

User Manual

Web SL Editor

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1 INTRODUCTION

The **Web SL Editors** is a cloud-based user friendly applications of FingerCloud to create, edit and verify sign language files for access services.

This editor is totally inter-connected to the Accessibility Content Manager (ACM) of FingerCloud for the video, access service and support files. Metadata is also provided from the ACM.

The main stakeholders that will benefit from the use of the Web SL Editors are the following:

- Access service producers (service providers and freelancers) make usage of the Web SL
 Editor to produce and edit the sign language (SL) files on a fully cloud-based environment. There are two cases:
 - The producer makes use of the broadcaster's FingerCloud licence. In this case all the production tasks are assigned by the broadcaster who provides all the support materials such as the LQ video file and metadata. The producer will use the Editor Interface of the ACM to view and complete the production tasks assigned to them. In this case the Web SL Editor is run from the production task of the Editor Interface of ACM.
 - The producer performs all the workflow of uploading the programme support materials such as the LQ video and metadata, and also performs the access service production. In this case the producers uses the Content Management Interface of the ACM to upload the support materials such as LQ video and metadata, and also to create, import and export access service files. In this case the Web SL Editor is run from the Content Management Interface of ACM.
- Broadcaster's QA department make usage of the Web SL Editor via the Content Management Interface of ACM to verify the access service files.
- Broadcaster's accessibility department make usage of the Web SL Editor via the Content
 Management Interface of ACM to preview the access service files.

In the Annexes the user will find useful information such as terminology, a list of Errors and Warnings, a list of the shortut keys.

Note: When the Web SL Editor is run from a production task in the Editor Interface of ACM, the editing features available in the editor are limited according to the editing permissions granted to the production task by the broadcaster, so such limitations include:

- Settings: only if this permission is granted, the producer will be able to modify the editor settings for this production, such as default duration, separation, characters, regions, import or export profiles, etc.
- Time slot: when the production task has been limited by a time slot (from one time-code to another time-code), the producer will only be able to edit the section of the programme in the time slot, so no time-code outside of the time slot is accepted and the video can only be played inside the time slot. This limitation is used by the broadcaster when the access service production is distributed to various producers by dividing the whole programme in several time slots and assigning each time slot to a different producer.

2 How to Access Web SL Editor

In order to run the Web SL Editor there are some basic requirements:

- Hardware: PC with at least i5 processor, 8 GB RAM. Screen resolution should be at least
 1920×1080 pixels (a good graphics card is recommended).
- Browser: Last version of Chrome or Firefox (at least Chrome version 74 or Firefox version
 65).
- Fast internet connection as the tools are online and videos are used along the workflow.

The user logs in the ACM via the web browser (figure 1) and enters username and password previously provided by the administrator.

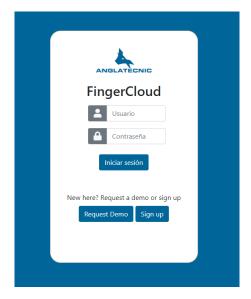


Figure 1: Login page

Once in the ACM, to run the Web SL Editor depends on the stakeholder and it is via one of the ACM interfaces:

- To learn how to run the Web SL Editor from the Editor Interface of the ACM read the chapter 4.3 (Editor Interface) of the Accessibility Content Manager User Manual.
- To learn how to run the Web SL Editor via the Content Management Interface of the ACM read the chapter 4.2 (Content Management Interface) of the Accessibility Content Manager User Manual.

3 WEB SL EDITOR

The Editor is available in two working modes: Classic & Compact.

For the description of the Web SL Editor the Classic layout will be used. There is an alternative Compact layout which is explained in chapter 6. To interchange between these layouts the user must click the switch in the settings box when in classic layout (left image in figure 2) and in the top left when in compact layout (right image in figure 2).

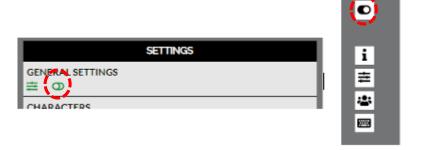


Figure 2: Layout interchange of editor

Figure 3 displays the two main areas of the editor. The upper area (INFO, SETTINGS, VIDEO PREVIEW, SUBTITLE LIST) is only designed for viewing, setting and verification purposes. The down area (VIDEO CONTROLS, EDITION AREA, ACTIONS, RECORDING and SOUND-WAVE) is purely for edition and final preview and actions.

The editor is responsive, so you may wish to set the browser zoom adequately (Ctrl+mouse wheel up or Ctrl+mouse wheel down) to fit all the boxes adequately in the screen.



Figure 3: Web SL Editor

Moreover, it gives the possibility to the user to sign interpret videos in both 2D and 360° videos. Depending on the video uploaded for the task, they are headed to the appropriate version of the editor (either 2D or 360°). In this user manual, the 360° video sign language edition/production is presented as it is more comprehensive. Functionality of 2D videos sign language edition/production is the same except for angle-related functions which are not active while the user is working with a 2D video. By reading this document, you will be able to work with both 2D and 360° videos.

4 How to produce segments

It is assumed that now you are inside the Web SL Editor. In this editor the user deals with two videos (original video to be sign interpreted and the second video to be recorded by the signer). In this document the first video is referred to as "Main video" and the second one is referred to as "SL video" (See annex I for terminology).

Your first tools are the video controls. Table 1 demonstrates all the buttons with their functionality. With these buttons you navigate through the video, move the video FoV (Field of View) and jump to the video frame you wish.

Video controls VIDEO 00:00:17:03 \leftarrow \uparrow \downarrow \rightarrow \odot Frame backward This button makes the video go backwards frame by frame (Alt+shift+left). **™** Fast backward This button makes the video go backwards with a fast speed (F5). Slow backward This button makes the video go backwards with a slow speed (F6). Toggle play/pause This button plays and pauses the video (F2). Note: The F2 shortcut is used to Play and to Pause the video alternatively, nonetheless the F3 shortcut has also been added to Pause the video only. Stop This button makes the video stop and go to the beginning (F9). Slow forward This button makes the video go forward with a slow speed (F7). Fast forward This button makes the video go forward with a fast speed (F8). This button makes the video go forward frame by frame Frame forward (Alt+shift+right). **Q**Find segment by With this button, you can find the segment that contains the TC TC (Ctrl+Shift+F). Jump backward This button helps the user to jump some frames backward. The number of the frames to be jumped is configurable in General Settings (see table 5) (F1). Jump forward This button helps the user to jump some frames forward. The number of the frames to be jumped is configurable in in General Settings (see table 5) (F4).

Video controls		
Move FoV left	With this button you move the Field of View (FoV) to the left in the spherical video (Alt+left). You can also use the mouse and left button over the video, and move to the left to do the same. You can see the angle of the FoV in the edition area.	
Move FoV up	With this button you move the FoV up in the spherical video (Alt+up). You can also use the mouse and left button over the video, and move up to do the same. You can see the angle of the FoV in the edition area.	
Move FoV down	With this button you move the FoV down in the spherical video (Alt+down). You can also use the mouse and left button over the video and move to the bottom to do the same. You can see the angle of the FoV in the edition area.	
→ Move FoV right	With this button you move the FoV to the right in the spherical video (Alt+right). You can also use the mouse and left button over the video and move to the right to do the same. You can see the angle of the FoV in the edition area.	
00:00:05:22 GO	Enter a specific time of the video, press GO and you are taken to that video frame.	
Move FoV to "Speaker's location"	By pressing this button, the FoV moves to the angle where the current segment is set (Alt+F).	

Table 1: Main video controls

The production of the SL file consists of the following phases:

- Phase 1: Preparation
- Phase 2: Recording
- Phase 3: Adjusting

Preferably the signer receives the main video to be signed with subtitles and its angles (360° media). This is beneficial in following scenarios:

- The signer is deaf/hard of hearing. Hence, they can read easily from the provided subtitles and perform the sign interpretation.
- When the angles of the subtitles are delivered, they are useful for the interpreter during the process of recording as the FoV of the main video changes automatically to show the speaker.

When this is the case, **Phase 1 can be skipped** and the producer is able to jump straight to phase 2 (Recording).

In a number of exceptional cases, phase 1 is required to be performed before actual recording:

- 1. Main video is delivered without subtitles
- 2. Main video is delivered with subtitles but without angles
- 3. Main video is delivered with subtitles and its angles, but the user is not satisfied with how the angles are set and wishes to change them before getting to recording (phase 2)

If the user finds themselves in any of the above conditions, phase 1 is mandatory because angles with proper timing are necessary in phase 2 during recording when working with an immersive media. The interpreter needs that the FoV of the main video moves automatically to the speaker's location.

Phase 1: Preparation

This section describes the preparation phase in case it cannot be skipped (see previous paragraph).

Each segment is prepared following the next steps (see illustration 5):

- 1. The producer needs to set TCin of the segment using this box.
- 2. The producer needs to set TCout of the segment using this box.
- 3. Finally the producer sets the angle [360º media]. Due to its importance, table 2 is plotted to describe the angle setting process.

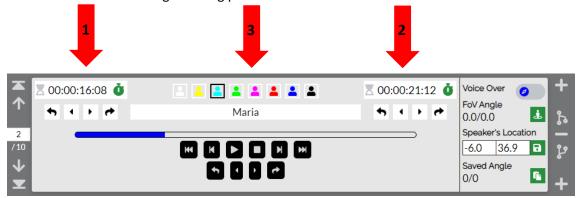


Figure 4: SL segment edition area

Segment preparation – Angles By default, at first the video has the current FoV angle as longitude: 0.00° and latitude: 0.00° Also, the Voice Over option can be marked when there is no speaker in the 360° scene. Voice Over: Only when there is only voice and no speaker in the 360° video frame (Alt+O).

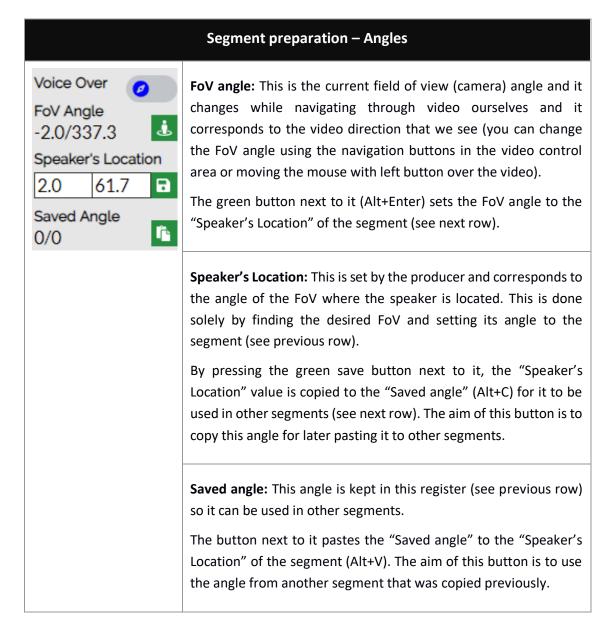
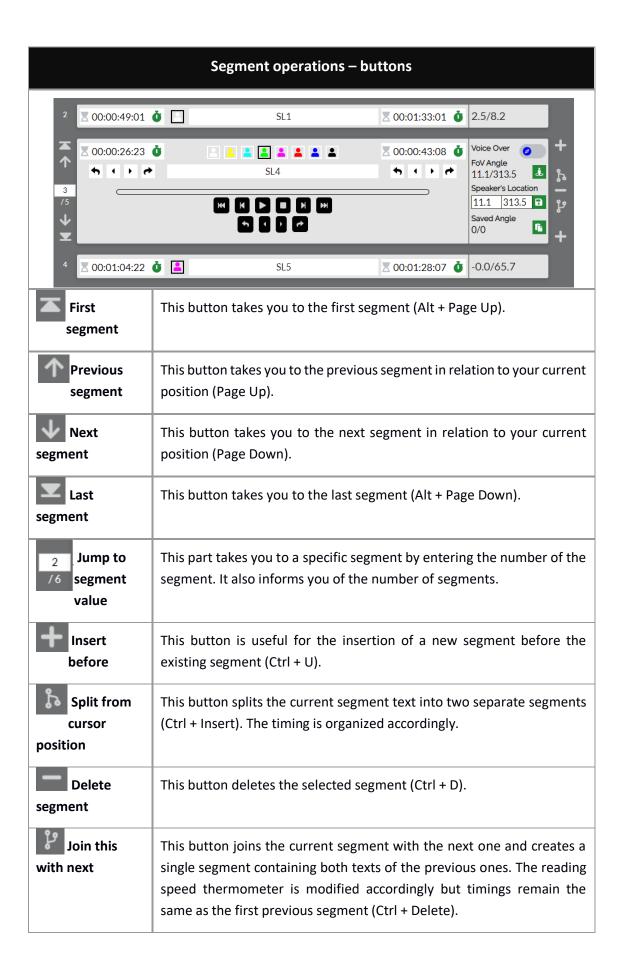


Table 2: Segment preparation – angles

Next, the producer may add more segments and prepare them as well. The tools to operate between segments such as add, move to next segment or split a segment into two are explained in Table 3.



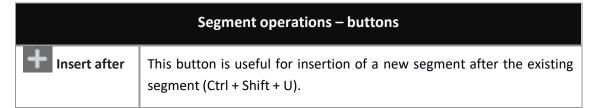
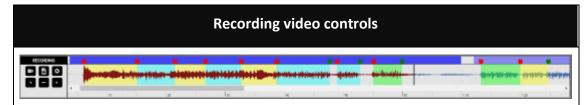


Table 3: Segment operations

Phase 2: Recording

In the case that the main video is delivered to the user with subtitles and right angles [360° media], this is the first phase to be performed by the user. In the other case, this phase is performed after finishing Phase 1 (Preparation).

Table 4 explains the recording video controls. There is no time limit for video recording. This means that that user can interpret the whole main video as a single recording or record multiple videos. Table 4 explains more details on how this structure works.



The video timeline (sound-wave) displays the main video sound, the black vertical line shows the current moment of the main video. The transparent colours along the soundwave reflect the segments in time that have been prepared previously, this colour can vary according to the character colour set by the user previously.

The far-left buttons are designed for recording actions and explained in detail in this table.

The top purple colour symbolizes the SL videos in time which can be multiple or one. The SL videos are selected by clicking on the purple areas and actions can be performed on them.

The user is able to record the video of the SL by pressing the "Record" button (Ctrl + alt + r). This recording can be as lengthy as desired (maximum value is the main video length) and the user is notified about the recording getting started with a countdown on the centre.

The procedure of recording can take place in three screen modes:

- Default mode: the default form as shown in figure 3.
- Expanded mode: a mode where the video section expands and only recording control buttons and the segments visualization are visible.
- Full screen mode: a mode where the video is in full screen without anything else on the screen. The recording control is performed by shortcuts.



Recording video controls		
	The purple bar above the timeline symbolizes the SL video and can be selected using mouse button. After recording, the purple bar may take some time to be shown as the SL video is uploaded to the Internet server.	
H	By this button, the user is able to import a pre-recorded video from hard disk (Ctrl + alt + i).	
0	This button previews the selected recorded video. While being played, the same button acts as a "Pause" button (Ctrl + alt + F2).	
-	This deletes the selected recorded video (Ctrl + Shift + F2).	
•	These two buttons are used to move the selected video frame by frame and it helps adjusting the recorded video to the main video. Both frame backward (Ctrl + alt + left) and forward are possible (Ctrl + alt + right). It is possible to move the recorded videos via right mouse button.	

Table 4: SL video recording

Phase 3: Adjustment

After finishing the recording (phase 2) the user needs to create or adjust SL segments.

The procedure consists of creating segments as below. Figure 5 displays available tools used in this phase of SL production:

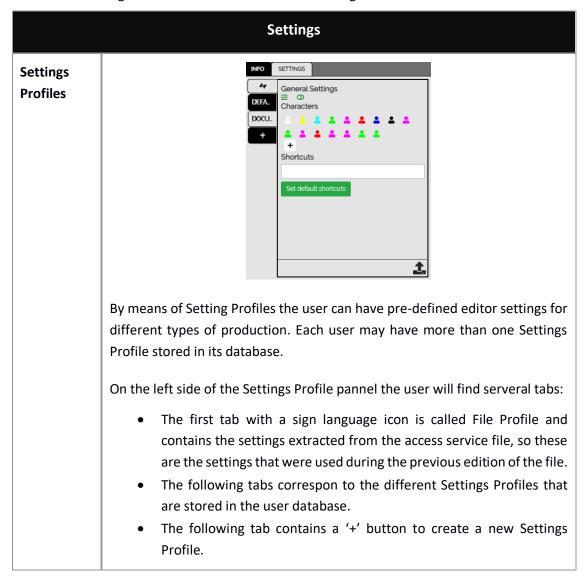
- 1. Adjusting TCin of the first segment by moving the red spot at the beginning of the segment using the mouse (red arrow figure 5) or in case that more precision is needed by using the buttons under the TCin box (red oval figure 5). The buttons change the TCin frame by frame/jump a by number of frames.
- 2. Adjusting TCout of the first segment by moving the green spot at the end of the segment using the mouse (green arrow figure 5) or in case that more precision is needed by using the buttons under the TCout box (green oval figure 5). The buttons change the TCout frame by frame/jump a by number of frames.
- 3. Setting a character (character's name and style are customizable see table 6)
- 4. Setting an angle for the segment (see table 2).
- 5. Testing the segment using video controls buttons provided for this purpose (orange arrow figure 5). These buttons operate like the normal video controls buttons (table 1). However, these buttons only belong to the selected segment. For instance, if the Play button is pressed, the videos will play from 00:00:06:12 to 00:00:15:02 which correspond to this segment specifically.
- 6. Adding new segment (see table 3) or moving to the next one. By default, new segments are added immediately after its previous one. Repeat 1-6.
- 7. Preview result (see chapter 5: More options)



Figure 5: Segments adjustment

5 MORE OPTIONS

The procedure in which we produce the sign language content is over, but we still have more options to work with. Remember the buttons that were introduced earlier, some of these are customisable using "SETTINGS". Table 5 shows the setting for the file and editor.



Settings

On the right side of the Settings Profile pannel the settings are displayed and can be modified by the user. Each profile contains a name and the data described in the following rows of this table.

Once the settings have been edited, the user must save them using the corresponding button on the bottom right of the panel (Save current profile).

If the user wants to delete one of its Settings Profile, the profile has to be selected and then click on the "Remove current profile".

A Settings Profile can be exported to a file (.json) to be shared between producers or to save it as a backup in the local disk. Therefore this file can be imported by another user, for instance to apply the same character colors in all the files within a series. To export a Settings Profile, the user must choose a profile and then click on the "Export profile from server" button. To import a Settings Profile from a JSON file, the user must click on the "Import profile settings to current profile", and then select the file from the local disk.

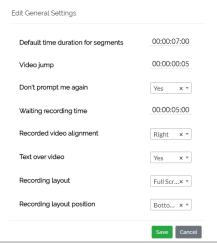
The editor uses the settings of the profile that is selected on the left side. When the user saves the file, the settings used during the production will be saved in the file in order to have the same settings when the file is open by any user.

When the editor is run with an access service file, the profile selected by defauld is the File Profile with the setting that were used during the previous edition of the file.

General settings



By pressing this icon, the following dialogue appears for the general setting of the editor that are set and saved by the user (sign interpreter).



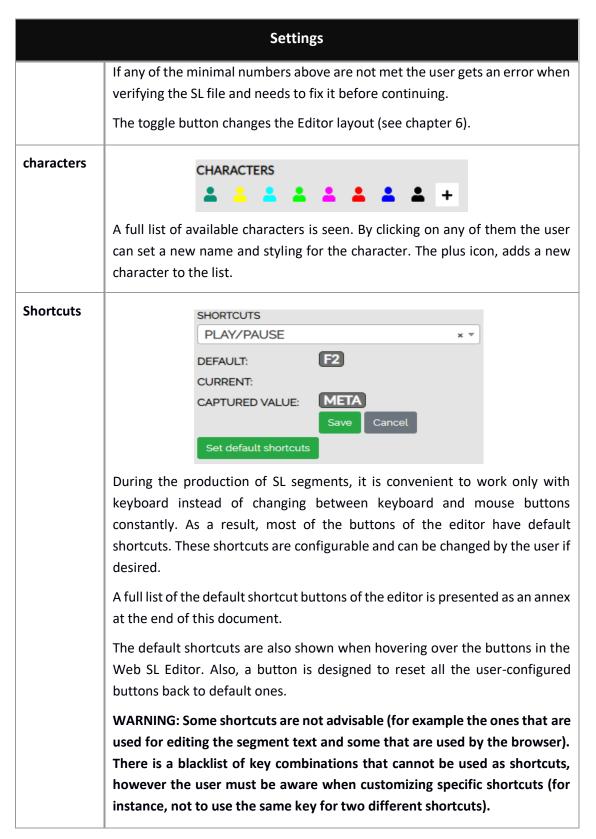


Table 5: Settings

The last step after finishing edition is verification and for that we use the preview modes and a number of actions. The general actions on the SL file are explained in Table 6.

	SL a	ctions	
ACTIONS			
	SAVE	AUTO SAVE	
	FORCED PREVIEW MODE	FREE PREVIEW MODE	
	CHECKTCS	TC SHIFT >>>	
	Find Q	SHOW/HIDE RECORDING CAMERA	
Save	This button saves the work.		
Auto save	Saves the contents automatic	ally when activated.	
Check TCs	By pressing this icon the timings are checked. As mentioned in table 5, if the minimal criteria set in the settings is not met in some segments, an error will appear for those segments. If everything is OK the icon turns green (Ctrl + Q). Hovering over the segment with the error will show the description and possible solution.		
	A table containing the possible errors is presented as an annex at the end of this document.		
Forced preview	This mode is used for verification. This verification mode makes it easier for the sign interpreter as the video will change angle when needed during the playback of the video. Segments and angles are bound with the video. You cannot freely change FoV at your wish, as the video itself takes you to the "Speaker's Location". When this mode is being on, the user cannot do editing any more and needs to turn it off (F11).		
Note : when clicking this button, "CHECK TC" (see previous row) is run and if there is any error the preview is not run until the errors are fixed.			
Free preview	preview producer as if playing back the video using HMD (Head Mounted Displ Segments are bound to the video time code, but angles are not. It means to you can move the FoV during the playback of the video. When this mod being on, the user cannot do editing any more and needs to turn it off (F:		
Note: when clicking this button, "CHECK TC" (see the row before the p one) is run first and if there is any error the preview is not run until the are fixed.			
TC shift	This shifts the time codes of a	group of segments.	

SL actions	
Find	This helps the user find specific words in the subtitle list.
Hide/show recording camera	As the name suggests, this option turns on/off the recording camera in the videos preview section.

Table 6: SL actions

Also, at the upper area you have informative sections (figure 6):

- On your left, general information of the production task.
- On your right, the subtitles with their time-codes.
- Yellow dot, current "Speaker's Location" of the segment.
- Alongside the two videos (main video, SL video), subtitles are visible according to the settings configured by the user. Normally deaf or hard of hearing interpreters would like to have the subtitles visible during work.



Figure 6: Informative sections

6 WEB SL EDITOR COMPACT LAYOUT

As some users of the editor prefer a simpler UI for this editor, Web SL Editor can be switched to the compact layout as shown table 7.

It is noteworthy to mention that the methodology of this view is same as before but the subtitles and some settings are hidden which can be viewed using corresponding buttons (table 7).

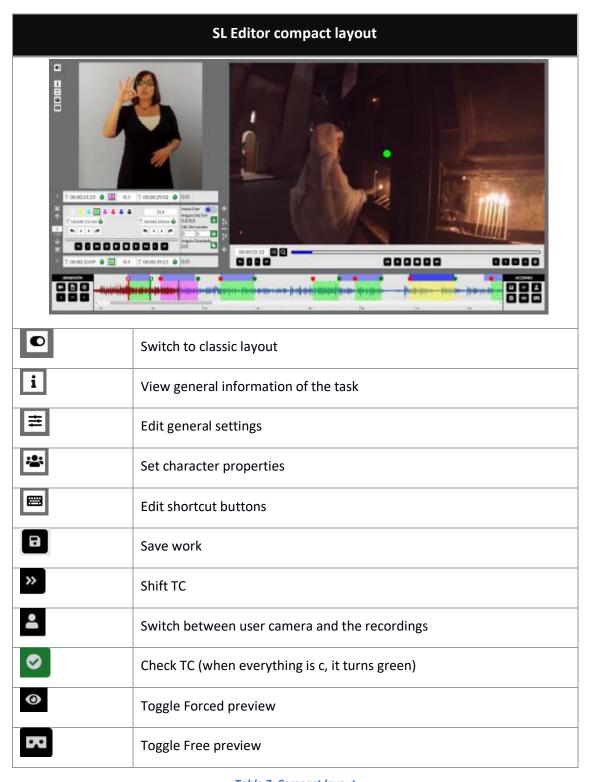


Table 7: Compact layout

ANNEX I: TERMINOLOGY

Term	Definition
Main video	The video on which the user needs to work on in order to make it accessible.
SL video	SL video is a video file directly recorded or imported as a file from PC by the user. The maximum duration of this file can be as long as the main video. This video can be individual or multiple in time.
Segment	The term refers to a time slot (TCin and TCout) produced by the user that contains information about character and speaker's location.

ANNEX II: ERRORS & WARNINGS

Error message	Cause	
Segment overlapping	This error appears when two SL segments or videos are overlapped (TCin current < TCout previous) Solution: Re-ordering TCs properly.	
Segments unordered	This error appears if for example the first segment is located after second segment in the sense of time-codes.	

ANNEX III: DEFAULT SHORTCUT KEYS

Functionality	Shortcut button
Toggle play/pause	F2
Pause	F3
Jump backward	F1
Jump forward	F4
Fast backward	F5
Slow backward	F6
Slow forward	F7
Fast forward	F8
Stop (jump video to first frame)	F9
Frame backward	Alt + Shift + Left
Frame forward	Alt + Shift + Right
Move FoV left	Alt + Left
Move FoV right	Alt + Right
Move FoV up	Alt + Up
Move FoV down	Alt + Down
Move FoV to "Speaker's Location" of the segment	Alt + F
Previous segment	Page up
Next segment	Page down
First segment	Alt + Page up
Last segment	Alt + Page down
Find segment with video TC	Ctrl + Shift + F
Set TCin	Shift + Page up
Set TCout	Shift + Page down

Functionality	Shortcut button
Jump video to TCin frame	Ctrl + Alt + Page up
Jump video to TCout frame	Ctrl + Alt + Page down
Voice Over on/off	Alt + O
Set the FoV angle to "Speaker's Location" of the segment	Alt + Enter
Copy "Speaker's Location" of the segment to "Saved angle"	Alt + C
Paste "Saved angle" to "Speaker's Location" of the segment	Alt + V
Record video	Ctrl + alt + r
Import video	Ctrl + Alt + i
Preview selected recorded video	Ctrl + Alt + F2
Move selected recorded video left	Ctrl + Alt + Left
Move selected recorded video right	Ctrl + Alt + Right
Delete selected recorded video	Ctrl + Shift + F2
Split segment from cursor position	Ctrl + Insert
Join segment with next	Ctrl + Delete
Delete segment	Ctrl + D
Insert segment before	Ctrl + U
Insert segment after	Ctrl + Shift + U
Check TCs	Ctrl + Q
Forced preview	F11
Free preview	F12