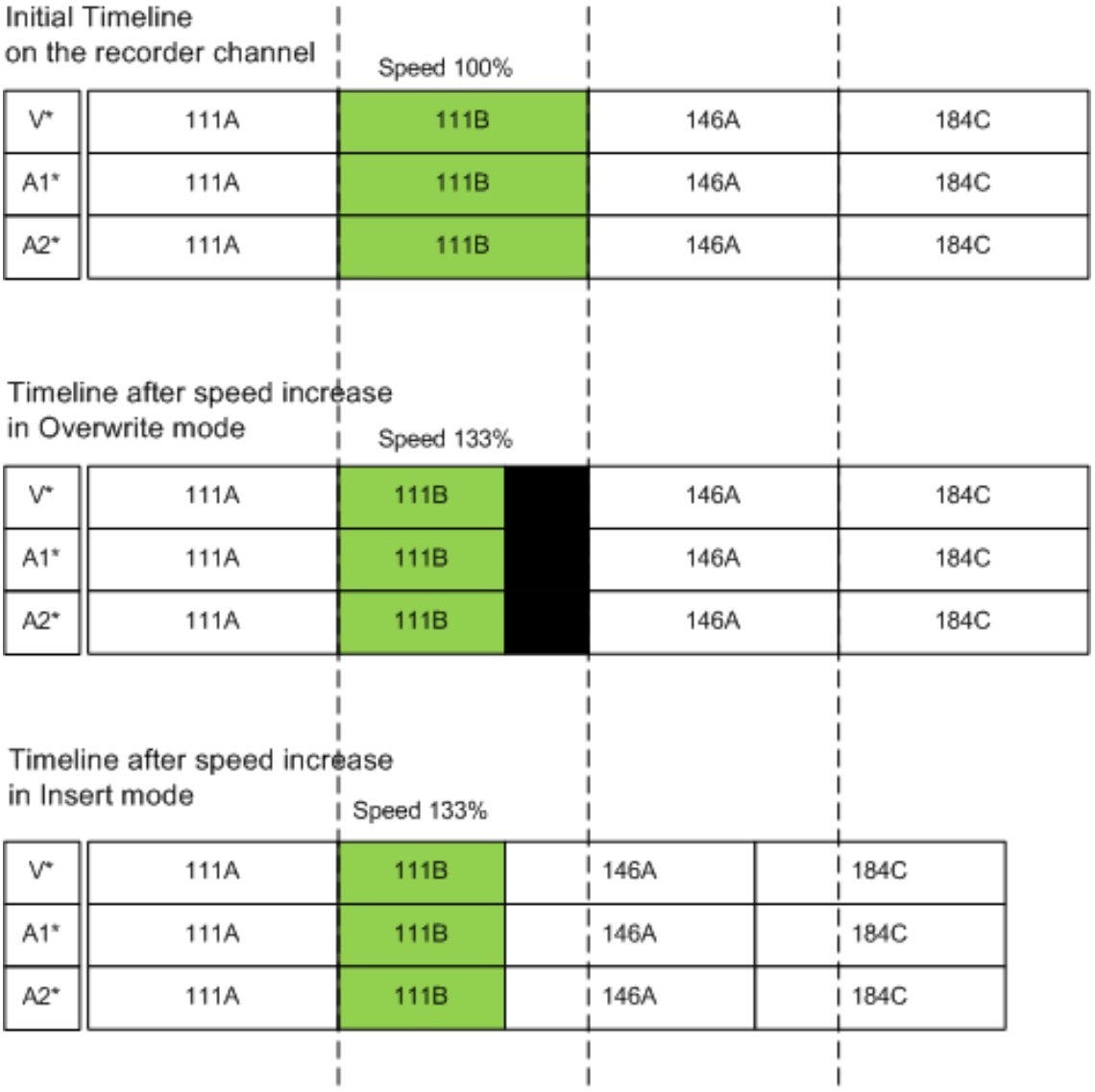
6. Press the **A** (Extend **From IN**) or **B** key (Extend **From OUT**) to select the Extend action.

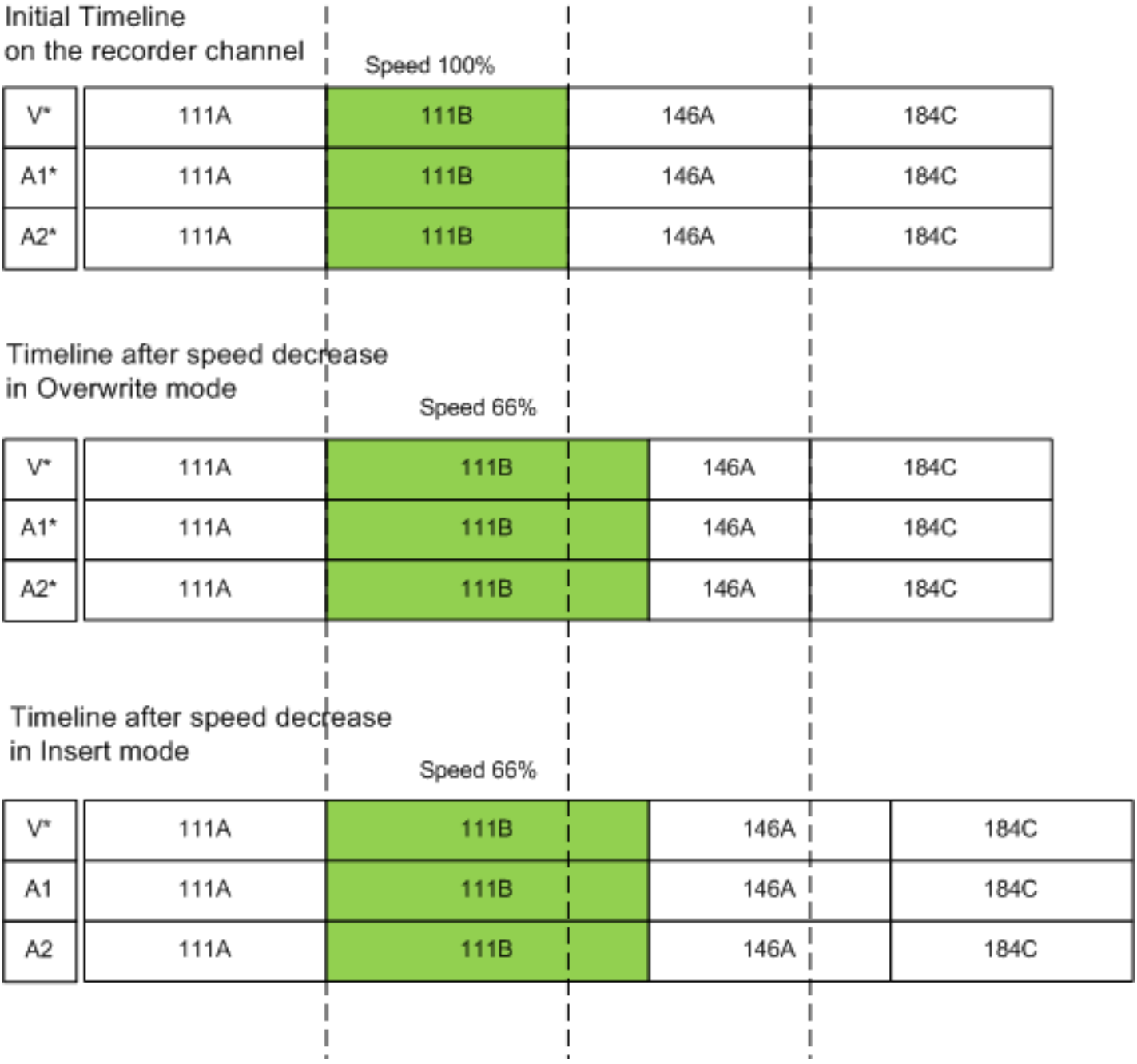
6.4.7. Changing the Speed of a Timeline Element

Description

You can modify the playout speed of the timeline element loaded on your Remote Panel in Timeline mode. You have access to the normal speed range, and to the second lever range.

Depending on the Editing mode (Insert or Overwrite), the impact on the surrounding timeline elements will vary, as shown on the drawings below:


Initial Timeline
on the recorder channel
Speed 100%
V*
A1*
A2*
111A
111B
146A
184C
Timeline after speed increase
in Overwrite mode
Speed 133%
Timeline after speed increase
in Insert mode
Speed 133%



How to Change the Speed of a Timeline Element

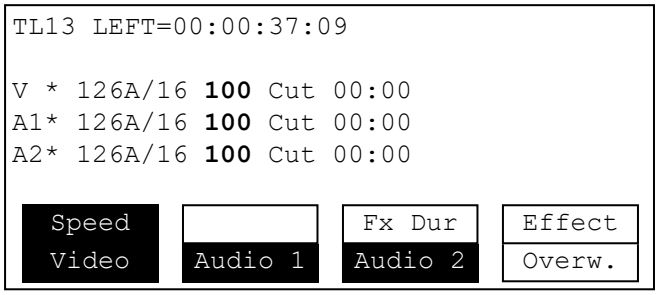
To change the playout speed of an element of a timeline loaded in Timeline mode, proceed as follows:

1. Browse to the timeline element you want to increase the speed of.
2. If you do not want to apply the speed change on all tracks, deselect the requested tracks by pressing the **A**, **B**, and/or **C** key(s).

3. Select the **Speed** command by pressing **SHIFT+A'** on the Remote Panel.

   The LCD display of the timeline element changes to show the speed after the LSM ID.

   The Overw. option appears on the menu option corresponding to the D key.



4. Select the **Overwrite** or **Insert** mode by pressing **D** on the Remote Panel.

   By default, the Overwrite mode is active.

5. If you need to access the second lever range, press **SHIFT+LEVER**.

6. Move the lever to change the speed.

7. Press **ENTER** to confirm the action.

Increasing or decreasing the speed of timeline element on individual tracks in Overwrite mode will obviously desynchronize the modified track with the other ones up to the end of your timeline. When the tracks are desynchronized, the track type (V, A1, A2) is displayed in red.

6.4.8. Adding Transition Effects in a Timeline

Description

You can apply effects on transitions within a timeline loaded on the Remote Panel in Timeline mode. You can jog in the timeline effects.

Unlike in playlist transitions, the material needed to apply the effect for the specified duration is taken from the guardbands. The maximum effect duration is therefore tied to guardbands duration. The timeline element is NOT shortened when a transition is applied.

The effects can be defined on the loaded timeline element or on all elements of the timeline. The effects are defined at the beginning of the timeline element, and are centered on cut. This means the effect duration is equally distributed on both sides of the transition.

The effects you can define are the same as the ones available in playlists: mix, wipe and fade effects. See section "Adding Transition Effects in a Playlist" on page 130 for more information on effect types.

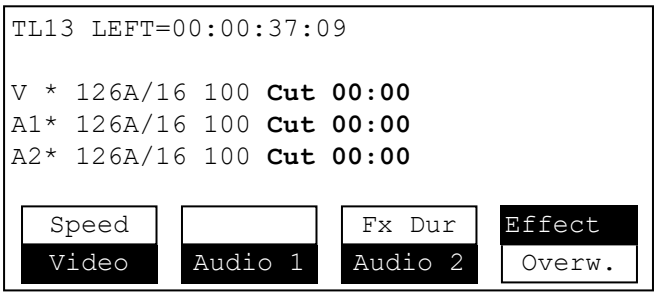
The audio effect is the same as the video effect, except with video wipe effects where the audio effect is a mix.

How to Add a Transition Effect to a Timeline Element

To add a transition effect to an element in a timeline loaded in Timeline mode, proceed as follows:

1. Browse to the timeline element you want to add a transition effect to.
2. If you do not want to apply the transition effects on all tracks, deselect the requested tracks by pressing the **A**, **B**, and/or **C** key(s).
3. Select the **Effect** command by pressing **SHIFT+D** on the Remote Panel.

   The LCD display of the timeline element changes to show the effect type and duration for each track, on the right of the LSMID and speed.



4. Move the lever to select the desired transition effect.
5. Select the **Fx Dur** command by pressing **SHIFT+C** on the Remote Panel.
6. Move the lever to select the desired effect duration.
7. Press **ENTER** to validate.

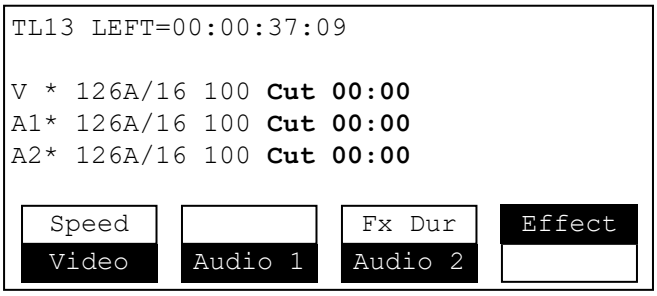
The transition effect has been added at the beginning of the timeline element.

How to Add Transition Effect to a Timeline

To add a transition effect to all elements in a timeline loaded in Timeline mode, proceed as follows:

1. Deselect the requested tracks by pressing the **A**, **B**, and/or **C** key(s) if you do not want to apply the transition effects on all tracks.
2. Select the **Effect** command by pressing **SHIFT+D** on the Remote Panel.

   The LCD display of the timeline element changes to show the effect type and duration for each track, on the right of the LSMID and speed.



3. Select again the **Effect** command by pressing **SHIFT+D** on the Remote Panel.

   The **Effect** command changes to **Edit All** command.

4. Move the lever to select the desired transition effect.
5. Select the **Fx Dur** command by pressing **SHIFT+C** on the Remote Panel.
6. Move the lever to select the desired effect duration.
7. Press **ENTER** to validate.

The transition effect has been added at all elements in the timeline.

6.5. Playing Out Timelines

Introduction

You can play out:

- Any local or remote timeline that has been created on the Remote Panel or in IPEdit.
- A local timeline that is still being edited by a Remote Panel or in IPEdit.

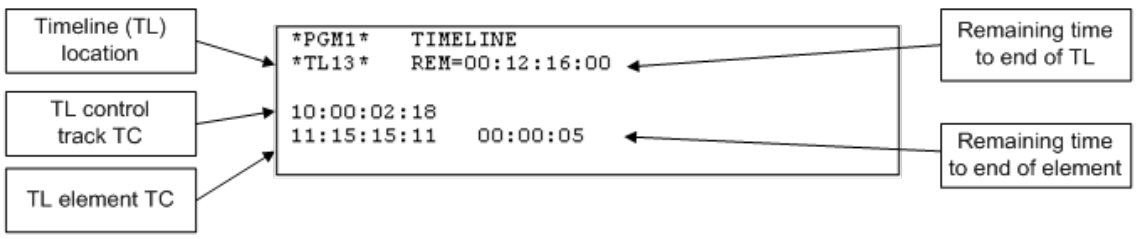
Press the **PLST** key on the Remote Panel to load a timeline. Press the **PLST** key a second time to enter the Timeline Playout mode.

The first frame of the timeline element following the one on the PGM will be displayed on the PRV side.

Press on the **PLST** key a third time to cue the timeline to the beginning, displaying the first timeline element on the PGM side and the following clip on the PRV.

On the On-Screen Display

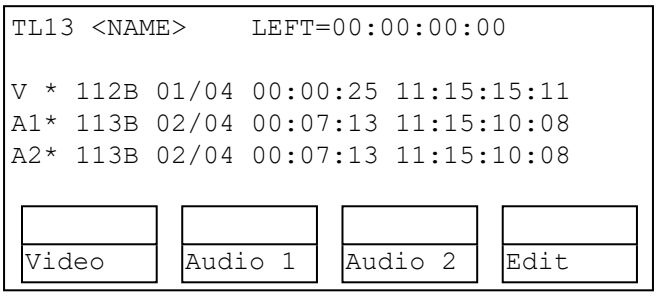
The following information is displayed on the OSD when the timeline is loaded in Timeline Playout mode:



Additional elements can be displayed on the OSD for timelines created with IPEdit. For more information on the OSD display with these timelines, refer to the IPEdit User Manual.

In the Remote Panel Interface

The information displayed on the Remote Panel in the Timeline Playout mode is the same as in the Timeline Edit mode:



Press the **D** key to access the Timeline Edit mode, or press the **PLST** key.

7. Keyword Management

7.1. Overview

Each clip of the server can be assigned 3 keywords and a ranking.

- Values for ranking are: -, *, **, ***.
- Keywords are selected from a user defined file that can contain up to 200 keywords of 12 characters.

This information (keywords and ranking) can then be combined with other criteria (such as timecode, dates...) to search the server database for matching clips.

The keyword and ranking assignment, and the search functions, can be performed using the EVS Remote Panel or the VGA screen and PC keyboard.

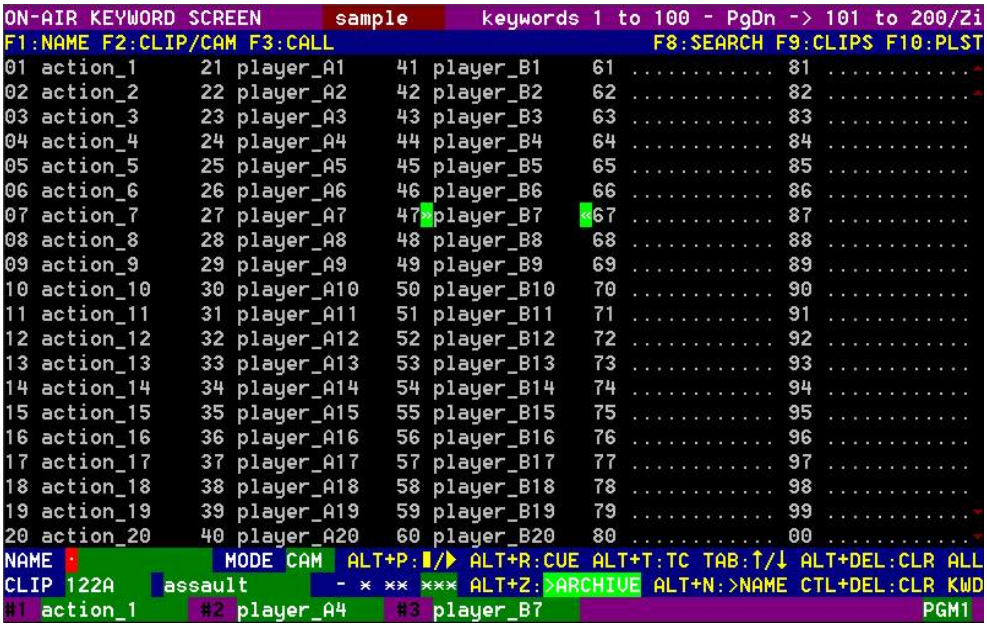
These functions are only available if license codes 124 (database search functions) and 125 (keyword assignment functions) are installed on the server.

The Keyword Windows

Keywords can be assigned to clips using the On-Air Keyword screen (**F6:KW1**), or the Off-Air Keyword screen (**F7:KW2**).

- The On-Air Keyword screen is used to assign keywords to the clip loaded on the primary channel of the 1st user, meaning that a play channel is used during this operation.
- The Off-Air Keyword screen is used to assign keywords to the clip selected with the green arrows in the Clip screen or in the VDR Panel, even if this clip is not loaded on any play channel. This can be useful to allow someone to assist the main operator for logging operations, without taking any play channel from the system

The operation of both On-Air and Off-Air Keyword screens is entirely similar.



- The name of the current keyword file is displayed in the centre of the Title Bar, against a red background.
- Many functions for clip management are similar to the Clip screen:
  - **F1:NAME**
  - **F2:CLIP/CAM**
  - **F3:CALL** (When calling a clip with the **F3** function in the Off-Air Keyword Screen, the system will automatically switch to the On-Air Keyword screen, since the clip to which you are assigning keywords has been loaded on a play channel.)
  - **ALT+P:PLAY/PAUSE**
  - **ALT+R:RECUE**
  - **ALT+T:SET TC**
  - **ALT+Z:>ARCHIVE**
  - **ALT+F key**:select the Call Channel from VGA is enabled.

  Refer to the description of the Clip screen for details about these functions.
- The ID and name of the clip that keywords are going to be assigned to is displayed at the bottom on the screen, along with the keywords, ranking and archive status already assigned to that clip.

7.2. Managing Keyword Files

Keyword File Content

The keyword file is a simple text file:

- With a name of maximum 64 characters.
- With a `.KWD` extension.
- Located in the `Multicam\KWD` directory of the server.

A sample keyword file (`SAMPLE.KWD`) is provided when Multicam is installed. The content of a keyword file is similar to the following:

```
1 = action_1
2 = action_2
...
19 = action_19
20 = action_20

21 = player_A1
22 = player_A2
...
39 = player_A19
40 = player_A20

41 = player_B1
42 = player_B2
...
59 = player_B19
60 = player_B20

61 = player_C1
62 = player_C2
...
199 = player_I19
200 = player_I20
```

Each keyword can have up to 12 characters, including blanks. Avoid accentuated and special characters since most of them will not be recognized by the Multicam application.
If a keyword is longer than 12 characters, only the first 12 characters will be used and the end of the keyword will automatically be truncated.

Creating a Keyword File

Up to 100 keyword files can be managed in Multicam.

Creating a keyword file can be done on any computer with a simple text editor. Make sure the file name does not exceed 8 characters, that all characters in the file name are legal, and that it has a .KWD extension.

The file can then be imported onto the server using a USB key together with the Import/Export Keywords Files from the Multicam Setup window (refer to your "Server Configuration Manual" for more details about this option).

Selecting the Current Keyword File

In the Multicam application, the keyword file can be selected either from the VGA Setup screen, or from the Operational Setup menu of the Remote Panel using the **Keyword file** parameter, Keyword section.

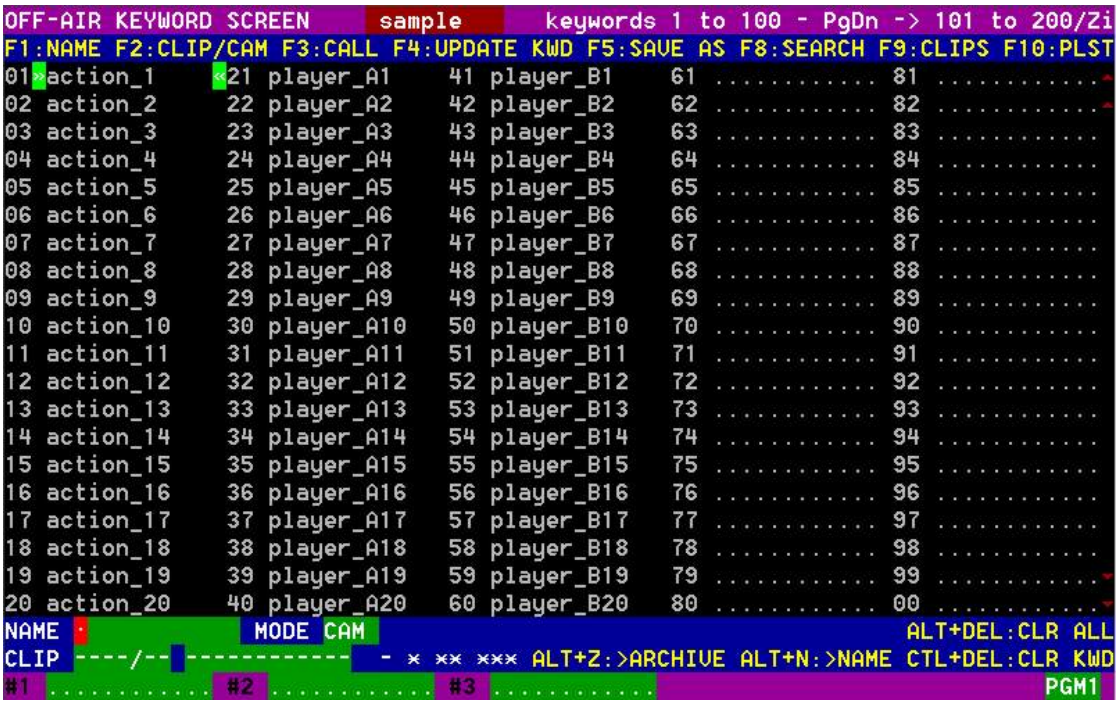
The operator can select any file from all the `.KWD` files present in the `Multicam\KWD` directory. If the machine is connected to other systems on the EVS SDTI network, the network server will automatically distribute its current keyword file to all other users on the network.

For each system on the network, the operator can choose to work with the file coming from the network server (set the **Keyword file** parameter to “SERVER”), or with a local file.

In a normal situation, the network server is the machine that has been defined as such in the EVS Configuration menu.
However, if for any reason the network has been interrupted or the machine designated as the network server is not available, another machine on the network (the Master machine with the highest serial number) will automatically take over this job, including the distribution of the keyword file. Even if the original network server reconnects, it will not necessarily become the actual network server again.
The machine that actually assumes the role of network server can easily be identified from the Connect window on the VGA or from the Network menu on the EVS Remote Panel, thanks to the “*” displayed next to its name. That machine only has the ability to distribute its current keyword file to the others on the SDTI network.

Editing the Keyword File in the VGA Interface

The Keyword file can also be edited directly in the Multicam application using the Off-Air Keyword screen (**F7**) as illustrated hereunder. This screen is also used to assign keywords to a clip as described in the next section.



1. Select a local keyword file from the Setup. If you select “SERVER” as keyword file in the setup,that is the file distributed by the network server, you will not be allowed to edit it.
2. Go to the **Off-Air Keyword Screen** by pressing **F7** on the keyboard.
3. If you want to create a backup copy of the current file, press **F5:SAVE AS** in that screen and enter the name of the file you want to create. This can also be used to create a local copy of the keywords file distributed by the Network Server.

If a `.KWD` file with the same name already exists in the `\KWD` directory, it will automatically be overwritten by the new file.

To edit a keyword in the current file:

1. Move the cursor to the desired keyword location using the arrow keys.
2. Type the new keyword. It will appear in the **Name** field at the bottom of the screen.
3. Press **ESC** to clear the whole field or **BACKSPACE** to delete the last character.
4. Press **F4:UPDATE KWD** to apply the value entered in the name field to the selected keyword.
5. Repeat this operation for all keywords that you want to update.
6. Press **PAGE UP** or **PAGE DOWN** to toggle between Page 1 (keywords 1 to 100) and Page 2 (keywords 101 to 200), or click on the Up/Down red arrows on the right side of the screen.

If your machine is the actual Network server, the updated file is automatically sent to all other users on the network every time a keyword is updated.

7.3. Assigning Keywords

In the Remote Panel Interface

Keyword Mode

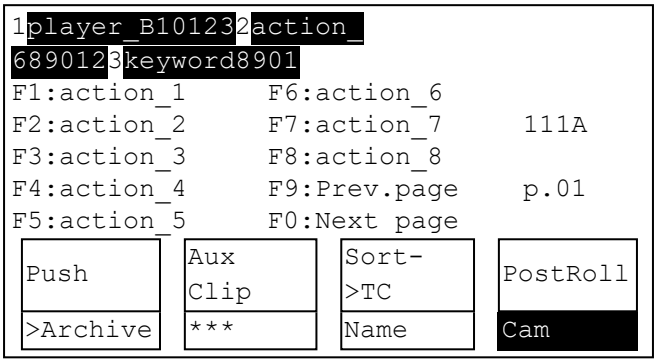
A keywords file must be selected in the setup to enable the keyword assignment functions on the Remote Panel.

In the Operational Setup menu of the remote, choose between both available modes for the **Keyword Mode** parameter, Keyword section:

- LIST mode (default): the list of keywords appears on the LCD display by group of 8 keywords, and you can select one of them by pressing the corresponding **F_ key**. In this mode, the keywords are visible, but it can be slow if you have to browse through a long list of keywords.
- NUMERIC mode: the list of keywords is not visible on the LCD display, and the operator selects a keyword by entering its position in the list with the **F_ keys**. He can know the position either from a hardcopy of the keywords list, or by looking at one of the VGA Keywords screens, or still from his memory... This mode is faster to operate, but in most cases the operator will need to have the complete list of keywords available next to him.

How to Assign Keywords in List Mode

To assign keywords to a clip in list mode, recall the clip, then press **MENU** to access the secondary clip menu on the Remote Panel.



The LCD displays a page containing 8 keywords. Press **F9**/**F10** to access the previous/next keywords page. To assign a keyword to the current clip, press the **F_ key** corresponding to the desired keyword on the LCD display.

Depending on the CLIP/CAM mode defined by the **D key**, the selected keyword will be assigned only to the camera angles loaded on the channels fully controlled by the operator at that time (CAM mode), or to all camera angles of the clip (CLIP mode). The keyword will be assigned to the first available keyword location on the 1st line of the LCD display.

If the Keyword Info parameter of the Operational Setup menu, OSD section, is set to **Yes**, it will also appear on the OSD of the corresponding monitoring outputs if the current picture is the Short IN point of the clip.

How to Clear Keywords in List Mode

If all three keywords locations are occupied, the operator has to clear some of them to be able to assign a new keyword to that clip.

To clear one of the keywords already assigned, press **CLEAR+F1 / F2 / F3** in the secondary clip menu.

The clip can also be named based on the keywords. Press the Name function (**C key**) in the secondary menu, then select keywords. The keywords will be added to the name of the clip, up to 12 characters. In this mode, the name of the clip is visible on the OSD. It can also be edited with the following keys:

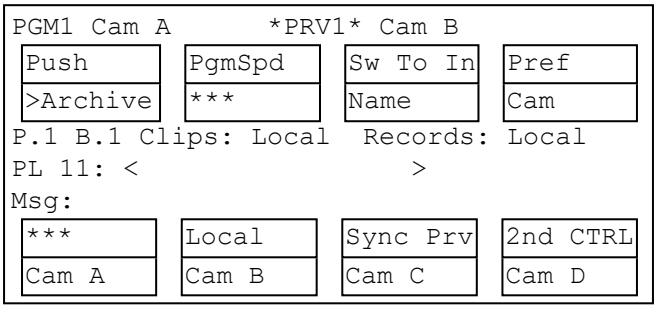
- **CLEAR**: erases the last character
- **SHIFT+CLEAR**: inserts a blank
- **SHIFT+F1-F10**: inserts a number (1, 2, 3, ..., 8, 9, 0)

Once the name is complete, press **ENTER** to validate or **MENU** to cancel.

While the operator is in the secondary menu, he has full control of the current clip with the lever, **PLAY** key and jog dial, so he can browse the clip and start a replay at any time.

Assigning Keywords and Ranking Before Saving a Clip

It is also possible to assign keywords and ranking to a clip before it is created. Indeed, when a record train is loaded, as soon as the operator marks an IN or OUT point, the main and secondary menu changes to make the Keyword functions available.



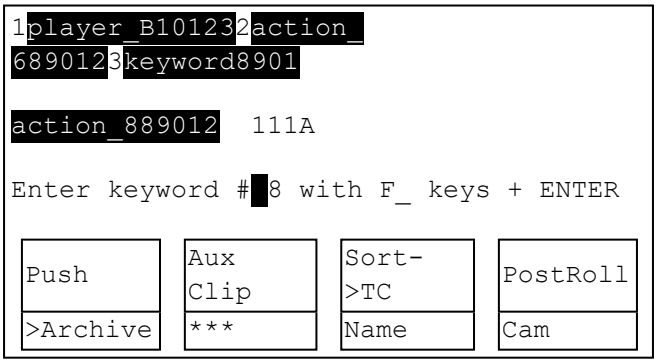
The **SHIFT+A** function of the main menu, normally used by the Reset CAM function, can be used to define the ranking, without entering the secondary menu.

For additional functions like selecting keywords, flagging the future clip for archiving, marking it to be pushed to another machine, defining its name from the keywords, they can be performed from the secondary menu, exactly the same way as for a clip already stored.

All these settings are memorized and will be applied to the clip when it is created.

How to Assign Keywords in Numeric Mode

To assign keywords to a clip in numeric mode, recall the clip, then press **MENU** to access the secondary clip menu on the Remote Panel.



Enter the keyword position in the list using the **F_ keys**. Every time a new digit is entered, the corresponding keyword is displayed in the highlighted area in the centre of the LCD screen, to allow the operator to validate the entry before confirming it. If a wrong digit is entered, press the **CLEAR** key to delete it. Once the right keyword is found, press **ENTER** to confirm or **MENU** to cancel.

The rules for keyword assignment and deleting keywords are identical between LIST and NUMERIC modes.

In the VGA Interface

1. From the Clip screen, access one of the Keyword screens by pressing F6 (ON-AIR keyword screen) or F7 (OFF-AIR keyword screen).
2. Move the cursor to the desired keyword and press **ENTER**.

The keyword is assigned to the first available keyword location on the last line of the screen. Repeat this to assign more keywords (up to 3) to the current clip.

Depending on the CLIP/CAM mode, the keywords will be assigned to the current camera angle only (CAM mode), or to all camera angles of the current clip (CLIP mode).

If three keywords are already assigned to the clip, the operator has to clear some of them to be able to assign new keywords.

7.4. Clearing Keywords

In the VGA Interface

Clearing a Keyword

1. Press the **TAB** key to move the arrow cursor to the lower area of the screen.
2. A red arrows will appear around one of the keywords or ranking values.
3. Use the **LEFT ARROW** and the **RIGHT ARROW** keys to select the keyword to remove.
4. Press **CTRL+DEL**.
5. Press the **TAB** key again to move the arrow cursor back to the keywords list.

Clearing All Keywords and the Ranking of a Clip

Press **ALT+DEL** or click on **ALT+DEL:CLR ALL** to remove all keywords assigned to the clip and to reset the ranking to the lowest level (“-“).

8. Operation on XNet Network

8.1. Overview

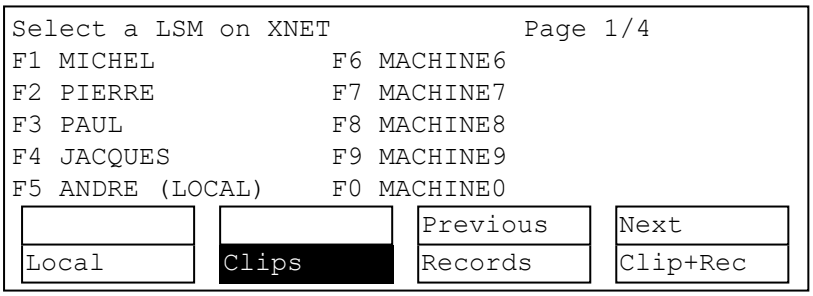
The XNet Network is set up in the EVS application. For more information, on how to set up the XNet Network and connect to the XNet network, refer to the section 'SDTI Network' in the Configuration manual.

When the remote system is selected, the operation with remote clips or remote trains is similar to the operations on the local system as described later in this chapter.

8.2. Selecting a Network Server

In the Remote Panel Interface

Press the **Network** key to display the following Network menu:



The LCD screen of the Remote Panel displays the complete list of available systems on the network.

- The list is organized according to the order of connection on the network.
- Up to 4 pages are available to display up to 31 servers.
- The **Previous** and **Next** commands appear only when all machines do not fit on the current page.

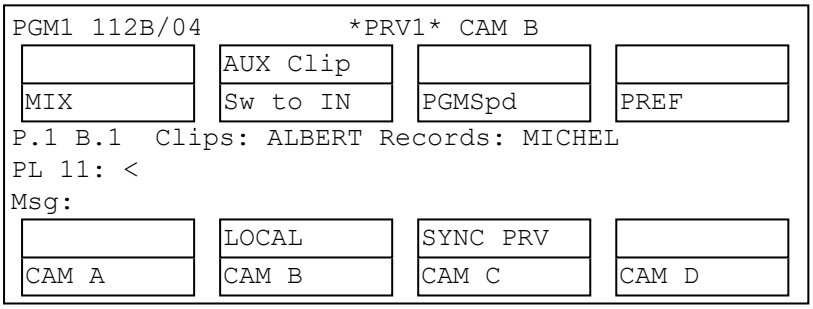
Select one of the following 4 available connection modes (the active mode is highlighted). These modes are detailed below.

- Local
- Clips
- Records
- Clip+Records

Once the desired mode is selected, press the **F_ key** corresponding to the remote system.

If you work in Dual LSM mode, the Loc. Rec. command is available with the SHIFT + A soft key. This allows you to get access to all recorders of the local server. See section "Accessing All Recorders of the Local Server" on page 41 for more information.

The LCD display returns to the normal mode and the names of the remote systems are now displayed after the Page and Bank information as illustrated hereunder:



Connection Modes

Local mode

The local system is identified with the 'Local' sign after the name of the system as illustrated in the previous figure.

Press the **A** key to activate the Local mode and have direct access to the Local mode. This command is highlighted when Local mode is activated.

Clips Mode

Press the **B** key to activate the Clips function.

In this mode, you can connect to the clip banks of another EVS server connected to the network. In other words, the VGA clip screen and the **F_ keys** of the Remote Panel show the clips from the selected EVS server.

If you press the **RECORD** key, you go in Live mode on the local record trains.

Records Mode

When you select one of the EVS server in the Network menu, you connect the record trains to this EVS server. This means that the next time you press the **C** key for the **Record** function, the active channels will go in Live mode (or Near Live mode for remote trains) on the record trains of the selected EVS server.

The clips remain connected to the EVS server they were connected to.

Clips+Records Mode

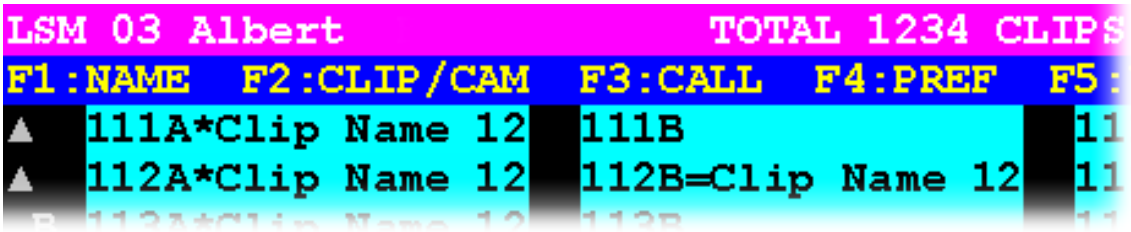
Press the **D** key that activates the **Clip+Rec** function. In this mode, you can connect both to the clips banks and to the record trains of a remote server.

The VGA clip screen and the **F_ keys** of the Remote Panel show the clips from the selected server.

The next time you press the **RECORD** key, the active channels will go in Live mode (or Near Live mode for remote trains) on the record trains of the selected EVS server.

In the VGA Interface

Once the desired mode and the remote system are selected on the Remote Panel, the names of the remote systems are displayed in the title bar of the Clip screen as illustrated hereunder.



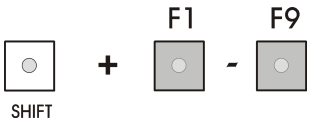
It is possible from the VGA to connect back to the last machine connected by pressing **ALT+TAB**.

8.3. Recalling and Playing Back a Remote Clip

In the Remote Panel Interface

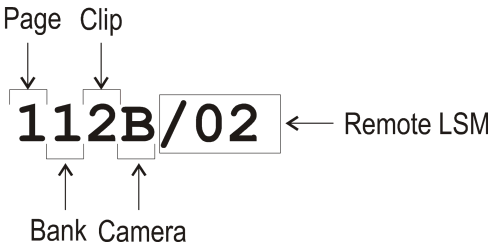
To recall/play back a remote clip, proceed as follows:

1. Select the Clip mode in the Network menu.
2. Select the remote EVS server from the list. The LCD display returns to the normal mode.
3. Select the clip page 1, 2, 3 ... to 10 (**Page** key). When selecting a server, it will automatically reconnect to the page and bank that was last used.
4. Select the bank in which the desired clip is located.



5. Choose the required clip (**F1** - **F10**).
6. If all clips are present (from Camera A, B, C and D), they will appear in their respective locations (Channel A, B, C or D).

The label of a remote clip is different in order to identify it easily among other clips:



8.4. Naming a Remote Clip

This operation requires action on both the Remote Panel and the VGA interface.

To name a remote clip, proceed as follows:

1. Select the Clip mode in the Network menu.
2. Select the remote EVS server in the list. The LCD display returns to the normal mode.
3. Go to the Clip screen on the VGA, all banks of remote system are now displayed.
4. Select the clip to name.
5. Type the desired name on the keyboard.
6. Press F1 to name the remote clip.
    - In CAM mode, only the camera where the cursor is located is named
    - In CLIP mode, all cameras of the clip where the cursor is located are named.

To be able to rename a clip on a remote server, the **Clip Edit by Network** parameter must be enabled in the Operational Setup menu, Protection section.

8.5. Modifying IN and OUT Points of a Remote Clip

In the Remote Panel Interface

To modify the IN and OUT points of a remote clip, proceed as follows:

1. Recall the desired clip.
2. Browse inside the clip until you reach the desired frame.
3. Press the **IN** or **OUT** key to mark a new Short IN / Short OUT points.

To be able to rename a clip on a remote server, the **Clip Edit by Network** parameter must be enabled in the Operational Setup menu, Protection section.

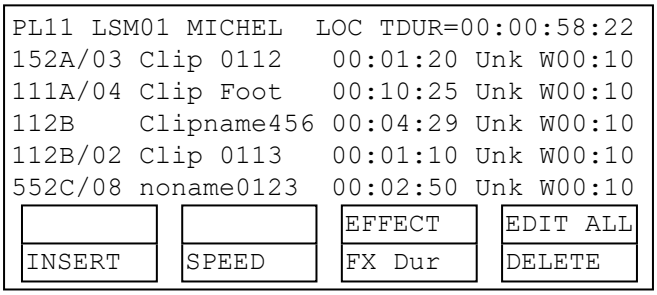
8.6. Inserting Remote Clips into a Playlist

In the Remote Panel Interface

To insert remote clips into a playlist, proceed as follows:

1. Select the remote EVS server via the Network menu.
2. Select a remote clip in the banks. The corresponding **F_ key** lights red.
3. Press **ENTER** on the Remote Panel.
4. Repeat the steps 1-3 as many times as necessary until the last clip is entered.

In Playlist Edit mode, the remote display gives all needed information regarding this playlist and this information is updated each time a clip is stored in the playlist.



8.7. Rolling a Playlist with Remote Clips

In the Remote Panel Interface

To roll a playlist with remote clips, proceed as follows:

1. Once the playlist is cued and ready to roll, select the playlist from the playlist bank.
2. Press the **PLST** key on the Remote Panel.
3. Move the lever or press the **PLAY** key to start the playback.

Clips Unavailable on the XNet Network

While the playlist is rolling on air, a remote clip might be unavailable due to a network problem or simply if the remote EVS server has left the network.

In this case, the clip is marked as 'NOT AVAILABLE' on the playlist screen and is skipped when the playlist is rolling. If a clip is available again, it will re-appear automatically and be played at the right position in the playlist.

Unavailable clips are shown on the VGA monitor but not on the LCD of the remote.

The operator can decide to definitively remove the unavailable clips from all local playlists by using the **Clr Unav.** function (**SHIFT+B**) in Playlist Edit mode. Note that this function is only visible when unavailable clips are present and with Split Audio Editing turned off.

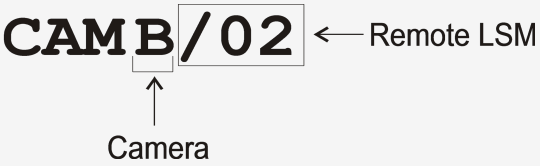
8.8. Creating Local Clips with Remote Record Trains

In the Remote Panel Interface

To create local clips with remote record trains, proceed as follows:

1. Select the Record mode in the Network menu.
2. Select the remote EVS server in the list. The LCD display returns to the normal mode
3. Press the **RECORD** key to select the Live mode. A two to three-second delay to Live has been defined to ensure safe operations.
4. Use the JOG key to go in search mode.
5. Change camera angles if necessary. Changing camera angles on network train will always switch in pause on the new camera. Refer to the note below about the remote camera name.
6. Press the **IN** key to mark your Short IN point of the clip.
7. Search the Short OUT point and press the **OUT** key to mark it.
8. Select the clip location to store and press the corresponding **F_ key**.

The label of the remote camera is different in order to identify it easily.



The key flashes during transfer. When the key lights green, the transfer is completed and the clip is available for playback from the local system.

8.9. Disconnecting from XNet

When you work on the XNet network and exit Multicam, the system checks if other systems are still connected to your server.

If this is the case, the following message appears:

```
 Other users are connected to your LSM
  on XNet network. Are you really sure
that you want to close the Multicam
application ?

[ESC]=CANCEL                [ENTER]=YES
```

- Press **ESC** to cancel the command and return to the application.
- Press **ENTER** to exit the Multicam application.

9. Advanced Control Modes

9.1. Split Screen Mode

9.1.1. Introduction

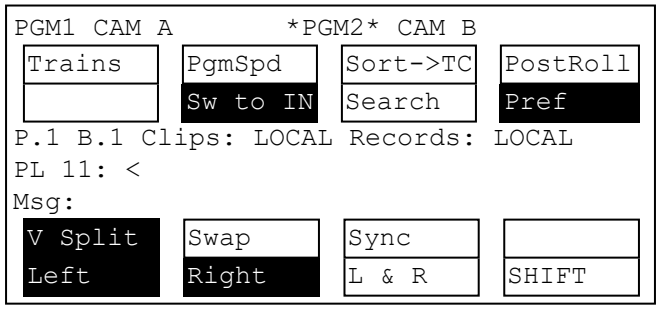
The Split Screen mode is a software option that allows a simple split screen effect on PGM 1. This mode operates very similarly to the 2PGM mode, except that the two outputs are left and right parts of the screen (**vertical split screen**) or top and bottom parts of the screen (**horizontal split screen**) or mixed together on the entire screen (**split mix mode**).

The Split Screen mode also allows for DVE-like adjustment of the video within the split effect, for optimum positioning of the material.

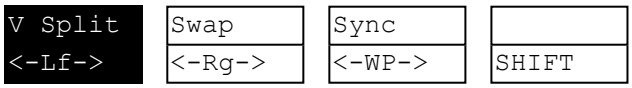
The split screen mode is available with some limitations listed in the Server Configuration manuals, in the section on the **Split Screen feature**.

9.1.2. Using Vertical Split

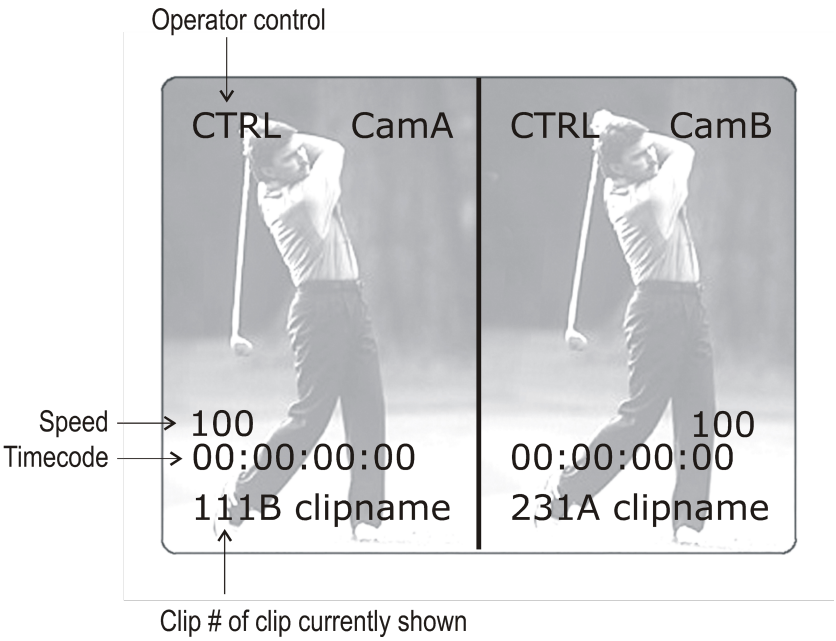
The Vertical Split function is controlled from the Remote Panel:



Press **D** to switch between normal and special commands:



Screen Description



Commands Description

Command	Description
V SPLIT / H SPLIT	Toggles between horizontal and vertical Split screen menus
Swap	To swap sources from both sides
Sync	To synchronize the selected PGM with the other one. Press this button and select the PGM to use as a reference.
Left	To control the left part of the monitor
Right	To control the right part of the monitor
L & R	To control both sides together
D	Access / Exit special commands
<–Lf–>	To center the left picture
<–Rg–>	To center the right picture
<–WP–>	To move the separation line

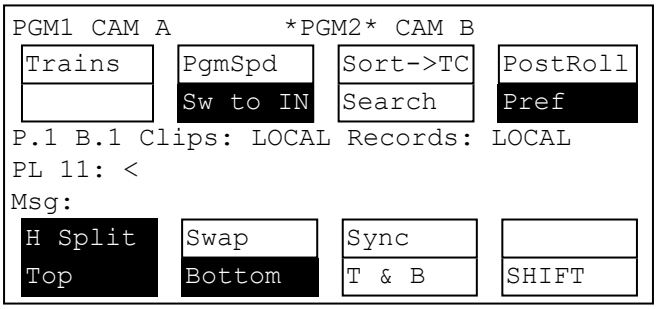
- Press the **Left** key to take control of the left side of the screen, and recall the desired clip for this side. Use the command knob to search inside the clip until the desired picture is reached.
- Press the **Right** key to take control of the right side of the screen, and repeat the same operation with the clip you want to display on the right side.

- You can also shift horizontally the clips on both sides, so that the action is in the center of the picture.
- Press D to enter this mode. The menu will change, as shown above.
- Press the <–Lf–> key, and move the command knob to center the left side picture.
- Press the <–Rg–> key and do the same operation for the right side picture.
- To restore the default positions, press CLEAR+<–Lf–> and CLEAR+<–Rg–> .
- Press the <–WP–> key to move the border. To restore the default position of the border press CLEAR+<–WP–> .
- To exit the mode, press D again.

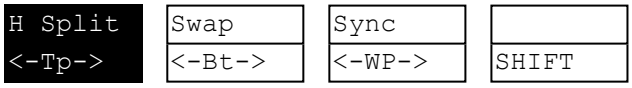
If working in network mode, split screen can be performed on remote clips as well as on local clips.

9.1.3. Using Horizontal Split

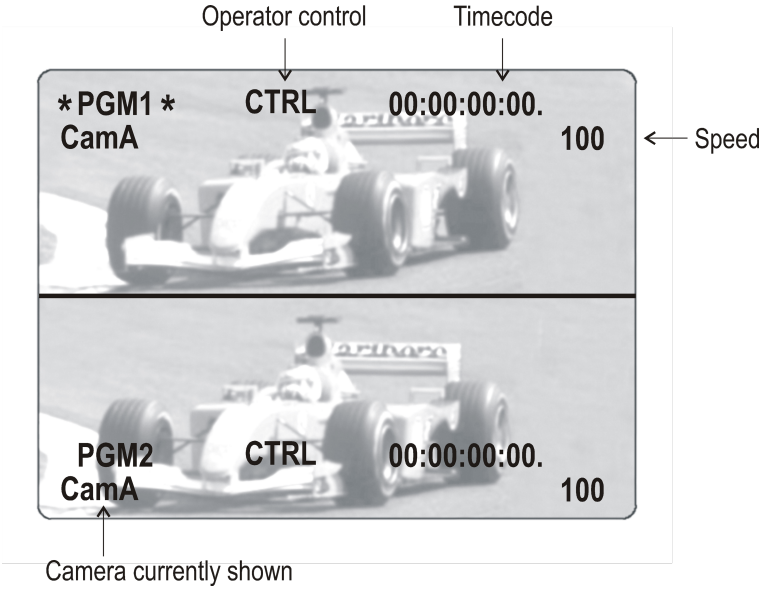
The Horizontal Split function is controlled from the Remote Panel:



Press D to switch between normal and special commands:



Screen Description



Commands Description

Command	Description
V SPLIT / H SPLIT	Toggles between horizontal and vertical Split screen menus
Swap	To swap sources from both sides
Sync	To synchronize the selected PGM with the other one. Press this button and select the PGM to use as a reference.
Top	To control the upper part of the monitor
Bottom	To control the lower part of the monitor
T & B	To control both sides together
D	Access / Exit special commands
<–Tp–>	To center the top picture
<–Bt–>	To center the bottom picture
<–WP–>	To move the separation line

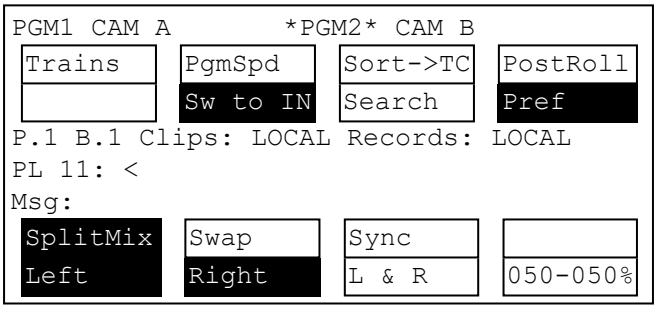
- Press the **Top** key to take control of the upper side of the screen, and recall the desired clip for this side. Use the command knob to search inside the clip until the desired picture is reached.
- Press the **Bottom** key to take control of the lower side of the screen, and repeat the same operation with the clip you want to display on this side.
- You can also shift vertically the clips on both sides, so that the action is in the centre of the picture.
- Press **D** to enter this mode. The menu will change, as shown above.

- Press the <–Tp–> key, and move the command knob to centre the upper side picture.
- Press the <–Bt–> key and do the same operation for the lower side picture.
- To restore the default positions, press CLEAR+<–Tp–> and CLEAR+<–Bt–> .
- Press the <–WP–> key to move the border. To restore the default position of the border press CLEAR+<–WP–> .
- To exit the mode, press D again.

If working in network mode, split screen can be performed on remote clips as well as on local clips.

9.1.4. Using Mixed Split

The Mixed Split function is controlled from the Remote Panel:



This mode works similar to the Horizontal and the Vertical Split modes, except that there is no position adjustment since both pictures are shown full frame.

The D key allows the operator to adjust the mix percentage between the two sources. Press D to highlight the function, then move the lever to adjust the mix level between the two sources.

9.2. Hypermotion Mode

9.2.1. Activating and Accessing the Hypermotion Mode

Definition

The Hypermotion mode allows the server to control a hypermotion camera. Such cameras record images at a frame rate much higher than standard cameras.

They record a buffer of images in an internal memory. This buffer can then be ingested into an EVS server via the standard SDI connection. In doing so, a hypermotion camera is considered as a standard camera by the server.

When the EVS server works in hypermotion mode, it must run a Multicam LSM configuration.

The aim of the hypermotion mode is to enable the use of a standard EVS Remote to control the hypermotion camera. Though most commands are identical for such cameras, the last part of this chapter lists some of the supported cameras model along with their specific features.

Activating the Hypermotion Mode

To access the hypermotion mode, you should ensure that:

- The license code 20 required for the hypermotion mode is activated. For more information on this required license key, contact the Support or Sales team.
- The **Hypermotion** parameter is activated in the Operational Setup menu of the remote (p.11.1 F1), or see the EVS Server Configuration manual.
- You have correctly selected the number of remotes in the main menu according to the **Remote mode** parameter defined in the Operational Setup menu of the remote (p.11.1 F3), or see the EVS Server Configuration manual.

  Depending on the selected **Remote mode**, you will control the hypermotion camera only or the hypermotion camera and a PGM of the server.

Accessing and Leaving the Hypermotion Mode

To access the hypermotion menu, press **SHIFT+D** (**HyperMo**) in your Remote Panel menu.

To leave the hypermotion menu or switch to the PGM control, press again **SHIFT+D** in the operational menu.

In hypermotion+LSM mode, the **SHIFT+D** key displays LSM Mode.

9.2.2. Controlling the Hypermotion Camera

Key Commands on the Remote Panel

Introduction

This section presents the various commands you can use on the Remote Panel to control the hypermotion camera. When available, the corresponding key on the hypermotion camera is mentioned.

The standard behavior, applicable to all cameras, is explained in this table. When a given camera has a specific behavior, this is specified in the section dedicated to the camera itself.

PLAY

This key corresponds to the 'Play' command on the hypermotion camera.

Pressing this key initiates a replay from the first available frame on the current memory block.

The corresponding **CAM** key flashes green to indicate the playback status.

During the playback, the material played on the hypermotion camera is recorded into the server via the SDI connection.

SHIFT + PLAY

There is no corresponding command on hypermotion cameras.

Pressing this key combination initiates a replay on the current memory block at the speed defined in the **PGMSpeed** parameter.

Pressing again **PLAY**, **SHIFT+PLAY**, or **PRV CTL** returns to the normal playing speed.

The corresponding **CAM** key flashes green to indicate the playback status.

Mark

This key corresponds to the 'Mark Cue Point' command on the hypermotion camera.

Pressing this key marks a cue point on the current block. You can mark up to 255 cue points on a memory block.

This function is not available on all cameras with multiple-block memory.

Last Cue

This key corresponds to the 'Search' command on the hypermotion camera.

The Last Cue key can have several behaviors:

- If the Cues parameter is set to **Off**, the cue points are not managed. In this case, the **Last Cue** button allows users to perform one of the following actions:
  - launching a play command at the speed defined in the **Last Cue** parameter
  - launching a play command in **Ramp up** mode, when this mode is defined in the **Last Cue** parameter.
- If the Cues parameter is set to **On**, the cue points are managed. In this case, the **Last Cue** button allows users to perform one of the following actions:
  - going to the previous cue point of the current memory block when cue points have been defined on the current block.
  - stopping the recording and going back to the first recorded frame of the current memory block when no cue points have been defined on the current block.

  The frame is loaded, but the camera does not start playing.

See section "Managing Cue Points" on page 210

RECORD

This key corresponds to the 'ARM' or 'REC' commands on hypermotion cameras.

The different behaviors are possible, depending on various conditions:

- In single-block memory, pressing this key deletes the material recorded on the camera and starts the recording process on the camera.
- In multiple-block memory:
  - When you press **RECORD** after selecting the block number you want to work with, all A/V material recorded on the memory block(s) of the camera is deleted, and the camera starts recording on the first block.
  - When you press **RECORD** subsequently and a memory block is selected, the recording starts on the currently selected memory block, and its content is deleted.
  - When you press **RECORD** subsequently and no memory block is selected, all A/V material recorded on the memory block(s) of the camera is deleted, and the camera starts recording on the first block.
  - When you press **RECORD** subsequently and the selected memory block is recording, the behavior differs from one camera to the other. Refer to the chapter dedicated to the camera itself.

TAKE

This key corresponds to the 'Trig/Stop Rec' command on hypermotion cameras.

With a single-block memory or when the last block is reached, press **TAKE** to stop the recording.

With a multiple-block memory, pressing **TAKE** induces the following actions:

- The recording stops on the current block.
- The material on the current block is loaded on the camera in play mode.
- The recording starts on the next empty block, if available. If no empty block is left, the recording stops.

Lever

There is no corresponding command on hypermotion cameras.

Press the **Lever** key to shift to the secondary lever range (defined in the **2nd Lever** parameter in the hypermotion secondary menu) for material played out using the hypermotion feature.

CAM Keys

When you press a **CAM** key corresponding to a recorded block, this loads the last recorded frame of the selected block in play mode.

When you press a **CAM** key corresponding to a block in REC, this loads the last recorded frame of the selected block in play mode, and the recording starts on the next empty block, if available.

When you press a **CAM** key corresponding to an empty block, the remote beeps.

CLEAR

Press the **CLEAR** key to clear the recorded material on a block. It can be used in the following ways:

- To clear the record on a given block that is not in PLAY mode, press **CLEAR** and the **CAM** key corresponding to the requested block.
- To clear the record on a block when the block is in PLAY mode, press **CLEAR**. The PLAY is stopped, the recorded material is deleted from the block, and the camera automatically starts recording again in this block if it is not recording on any other block yet.

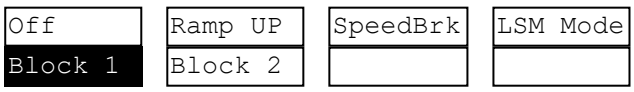
The **CLEAR** button is only active on some cameras.

LCD Menu on the Remote Panel

Hypermotion Main Menu

The hypermotion main menu displays the memory blocks that have been selected in the **# Blocks** parameter of the hypermotion secondary menu. The memory blocks use is described later in this chapter.

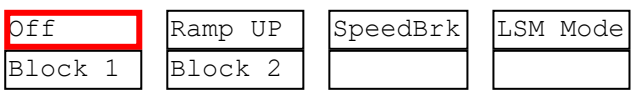
Only the activated blocks will be displayed and the highlighted block is the one the operator is currently working on.



Cues Parameter

This parameter allows you to activate the cue management in hypermotion mode.

The default value of the Cues parameter is **On**.



Last Cue Parameter

The Last Cue parameter defines the **Last Cue** button function when the **Cues**parameter is **Off**.

Off	Ramp UP	SpeedBrk	LSM Mode
Block 1	Block 2		

- The Last cue parameter can be set to Ramp Up (the default value):
  - The first time the **Last Cue** button is pressed, the speed is increased starting from the PGMSpeed until the maximum speed is reached. This maximum speed depends on the camera model.
  - Whenever the **Last Cue** button is pressed again, the speed is increased starting from the last speed used until the maximum speed is reached.
- The **Last Cue** parameter can be set to an individual speed (the available values depends on the camera model).

- When Cues is set to **Off**, the cam key is displayed in black and the **Mark** button is inactive.
- When Cues is set to **Off** and Last Cue is set to **Ramp Up**, press **Clear+Last Cue** to reset the speed to PGMSpeed.

Speedbreak Parameter

When the Speedbreak functionality is available, it will be displayed as illustrated.

Press the corresponding key to activate (highlighted) or deactivate it (normal display).

Off	Ramp UP	SpeedBrk	LSM Mode
Block 1	Block 2		

See section "Using Speedbreak" on page 214

Currently, the Speedbreak functionality is available only for Vision Research and NAC Hi-Motion II cameras.

Hypermotion Secondary Menu

From the hypermotion main menu, press the **MENU** key to open the hypermotion secondary menu illustrated hereunder.

# Blocks	Pre-Roll	PGMSpeed	2ndLever
2	00s10fr	50%	+- 1000

This secondary menu includes the hypermotion settings described in the table below. To modify a setting, press the corresponding softkey and jog to select the requested value.

The default setting value is specified in the table. As the value range often vary from one to the other camera, the available values are listed in the camera-specific chapter. See section "Specific Camera Features" on page 215.

Setting	Description
# Blocks	Number of memory blocks of the hypermotion camera to be used, if the connected camera supports this feature. The number of blocks displayed in the main menu depends on the number of blocks specified in this parameter. 1 to 4 memory blocks can be used (default: 1).
Pre-Roll	Length of the preroll for the cue points defined on the material recorded from the hypermotion camera. The **Last Cue** command will go to the desired TC - preroll if the material is available. If not, the preroll is not applied.
PGMSpeed	PGM speed that is to be applied for playing back material recorded on the hypermotion camera using the **SHIFT+PLAY** keys.
2ndLever	Secondary lever range to be applied for playing back material recorded on the hypermotion camera.

Creating a Clip from a Hypermotion Camera

When the camera is replaying its content into the EVS server, you can clip it automatically directly from the remote controlling the camera.

Use the **IN** and **OUT** keys and the **F_ keys** to clip the record train corresponding to the hypermotion camera and to store it at a clip position. So you can clip the hypermotion camera without having the control on a PGM, and without having to wait for all the content to be recorded on the server.

Once you have played back the material recorded in the hypermotion camera, it is available in the record train of the camera as defined in the **Recorder** setting (p6.4, F2). You can now create clips with this material.

To do this, proceed as follows:

1. Come back to the LSM mode with **SHIFT+D** (with remote in hypermotion+LSM mode) or use another remote (with remote in hypermotion only mode).
2. Load the relevant record train on the PGM.
3. Jog in the material and add a MARK IN, MARK OUT as usual to create the requested clip.

Managing Cue Points

When the controller controls the camera, press **Mark** to define and set up to 255 cue points. You can add the cue points on the current block in record mode.

When the **Cues** parameter is set to **On**, you can press the **Last Cue** key to call back the cue points. As cue points are managed by block, select first the requested block to be able to recall the cue points defined in this block.

Refer to the following topics for more information on cue point management:

- "LCD Menu on the Remote Panel" on page 207
- "Key Commands on the Remote Panel" on page 204
- Specific features of each camera model for more information on cue point management.

Managing Memory Blocks

Defining the Number of Memory Blocks

Some cameras allow the users to split the memory into several blocks of the same size. Before recording material on the hypermotion camera, you should specify how many memory blocks you are going to use (1, 2, 3, or 4 blocks). By default, only one memory block is defined.

When using more than one memory block, the blocks are considered as independent units. That means that you have to manually shift from one block to the other to continue recording on the next block.

To define the number of memory blocks on a hypermotion camera, proceed as follows:

1. In the hypermotion menu, press **MENU** to open the secondary menu.
2. Press **A** to activate the **# Blocks** field. This field specifies into how many memory blocks the camera memory will be split.
3. Jog to select the number of blocks (1 to 4).
4. Press **MENU** again to validate your choice and come back to the hypermotion main menu.

The camera memory is now split into the requested number of blocks, all with the same size. The **A** to **D** CAM keys now correspond to the 1 to 4 memory blocks respectively.

Color Code for Memory Block Status

The memory blocks status are displayed using a common color code both directly on the corresponding CAM keys on the LSM Remote Panel, and on the OSD monitoring of the recorder corresponding to the hypermotion camera.

On the OSD monitoring, the block system is displayed as a suite of 4 squares, ■■■■, each corresponding to a memory block.

The common color code is as follows:

Color	CAM Key	Block Symbol	Memory Block Status
Steady white	Block 1	1	Empty block
Steady green	Block 1	or 2	Recorded block
Blinking green	Block 1		Block in PLAY
Steady red	Block 1		Block in REC
Steady green	Block 1	<key>	Block in REC
Blinking green	Block 1	<key>	Block in REC

[1] Empty transparent square.

[2] White square for the Hi-Motion I Camera only.

Working with Single-Block Memory

The general recording and playback process when controlling the camera using a single-block memory is the following:

1. Start the recording on the camera by pressing **RECORD** on the remote controlling the hypermotion camera.
2. During the recording, you can set cue points (up to 255) on the recorded material by pressing **Mark**.
3. Stop the recording in one of the following ways:
   - Press **Last cue** to position the camera on the previous cue, taking the preroll into account.
   - Jog the dial to position the camera on the requested image.
   - Press **TAKE** to stop the recording.
4. Press **PLAY** to start the playback.

During the playback, the material played on the hypermotion camera is recorded into the server via the SDI connection.

Working with Multiple-Block Memory

The general recording and playback process when controlling the camera using a multiple-block memory is the following:

1. Press the **A** to **D** CAM key corresponding to the memory block (1 to 4) on which you want to record the material.
2. Start the recording on the camera by pressing **RECORD** on the Remote Panel controlling the hypermotion camera. The material starts recording in loop mode on a memory block.
    - If you press **RECORD** for the first time after selecting the requested block number, all memory blocks are erased and the recording starts on the first one.
    - If you press **RECORD** subsequently and a block is selected, the recording starts on the currently selected memory block.
    - If you press **RECORD** subsequently but no block is selected, the recording starts on the first available block.
3. Press **TAKE** to stop recording on the current block and start recording on the first free block, if available.
4. Stop the recording in one of the following ways:
    - Press **Last cue** to position the camera and cue to the first recorded frame of the block.
    - Jog the dial to position the camera on the requested image.
    - Select another block, to load the first frame recorded on this block in play mode.
5. Press **PLAY** to start the playback.

During the playback, the material played on the hypermotion camera is recorded into the server via the SDI connection.

Example

The following steps provide an example for a typical use of the LSM Remote commands with a hypermotion camera:

As the general behavior of some keys differs with the FOR-A FT-One camera, a specific example has been added to the section dedicated to this camera. See section " FOR-A FT-One Camera" on page 217

1. Initially, the blocks are recorded or empty

Block 1	Block 2	Block 3	Block 4

2. Press RECORD on the remote to delete any recorded material on the blocks and start the recording in loop mode on block 1 (first use of this key).

Block 1	Block 2	Block 3	Block 4

3. Press TAKE to stop recording on the current block, and start recording on the next available one (block 2). At the same time, the playback starts on block 1.

4. Press CLEAR to stop the playback on block 1 and delete the material recorded on that block. As the block 2 is being recorded, no record is started on block 1.

5. Press TAKE to stop the record on Block 2 and start it on the first available block (block 1). Playback starts on block 2.

6. Press TAKE again to stop the record on block 1 and start it on the first available block (block 3). The running playback on block 2 is not affected.

7. Press CAM A to cue block 2 at the beginning, and load the last recorded frame on block 1 in play mode. The record carries on on block 3.

8. Press CAM C to stop the recording on block 3 and start it on the first available block (block 4). The last recorded frame on block 3 is loaded in play mode.

9. Press TAKE to stop the record on block 4. As no free block is available, the recording does not start on another block.

10. Press CLEAR to stop the play on block 3, delete the material on block 3 and start recording on block 3.

11. Once block 3 has been recorded, the record ends as all the other blocks contain recorded material.

Using Speedbreak

The Speedbreak Functionality

Because hypermotion cameras record a lot more pictures than classical cameras, it is not efficient to review everything in slow motion. Operators often adapt the speed during replay: faster before the action they want to see on air, then slower during the action to fully benefit from the hypermotion recording, then again faster after the action.

The Speedbreak functionality has been developed to ease this process by identifying beforehand the points where the speed should change.

How to Use Speedbreak

1. Make sure the Speedbreak mode is active on the Remote Panel (See section "LCD Menu on the Remote Panel" on page 207).
2. Call a sequence back by pressing the **CAM** key of the requested block (for example).

   Previously introduced IN/OUT points are not taken into account when you are playing the sequence with the jog.
3. Jog in the sequence and define an IN point (compulsory) and an OUT point (optional) with the IN and OUT keys.

   If required, delete these points using the **CLEAR** + **IN/OUT** keys.
4. Start the replay using the **PLAY** button or the lever.
   - If a speed is defined on the Remote Panel, the replay starts at this defined speed.
   - If not, the replay starts at **PGMSpeed**.

The replay in Speedbreak mode is thus performed at the following speed

- Before the IN point: speed defined on the Remote Panel or **PGMSpeed**.
- Between the IN and the OUT points: nominal speed.
- After the OUT point: speed defined on the Remote Panel or **PGMSpeed**.

Managing IN and OUT Points

When the Speedbreak functionality is active:

- IN and OUT points are displayed on the OSD of the hypermotion recorder.
- IN and OUT points are memorized per block.

- IN and OUT points are deleted when:
  - A block is recorded again.
  - The number of blocks is modified.
  - The configured connection type or port is modified.
  - Multicam is restarted.

9.2.3. Specific Camera Features

Introduction

The subsections below describe the differences and variations of several camera models against the standard features described previously in this chapter.

The following sections are based on the manufacturer's camera name. The table below provides a direct access to the specific sections based on the commercial names of the cameras:

Commercial Name	Manufacturer
Antelope	Vision Research
FASTCAM	Photron
FOR-A VFC-7000	FOR-A
FOR-A FT-One	FOR-A
Hi-Motion I	ARRI
Hi-Motion II	NAC/Ikegami
Sprintcam	Vision Research
Superloupe	Vision Research
Vision Research	Vision Research
X-Mo	Vision Research

FOR-A VFC-7000 Camera

Application Start

At application start, the recording starts on the first memory block.

Parameter Values

The tables below list the parameter value, or value range that are specific to the camera.

The configuration parameters are defined in the Multicam Configuration window, Operation page, Hypermotion controller section.

Configuration Parameter	Value
Port	Ethernet
Protocol	UDP

The operational parameters are defined in the Hypermotion mode of the Remote Panel, in the LCD secondary menu.

Operational Parameter	Value Range	Default Value
# Blocks	1 to 4	1
Pre-Roll	from 00s00fr to 5s00fr	00s00fr
PGMSpeed	50, 100, 200, 400%	100
2nd Lever	+/- 1000%, 0-1000%	+/- 1000

Specific Behavior of Remote Panel Keys

- RECORD: Pressing this key while the current block is recording clears all memory blocks and starts recording on the first one.
- RECORD: The Remote beeps if the CAM key refers to an empty block.
- TAKE: This key is operational in ARM mode.
- CLEAR: Pressing this key deletes the current memory block data.

Cue Points Management

The cue points are only operational when all memory blocks have been recorded once.

- When a new ARM/REC command is issued on a block, all its cue points are cleared.
- If the **Last Cue** command cannot access the desired TC preroll, the player remains on the current cue point.
- If the **Last Cue** command refers to a TC that does not exist anymore, the key beeps but the OSD still displays the number of the cue that you wanted to go to.
- Cue points can be marked across several blocks but the recall is limited to the currently selected block.

  Example:

  - While recording on memory block 1, mark cue points 1, 2, and 3 on memory block 1.
  - Press **TAKE** to start recording on block 2 and mark cue points 1, 2, and 3.
  - Press **TAKE** and select memory block 2. The **Last Cue** command scrolls through the cue points of block 2.
  - To go through cue points of another block, select that block first, then press **Last Cue**.
- On OSD, the first information, displayed in white, refers to the cue points on the playing block while the second information, displayed in red, refers to the recording block.

FOR-A FT-One Camera

Application Start

At application start, when the block numbers has been selected, the camera automatically starts recording on the first memory block.

Parameter Values

The tables below list the parameter value, or value range that are specific to the camera.

The configuration parameters are defined in the Multicam Configuration window, Operation page, Hypermotion controller section.

Configuration Parameter	Value
Port	Ethernet
Protocol	UDP

The operational parameters are defined in the Hypermotion mode of the Remote Panel, in the LCD secondary menu.

Operational Parameter	Value Range	Default Value
# Blocks	1 to 4	1
Pre-Roll	from 00s00fr to 5s00fr	00s00fr
PGMSpeed	50, 100, 200, 400, 800, 1600%	100
2nd Lever	+/- 1600%, 0-1600%	+/- 1000

Specific Behavior of Remote Panel Keys

- RECORD: Pressing this key when no block is in RECORD and no block is selected starts recording on the first block. Previously recorded material remains unchanged.
- RECORD: Pressing this key while the current block is recording clears all memory blocks in play or recorded state. The material on the current recording block is not deleted. It is moved to the first block, and the camera starts recording on the next empty block (block 2).
- RECORD: The Remote beeps if the CAM key refers to an empty block.
- TAKE: This key is operational in REC STANDBY mode. When the user presses the TAKE key, if a block was in play mode, it remains in this mode. If no block was in play mode, the previous recording block starts playing.
- CLEAR (+CAM key): Pressing the CLEAR key deletes the data on the memory block that is in PLAY (or on the selected block) and shifts the recording block to the left.

Cue Points Management

The cue points are only operational when all memory blocks have been recorded once.

- When a new ARM/REC command is issued on a block, all its cue points are cleared.
- If the Last Cue command cannot access the desired TC preroll, the player remains on the current cue point.
- If the Last Cue command refers to a TC that does not exist anymore, the key beeps but the OSD still displays the number of the cue that you wanted to go to.

- Cue points can be marked across several blocks but the recall is limited to the currently selected block.

  Example:

  - While recording on memory block 1, mark cue points 1, 2, and 3 on memory block 1.
  - Press **TAKE** to start recording on block 2 and mark cue points 1, 2, and 3.
  - Press **TAKE** and select memory block 2. The **Last Cue** command scrolls through the cue points of block 2.
  - To go through cue points of another block, select that block first then press **Last Cue**.
- On OSD, the first information, displayed in white, refers to the cue points on the playing block while the second information, displayed in red, refers to the recording block.

Memory Block Management

General Principle

On the FOR-A FT-One camera, the blocks that are freed up are moved to the left. Therefore, we can consider that the general principle for block management is the following:

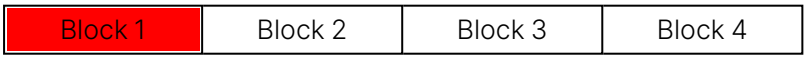
- The recorded blocks are found in first position(s).
- The recording blocks are found after the recorded blocks.
- The empty blocks come in last position.

Example

The following steps provide an example for a typical use of the LSM Remote commands with a hypermotion camera:

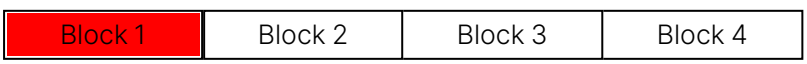
1. Initially, the blocks are recorded or empty

2. Press RECORD on the remote to delete any recorded material on the blocks and start the recording in loop mode on block 1 (first use of this key).



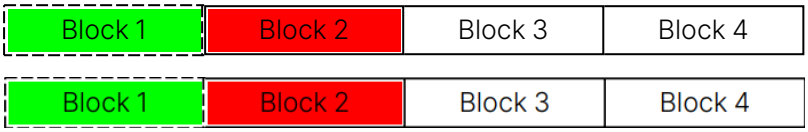
3. Press TAKE to stop recording on the current block, and start recording on the next available one (block 2). At the same time, the playback starts on block 1.

4. Press CLEAR to stop the playback on block 1 and delete the material recorded on that block. Block 2 is still recording, and becomes block 1.



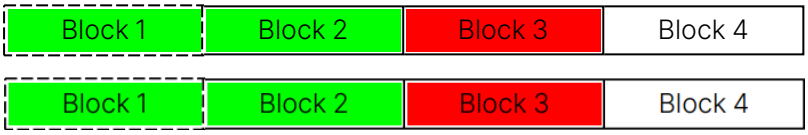
5. Press TAKE to stop the record on block 1 and start the record on the first empty block (block 2). Playback starts on block 1.

6. Press CAM D. The Remote beeps because the block is empty.

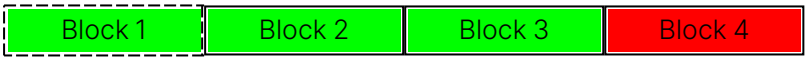


7. Press TAKE again to stop the record on block 2 and start it on the first available block (block 3). The running playback on block 1 is not affected.

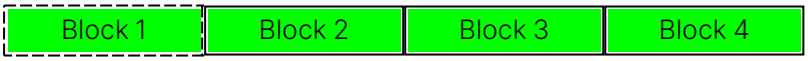
8. Press CAM A to cue up block 1 at the beginning. The record carries on on block 3.



9. Press TAKE to stop the recording on block 3 and start it on the first available block (block 4).



10. Press TAKE to stop the record on block 4. As no free block is available, the recording does not start on another block.



11. Press CLEAR +C to delete the material on block 3. Block 4 shifts to the left (becomes block 3). Recording starts on block 4.

12. Once block 4 has been recorded, the record ends as all the other blocks contain recorded material.

Hi-Motion I Camera

Camera Names

The cameras manufactured by ARRI are sold as Hi-Motion I cameras on the market.

Application Start

At application start, this camera is in ARM mode and the recording starts on the first memory block.

Parameter Values

The tables below list the parameter value, or value range that are specific to the camera.

The configuration parameters are defined in the Multicam Configuration window, Operation page, Hypermotion controller section.

Configuration Parameter	Value
Port	RS422
Protocol	Sony 9-PIN

The operational parameters are defined in the Hypermotion mode of the Remote Panel, in the LCD secondary menu.

Operational Parameter	Value Range	Default Value
# Blocks	1 to 4	1
Pre-Roll	from 00s00fr to 5s00fr	00s00fr
PGMSpeed	50, 100, 200, 300, 400,1000%	100
2nd Lever	+/- 1000%, 0-1000%	+/- 1000

Specific Behavior of Remote Panel Keys

- RECORD: The Remote does not beep if the CAM key refers to an empty block.
- RECORD: Pressing this key while the current block is recording does not send any command to the camera.
- TAKE: This key is operational in ARM mode.
- CLEAR: This key has no effect.

Cue Points Management

- When a new ARM/REC command is issued on a block, all its cue points are cleared.
- Cue points can only be marked when working with single-block memory.
- If the Last Cue command cannot access the desired TC preroll, the player remains on the current cue point.
- If the Last Cue command refers to a TC that does not exist anymore, the player jumps to the beginning of the current memory block.

Hi-Motion II Camera

Camera Names

The cameras manufactured by NAC/Ikegami are sold as Hi-Motion II cameras on the market.

Application Start

At application start, this camera is in ARM mode and the recording starts on the first memory block.

Parameter Values

The tables below list the parameter value, or value range that are specific to the camera.

The configuration parameters are defined in the Multicam Configuration window, Operation page, Hypermotion controller section.

Configuration Parameter	Value
Port	RS422
Protocol	Sony 9-PIN

The operational parameters are defined in the Hypermotion mode of the Remote Panel, in the LCD secondary menu.

Operational Parameter	Value Range	Default Value
# Blocks	1 to 4	1
Pre-Roll	from 00s00fr to 5s00fr	00s00fr
PGMSpeed	50, 100, 200, 300, 400,1000%	100
2nd Lever	+/- 1000%, 0-1000%	+/- 1000

Specific Behavior of Remote Panel Keys

- RECORD: The Remote beeps if the CAM key refers to an empty block.
- RECORD: Pressing this key while the current block is recording does not send any command to the camera.
- TAKE: This key is operational in ARM mode.
- CLEAR: Press this key to delete the current memory block data.

- **CAM key**: When the CAM key is pressed for the first time after selecting the number of blocks you want to work with, the block is loaded at the frame specified in the camera menu. When the CAM key is pressed subsequently, the block is loaded at the last frame it was last loaded on.
- **ENTER + CAM key**: Locks the corresponding memory block.

TAKE Key Behavior

Depending on the operational mode of the Hi-Motion II camera, the **TAKE** key will behave differently, as explained below:

- In **Continuous** mode, when the **TAKE** key is pressed, the record stops on the current block and starts on the next free block. Pressing **TAKE** on the last block stops the recording. This corresponds to the standard behavior.
- In **Loop** mode, when the **TAKE** key is pressed, the record stops on the current block and starts on the next free block. When the **TAKE** key is pressed on the last block, the recording starts again on the first block.
- In **Single** mode, when the **TAKE** key is pressed, the record stops on the current block. No record is started on another block.

Cue Points Management

- When a new ARM/REC command is issued on a block, all its cue points are cleared.
- If the **Last Cue** command cannot access the desired TC preroll, the player remains on the current cue point.
- If the **Last Cue** command refers to a TC that does not exist anymore, the player jumps to the beginning of the current memory block.
- Cue points can be marked across several blocks but the recall is limited to the currently selected block.

  Example:

  - While recording on memory block 1, mark cue points 1, 2, and 3 on memory block 1.
  - Press **TAKE** to start recording on block 2 and mark cue points 1, 2, and 3.
  - Press **TAKE** and select memory block 2. The **Last Cue** command scrolls through the cue points of block 2.
  - To go through cue points of another block, select that block first then press **Last Cue**.
- On OSD, the first information, displayed in white, refers to the cue points on the playing block while the second information, displayed in red, refers to the recording block.

Photron Camera

Camera Names

The cameras manufactured by Photron are sold under the following product name:

- FASTCAM

Application Start

At application start, this camera is in ARM mode and the recording starts on the first memory block.

Parameter Values

The tables below list the parameter value, or value range that are specific to the camera.

The configuration parameters are defined in the Multicam Configuration window, Operation page, Hypermotion controller section.

Configuration Parameter	Value
Port	RS422
Protocol	Sony 9-PIN

The operational parameters are defined in the Hypermotion mode of the Remote Panel, in the LCD secondary menu.

Operational Parameter	Value Range	Default Value
# Blocks	1 to 4	1
Pre-Roll	from 00s00fr to 5s00fr	00s00fr
PGMSpeed	50, 100, 200, 300, 400,1000%	100
2nd Lever	+/- 1000%, 0-1000%	+/- 1000

Specific Behavior of Remote Panel Keys

- RECORD: Pressing this key while the current block is recording does not send any command to the camera.
- RECORD: The Remote beeps if the CAM key refers to an empty block.
- TAKE: This key is operational in ARM mode.
- CLEAR: This key has no effect.

Cue Points Management

- When a new ARM/REC command is issued on a block, all its cue points are cleared.
- If the **Last Cue** command cannot access the desired TC preroll, the player remains on the current cue point.
- If the **Last Cue** command refers to a TC that does not exist anymore, the player jumps to the beginning of the current memory block.
- Cue points can not be marked when working on several memory blocks.

Vision Research Camera

Camera Names

The Vision Research cameras are also sold under the following product names:

- Vision Research
- X-Mo
- Superloupe
- Antelope
- Sprintcam

Camera Models

This section applies to the following Vision Research camera models:

- Phantom V642
- Miro Series
- Phantom Flex4K

Application Start

At application start, the recording does not start automatically.

Parameter Values

The tables below list the parameter value, or value range that are specific to the camera.

The configuration parameters are defined in the Multicam Configuration window, Operation page, Hypermotion controller section.

On Vision Research cameras, two protocols can be used, each with a different port:

Values	Port	Protocol
Value set 1	RS422	ASCII
Value set 2	Ethernet	TCP

The operational parameters are defined in the Hypermotion mode of the Remote Panel, in the LCD secondary menu.

Operational Parameter	Value Range	Default Value
# Blocks	1 to 4	1
Pre-Roll	from 00s00fr to 5s00fr	00s00fr
PGMSpeed	50, 100, 200, 300, 400,1000%	100
2nd Lever	+/- 1000%, 0-1000%	+/- 1000

Specific Behavior of Remote Panel Keys

- RECORD: Pressing this key while the current block is recording clears all memory blocks and starts recording on the first one.
- RECORD: The Remote beeps if the CAM key refers to an empty block.
- TAKE: This key is operational in any mode.
- CLEAR: Press this key to delete the current memory block data.

Cue Points Management

- When a new ARM/REC command is issued on a block, all its cue points are cleared.
- If the Last Cue command cannot access the desired TC preroll, the player remains on the current cue point.
- If the Last Cue command refers to a TC that does not exist anymore, the key beeps but the OSD still displays the number of the cue that you wanted to go to.

- Cue points can be marked across several blocks but the recall is limited to the currently selected block.

  Example:

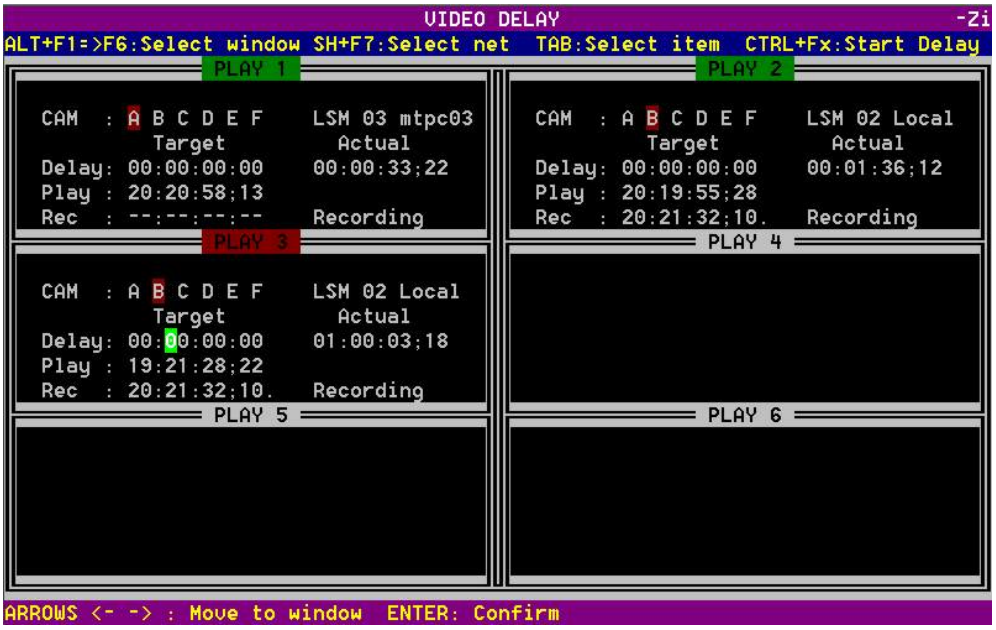
  - While recording on memory block 1, mark cue points 1, 2, and 3 on memory block 1.
  - Press **TAKE** to start recording on block 2 and mark cue points 1, 2, and 3.
  - Press **TAKE** and select memory block 2. The **Last Cue** command scrolls through the cue points of block 2.
  - To go through cue points of another block, select that block first then press **Last Cue**.
- On OSD, the first information, displayed in white, refers to the cue points on the playing block while the second information, displayed in red, refers to the recording block.

9.3. Video Delay

Multicam is able to manage up to 6 channels in a Video Delay configuration.

When Multicam has been configured with a base configuration called **Video Delay** in the Channels settings, the Delay screen appears automatically when the application is started. In this case, all play channels will be available from the Delay screen.

If Multicam is running a base configuration different than Video Delay, this screen can be called manually from the Clip screen, Playlist screen or Network screen by pressing **SHIFT+F7** on the keyboard. In this case, only the play channels assigned to user #1 (i.e. the 1st EVS Remote Panel if the base configuration is LSM, or the 1st protocol if the base configuration is in slave mode).



For each play channel, the operator can adjust:

- the video and audio source (camera angle, and source server if several units are connected on an SDTI network);
- the desired delay in hh:mm:ss:fr.

For each play channel, the operator can view:

- the actual delay in hh:mm:ss:fr;
- the timecode of the on-air picture
- the timecode of the incoming picture on the associated record channel;
- the status of the associated record channel (Recording / Idle)

How to Configure the Video Delay Parameters of a Play Channel

To configure the Video Delay Parameters of a Play Channel, proceed as follows:

1. Select the play channel to configure by pressing **ALT+the corresponding F_ key** on the PC keyboard (ex: **ALT+F1** for PGM1, **ALT+F2** for PGM2/PRV, etc)
2. If you want to use another server on the SDTI network as a source, press **SHIFT+F7** on the PC keyboard to call up the network list. Use the arrow keys to select a server, and press **ENTER** to validate.
3. Select the camera angle: use the left / right arrow keys, or the **TAB** key to move the green cursor on the desired camera, then press **ENTER**. The new camera angle is loaded on the channel.
4. Set the new value for the delay: use the left / right arrow keys, or the **TAB** key to move the green cursor over the TARGET DELAY field, and enter the desired delay value in hh:mm:ss:fr. Press **CTRL+the corresponding F_ key** on the PC keyboard to activate the new delay on the selected channel (ex: **CTRL+F1** start the new delay on PGM1). If the duration of the record train is lower than the target delay, the channel will pause on the first recorded picture until the record train is long enough for the desired delay. In this case, the message “WAIT” is displayed on the OSD of that channel.

9.4. Sony, XtenDD35, Odetics & VDCP Protocols

These protocols allow the server to be controlled by external devices.

Sony BVW75 Protocol

This protocol allows the server to be seen as a VTR by the controlling device. On a playback channel, all usual transport commands (play, PlayVar, pause, goto timecode, pause, stop, etc...) are supported. On a record channel, only Rec and Stop commands are supported.

This protocol is the simplest one but does not support clip management. It should be used when the controlling device does not support the XtenDD35, Odetics or Louth VDCP protocols (ex: edit controllers, NLE applications, some video switchers, VTR controllers, etc.)

XtenDD35 Protocol

This protocol is based on the Sony BVW75 protocol for all standard transport commands. It has extended commands so that it supports clip management: using this protocol, the controlling device can create, name, recall and delete clips.

This protocol can be used with Thomson/GVG XtenDD range of switchers, and with DNF ST300-EVS and 4040CL-EVS controllers.

Odetics Protocol

This protocol is based on the Sony BVW75 protocol for all standard transport commands. It has extended commands so that it supports clip and playlist management: using this protocol, the controlling device can create, name, recall and delete clips, but it can also manage playlists.

This protocol can be used with many different control devices and automations software, including DNF ST300 and 4040CL controllers.

Non standard commands in Sony, XtenDD35 and Odetics protocols on the play channel of an EVS server:

REC: when a REC command is sent to a play channel, this channel will return in E2E mode on its default record train. If the default record channel associated to that player is currently stopped, it will jump to the last recorded picture and pause.

EJECT: if the play channel is not yet in E2E mode when the command is sent, it will return to E2E mode on its default record train (similar to receiving a REC command). If the play channel is already in E2E mode, it will switch to the next record channel available (AàBàCà...àAà...). This is for example useful with a BVE edit controller to allow the editor to select the record train he wants to work with.

Louth VDCP Protocol

This protocol is a more complex protocol mainly used by automation systems but also by Sony switchers. It is not based on the Sony BVW75, and can handle clips as well as playlists.

IPDP Protocol

For more information on how the IPDirector application controls the server, refer to the IPDirector Remote Installer and User manual.

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