USER MANUAL

Epsio.Zoom

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Table of Contents

1. Introduction

1.1. Product Overview

Description

Epsio Zoom for 4K zooming allows operators to scale any 16:9 region within a 4K frame to HD, in real time.

An operator identifies the 4K content, either via a touchscreen or a mouse, and then selects the specific part of the high-resolution image for zooming. The resulting zoom sequence can be used for the HD live diffusion as a regular instant replay.

Functional Worfklow

In Epsio Zoom, the operators define up to ten zoom positions and the zoom depth on the region(s) where they want to zoom on the video (record train or clip). They store the zoom positions into virtual camera registers. The operators can also mark cue points in Multicam corresponding to the zoom positions.

On the LSM Remote Panel, the operators take control over the Epsio Zoom by activating the Epsio Zoom mode. In this mode, the operators can play back the video sequence with the first three zoom effects, by calling back the corresponding virtual cameras when they reach the requested position or the defined cue point.

The zoom sequence can be played out in real time in HD.

1.2.   Setup Overview

The following drawing presents a typical setup with Epsio Zoom:

- The 4K cameras are connected to the XT3 server configured in a 4K format.

- The content is sent from the XT3 server to the AJA Corvid Ultra in a 4K format.

- The AJA Corvid Ultra outputs an HD signal.

- The Corvid Ultra is connected to the Epsio PC via a dedicated PCIe link.

  Refer to the Technical Hardware manual for more information about the PCIe link.

- The Epsio Zoom application, installed on the Epsio PC, communicates with the PC LAN port of Multicam. This means that they both must be connected to the same network subset.
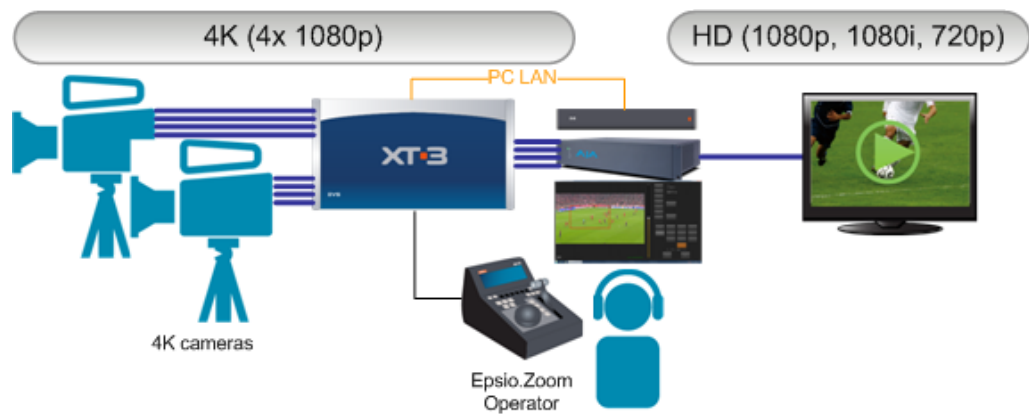
2. User Interface

2.1. Epsio Zoom Application
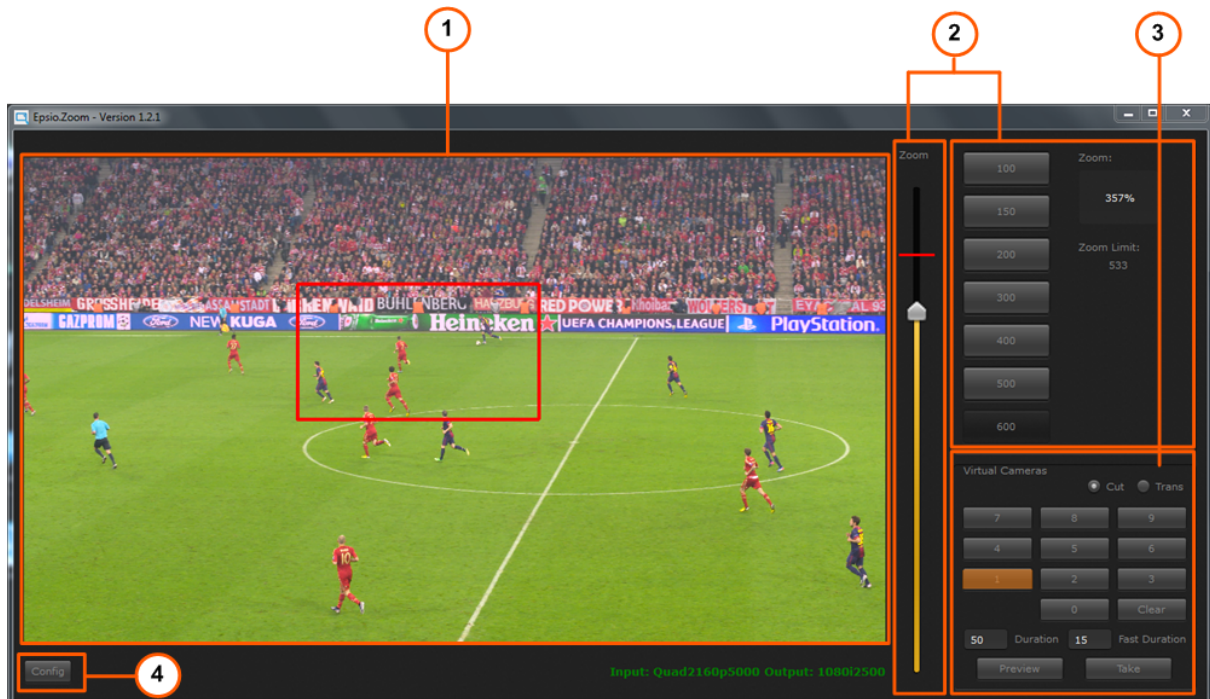
2.1.1. Overview

Accessing Epsio Zoom

To open the Epsio Zoom application, do one of the following:

- Click or tap the Epsio Zoom logo on the desktop.
- Select **All Programs > EVS Broadcast Equipment > EpsioZoom** from the **Start** menu.

Introduction

The Epsio Zoom main window contains the areas highlighted on the screenshot below:

Area Description

The table below describes the various parts of the Epsio Zoom application:

Part	Name	Description
1.	Preview	The Preview area allows users to view the 4K video input they want to zoom on, and to select the zoom area.
2.	Zoom Selection	The Zoom Selection area allows the user: • to select a predefined zoom using zoom buttons • to define a precise zoom with the zoom ruler See section "Zoom Selection Area" on page 7.
3.	Virtual Cameras	The Virtual Cameras area mainly allows the user to register a zoom position and depth as a virtual camera in Epsio Zoom. The first three virtual cameras can be called back directly from the Remote Panel. See section "Virtual Cameras Area" on page 9.
4.	Configuration button	The Configuration button gives access to technical and operational settings: • The technical settings are described in the Installation manual. • The operational settings are described in section "Operational Settings" on page 16.

2.1.2. Preview Area

Introduction

The Preview area can fulfill different roles:

- When preparing the zoom sequence, the users can visualize the 4K video input they want to zoom on and select the zoom area on the preview area.

- When playing back the zoom sequence in preview mode, the users view the current and the next virtual camera they have registered. They can therefore easily take over the next virtual camera when you reach the requested position in the video.

See section "Creating and Playing a Zoom Sequence" on page 19 for more information on how to select a zoom area on the preview area.

Virtual Camera Representation

Direct Mode

When the **Preview** button in the Virtual Cameras area is not selected (gray), you work in Direct mode.

In Direct mode, the zoom area is represented by a red rectangle on the preview area.

The Direct mode is ideal to prepare a zoom sequence.

Preview Mode

When the **Preview** button is selected (green), you work in Preview mode.

In Preview Mode, the current virtual camera is represented by a red rectangle, and the next virtual camera is represented by a green rectangle.

The Preview mode is ideal to replay a zoom sequence.

Touch Screen Gestures

When you use Epsio Zoom with a touch screen, you can use the following gestures to perform the actions described below:

How can I ...	Action
zoom in	spread
zoom out	pinch
point the center of the zoom area	tap
move the zoom area	drag

2.1.3. Zoom Selection Area

Introduction

The Zoom Selection area mainly includes the zoom ruler and the zoom buttons, which both make it possible to select the zoom depth to be applied.

Zoom Ruler

The **Zoom Ruler** allows you to define, with a one-percent precision level, the zoom depth of the zoom area corresponding to the virtual camera (red rectangle) shown on the preview area:

- The arrow-shaped cursor is slid up to increase the zoom level or down to decrease the zoom level.
- The defined zoom level is specified in percent in the **Zoom Level** field, on the right of the zoom buttons.
- The red bar on the ruler, if any, represents the zoom limit, that is the maximum zoom depth you are able to define.

Zoom Buttons

The **Zoom Buttons** allow you to apply a predefined zoom depth to the zoom area corresponding to the virtual camera (red rectangle) shown on the preview area.

The zoom values can be modified via the **Config** button.
The zoom values exceeding the specified zoom limit will be displayed, but will not be available.

> **Note**
> When you use the zoom buttons or ruler to define the zoom depth, a cut transition is applied by default. Should you want a smooth transition, you need to define transition durations in the Virtual Camera area.

Zoom Level

The **Zoom Level** field specifies, in percent, the zoom depth of the virtual camera defined by means of the zoom buttons or zoom ruler, and shown on the preview area.
A zoom level of 100% selects the full 4K image.
A zoom level of 200% selects a 1080p/1080i portion of the image.
A zoom level of 300% selects a 720p portion of the image.

Zoom Limit
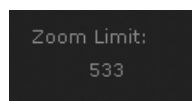
The **Zoom Limit** field specifies the maximum zoom depth you can define. If you zoom with the zoom ruler beyond this limit, the zoom depth will not be further increased.
The zoom limit can be added, removed or modified in the Configuration window accessible via the **Config** button.

2.1.4. Virtual Cameras Area

Introduction

The Virtual Cameras area is made up of the following zones, which are described in details below:

Part	Name
1.	Transition buttons
2.	Virtual Cameras area
3.	Transition Duration fields
4.	Preview field & Take buttons

Transition Buttons (1)

The **Transition** radio buttons allow user to specify whether a smooth transition has to be applied when a zoom change is requested.

If the **Cut** radio button is selected, the zoom in and zoom out actions are performed without transition.

If the **Transition** radio button is selected, a smooth transition will be applied to all zoom in and zoom out actions for all registered virtual cameras. The transition duration depends on the values defined in the **Duration** and **Fast Duration** fields.

Virtual Cameras Area (2)

Virtual Camera Buttons

The **Virtual Camera** buttons allow users to assign the zoom area and zoom depth currently defined on the preview area to a virtual camera register.
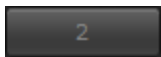
- To assign a virtual camera register, click or tap the requested register button.

    When a virtual camera register is assigned, the register button turns orange:

- To unassign one or more camera register(s), click or tap **Clear** followed by the requested register button(s).

    When a virtual camera register is unassigned, the register button is gray:

When virtual camera registers from 1 to 3 have been assigned in Epsio Zoom, you will see them and be able to recall them from the Remote Panel, using the **Zoom 1** (A), **Zoom 2** (B) and/or **Zoom 3** (C) soft keys.

Clear Button

Next to the **Virtual Camera** buttons, the **Clear** button allows users to clear one or more virtual cameras. To clear one or more camera registers, click or tap the **Clear** button, then the camera register(s) to be unassigned. The **Clear** button remains active a couple of seconds to let you select more than one register.

Transition Duration Fields (3)

The **Transition Duration** fields allow users to specify the duration of the transition in frames:

- The **Duration** field specifies the duration of the transitions when you shift from one virtual camera to the other. The default duration is set to 50 frames (~ 1s).

- The **Fast Duration** field specifies the duration of the transition from and to 100%, which is usually used at the beginning and end of a zoom sequence. The default fast duration is set to 15 frames (~ 1/4s).

> **Note**
> If one of the duration fields is set to 2 frames (minimum duration), the transition corresponds to a cut.

Preview and Take Buttons (4)

Preview Button

The **Preview** button in Epsio Zoom allows users to activate the preview mode. When the preview mode is active, the **Preview** button is green.

When you play back a zoom sequence in preview mode, Epsio Zoom highlights the current virtual camera in red, and the next virtual camera in green on the preview area. This helps users identify the next virtual camera, and to call it back easily when requested.

When you are in the Epsio Zoom menu on the Remote Panel, you can also activate the preview mode with the **PRV CTL** key. When the preview mode is active, the **PRV CTL** key turns green.

Take Button

The **Take** button in Epsio Zoom allows users to call back the next virtual camera when the preview mode is active.

To perform the same action, you can also press **Enter** on the keyboard, or **TAKE** on the Remote Panel when your are in the Epsio Zoom menu.

You first have to select the Zoom key corresponding to the requested virtual camera, and then select the **TAKE** key to call back the selected virtual camera.

2.2. Epsio Zoom Menu on LSM Remote

2.2.1. Activating and Accessing the Epsio Zoom Menu

Prerequisites

To be able to view and activate the Epsio Zoom mode, your setup need to fulfill the technical requirements specified in the Installation manual. In addition, you need to configure the Multicam application as explained in the section "Configuring Multicam" in the Installation manual.

> **Note**
> When Multicam is configured with more than one PGM, the Epsio Zoom is considered to be connected to the PGM1 of the EVS server.

How to Activate the Epsio Zoom Menu

The Epsio Zoom menu is available from the record train or from clips:

To activate the Epsio Zoom menu, press **SHIFT+D** (**E.Zoom**) in your Remote Panel menu. The **E.Zoom** button highlights black on the LCD:

```
*PGM1* CAM A
           ┌──────────┐ ┌──────────┐ ┌──────────┐ ┌──────────┐
           │          │ │          │ │ FreezeCP │ │          │
           │  Zoom 1  │ │  Zoom 2  │ │  Zoom 3  │ │   100%   │
           └──────────┘ └──────────┘ └──────────┘ └──────────┘
P.1 B.1
PL 11: < 110A 123A 127A
Msg
           ┌──────────┐ ┌──────────┐ ┌──────────┐ ┌──────────┐
           │ Rst CAM  │ │          │ │          │ │  E.Zoom  │
           │  Cam A   │ │          │ │          │ │          │
           └──────────┘ └──────────┘ └──────────┘ └──────────┘
```

How to Access and Leave the Epsio Zoom Menu

To enter the Epsio Zoom menu, press the **Menu** key on the Remote Panel when the Epsio Zoom menu is active:

```
*PGM1* CAM A

              Epsio .Zoom Mode




Msg:
  ┌──────────┐ ┌──────────┐ ┌──────────┐ ┌──────────┐
  │          │ │          │ │ FreezeCP │ │          │
  │  Zoom 1  │ │  Zoom 2  │ │  Zoom 3  │ │  100%    │
  └──────────┘ └──────────┘ └──────────┘ └──────────┘
```
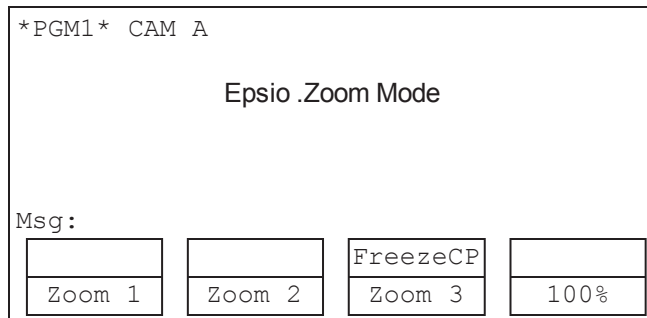
To leave the Epsio Zoom menu, press again **Menu** in the operational menu.

2.2.2.   Key Commands on the Remote Panel

Introduction

This section presents the various commands you can use on the Remote Panel **when you are in the Epsio Zoom menu**.

The keys that are not described in this section are either not relevant or not available in the Epsio Zoom mode.

Soft Keys in the Epsio Zoom Menu

Zoom 1/2/3 (A/B/C Keys)

The soft keys A, B, and C allow recalling the assigned virtual camera registers.

The **Zoom 1** (A soft key) recalls the camera register 1.

The **Zoom 2** (B soft key) recalls the camera register 2.

The **Zoom 3** (C soft key) recalls the camera register 3.

If a camera register has not been assigned, the **Zoom 1**, **Zoom 2** or **Zoom 3** label is not displayed on the LCD, and the corresponding soft key is not available.

100 % (D Key)

The **100%** key (D soft key) zooms out to 100% while applying the transition defined in the **Fast Duration** setting in Epsio Zoom.

FreezeCP (SHIFT + C Key)

The **FreezeCP** (SHIFT+C) allows you to enable or disable the **Freeze on cue points** parameter of Multicam Configuration (Operation tab, Clips section).

When the parameter is enabled, the **FreezeCP** key has a dark background.

When the parameter is disabled, the **FreezeCP** key has a clear background.

Block Keys used with Epsio Zoom

PRV CTL

When you are in the Epsio Zoom menu, the **PRV CTL** key activates the preview mode. The preview mode allows you to visualize the current virtual camera (red rectangle) and the next virtual camera (green rectangle) on the preview area of Epsio Zoom.

TAKE

When you are in the Epsio Zoom menu and when the preview mode is enabled, the **TAKE** key recalls and applies the next defined virtual camera onto the video.

You first have to select the Zoom key corresponding to the requested virtual camera, and then select the **Take** button to call back the selected virtual camera.

RECORD

The **RECORD** key allows you to return to the train head (E/E), as usual.

As you press **RECORD**, Multicam behaves as follows:

- It exits the Epsio Zoom 2nd menu.
- It clears all virtual cameras in Epsio Zoom.
- It restores 100% zoom level in Epsio Zoom.

SHIFT + RECORD

The **SHIFT + RECORD** key combination allows you to return to the train head (E/E) without clearing the IN and OUT points, as usual.

When you press **SHIFT + RECORD**, Multicam behaves as follows:

- Multicam does not exit the Epsio Zoom 2nd menu.
- Multicam does not clear the virtual cameras in Epsio Zoom.
- Multicam restores 100% zoom level in Epsio Zoom.

MENU

The **MENU** key exists the Epsio Zoom mode.

Function Keys

The **function (F_)** keys work as usual in Multicam to select pages, bank and clips.

See the Multicam LSM operational manual for more information on selecting clips.

BROWSE

The **Browse** key allows browsing from one cue point to the other.

Goto TC

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

Refer to the LSM Operation Manual, to the section "Function of the Operational Block 2 Keys", for more information on the use of the Goto TC key.
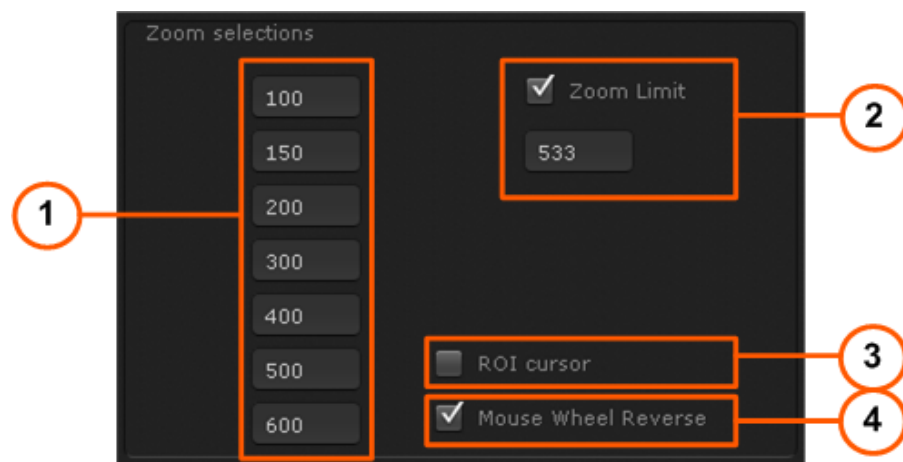
3.   Operation

3.1.   Operational Settings

Operational Settings in Epsio Zoom

Introduction

In Epsio Zoom, several operational parameters can be defined in the Configuration window, accessible from the **Config** button.

We will only describe in this section the operational settings which will have a direct impact on the way you use Epsio Zoom:

This window includes other technical settings described in the Epsio Zoom Installation manual.

Predefined Zoom Depths (1)

On the left part of the Zoom Selections area, you can specify the requested zoom depth for the predefined zoom buttons displayed in the Zoom Selection area.

The maximum zoom depth is 1000. Take into account that users will not be able to define a zoom depth beyond the zoom limit you can define in the **Zoom Limit** setting.

Zoom Limit (2)

The Zoom Limit setting allows you to define a maximum zoom depth, which will be materialized as follows in the Virtual Cameras area:

•   The defined zoom limit is specified in the Zoom Selection area.

•   A red mark is set at the zoom limit on the zoom ruler.

•   The zoom buttons beyond the defined zoom limit are not available in the Zoom Selection area.

The Zoom Limit setting includes a check box and a text field:

- Select the check box when you want to define a maximum zoom depth.

- Specify the maximum zoom depth if the check box is selected.

ROI Cursor (3)

The **ROI Cursor** setting makes it possible to add a red cross on the preview area to materialize the center of the zoom area.

Mouse Wheel Reverse (4)

The **Mouse Wheel Reverse** setting makes it possible to change the behavior of the mouse wheel when it is used to zoom in and out:

- When the check box is not selected, a scroll up move corresponds to a zoom out, and a scroll down move corresponds to a zoom in.

- When the check box is selected, a scroll up move corresponds to a zoom in, and a scroll down move corresponds to a zoom out.

Operational Settings in Multicam

The following Multicam parameters are used in Epsio Zoom, and can be found in the Multicam Configuration module, Operation tab, Clip section.

Mark Cue Point

Description	Specifies how the cue point timecode will be memorized.
Values	Two values are possible for this parameter: • **Live:** Memorizes cue points based on the timecode of the LIVE input. • **Playback:** Memorizes cue points based on the timecode of the field loaded on the main play channel.
Default value	Live

Freeze on Cue Point

This setting can also be directly enabled and disabled from the Epsio Zoom menu, via the **SHIFT + C** key.

Description	Specifies whether Multicam will freeze or not when it reaches a cue point marked on the clip or the record train that is being played back. The post-roll parameter is not taken into account for this functionality.
Values	• **Yes:** The playout freezes on the cue points when playing clips or record trains where cue points have been defined. • **No:** The playout plays through the cue points when playing clips or record trains.
Default value	No

3.2. Creating and Playing a Zoom Sequence

Introduction

You can create zoom sequences on a record train or on a clip:

• When you create a zoom sequence in a clip, the cue points and virtual cameras are stored with the clip.

• When you create a zoom sequence on the record train, the cue points are kept, but the virtual cameras will only be preserved in Epsio Zoom when you leave the Epsio Zoom mode to go back to live with **SHIFT + RECORD**.

Prerequisites

If you want to use cue points to identify the beginning of a zoom sequence, and you want to freeze on the defined cue points, make sure the **Mark cue point** and **Freeze on cue point** parameters are properly set.

How to Create a Zoom Sequence

To create a zoom sequence, proceed as follows:

1. With the Remote Panel, do one of the following actions:
   ◦ Come back to the position in the record train where you want to define a zoom sequence.
   ◦ Load the clip on which you want to define a zoom sequence.

2. Do one of the following actions to define the zoom depth on the Epsio Zoom preview area:
   ◦ Click or tap a zoom button.
   ◦ Scroll the mouse wheel until you get the desired zoom depth.
   ◦ Pinch or spread the touch screen until you get the desired zoom depth.

3. Do one of the following actions to position correctly the zoom area on the Epsio Zoom preview area:
   ◦ With a standard monitor, click on the preview area where you want to position the center of the zoom area, or drag the zoom area onto the requested position.
   ◦ With a touch screen, tap on the screen where you want to position the center of the zoom area or drag the zoom area onto the requested position.

4. In Epsio Zoom, click or tap the requested virtual camera on which you want to store the zoom area defined.

5. If you want to add a cue point at the beginning of the zoom sequence on the Remote Panel, press **MARK** on the timecode corresponding to the beginning of the zoom sequence.

How to Play Back a Zoom Sequence

When you have defined the zoom sequence on the record train or clip, you can play it back from the Remote Panel when you are in the Epsio Zoom menu.

To play back a zoom sequence, proceed as follows:

1. On the Remote Panel, go back to the position from which the zoom sequence should be played back in the clip or record train.

2. Make sure that you are in the Epsio Zoom menu. Otherwise, press the **MENU** key to enter the Epsio Zoom menu:

```
*PGM1* CAM A

               Epsio .Zoom Mode



Msg:
  ┌──────────┐ ┌──────────┐ ┌──────────┐ ┌──────────┐
  │          │ │          │ │ FreezeCP │ │          │
  │  Zoom 1  │ │  Zoom 2  │ │  Zoom 3  │ │   100%   │
  └──────────┘ └──────────┘ └──────────┘ └──────────┘
```

3. Check that you are back to 100%. Otherwise, press **D** to come back to 100%.

4. Press **PLAY** or Move the lever up to start playing the zoom sequence.

5. On the requested position, or on the cue point freeze, press **A** to call back the first virtual camera.

6. If needed, come back to 100% by pressing **D**.

7. If a second and third zoom sequence has to be played back, repeat the steps 4 to 5 to call the requested virtual camera each time.

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