User Manual

Project Acronym:	**IMAC**
Grant Agreement number:	761974
Project Title:	*Immersive Accessibility*

Accessibility Content Manager (ACM)

Authors: Enric Torres Feixas & Kimiasadat Mirehbar (Anglatècnic)

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement 761974		
Dissemination Level		
P	Public	X
C	Confidential, only for members of the consortium and the Commission Services	

Executive summary

ImAc project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 761974 and is looking for development of solutions that facilitate the procedure of production, transmission and presentation of access services on immersive media.

One of the main objectives – among many – of ImAc is a comprehensive environment for professional users with the aim to manage and control the workflow of access services production and distribution. This control system is required to act as:

- A centralized management and processing system for the production and distribution of access services such as subtitles, audio description and sign language

- A centralized system which handles and manages the necessary communication and notification among various levels of professional users of the ACM. The levels of users correspond to their role in the access service production and distribution workflow and typically are categorized as system administrators, managers, producers, providers and reviewers. This categorization is not unique and can get extended as required by the broadcaster.

CONTENTS

1. Introduction

One of the main objectives – among many – of ImAc is development of content manager with aims of managing the procedure of access service production for 360º media, that is for the production of subtitles (ST), sign language (SL) and audio description (AD) files. User can upload content, assign production tasks to access service producers (professionals or service providers of access service content), check the access service files produced and so on. By reading this document you will learn to manage the contents and their production workflow using the Accessibility Content Manager (ACM) tool of the ImAc project.

2. How to access the ACM

In order to access the ACM, 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 accesses ACM via the web browser (illustration 1) and enters username and password previously provided by administrator.

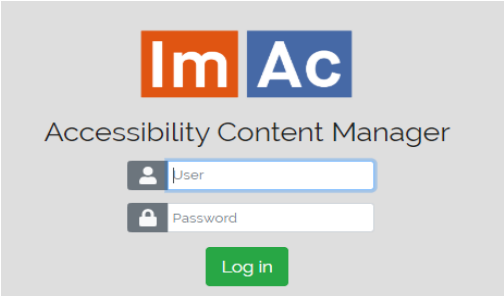


Illustration 1: ACM login page

3. User manual

In this chapter, a detailed user manual of the ACM (SM+CM+ED) is introduced.

3.1. Top menu

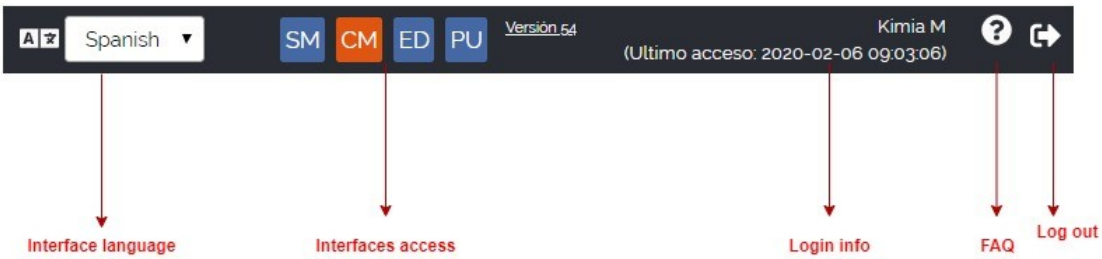


Illustration 2: Top menu

The user can open the different ACM interfaces with access rights by pressing the corresponding button in the top menu. Also the user interface language can be selected from this menu.

3.2. System Management interface

System Management is defined as platform administrative interface, and allows administrators and broadcaster managers with system administrative duties to control and manage the settings and permissions of professional users working in the ACM. Top menu-left hand gives access to different sub-sections of SM.

3.2.1. Users

An interface to view/create/edit users which is described in detail in table 1.

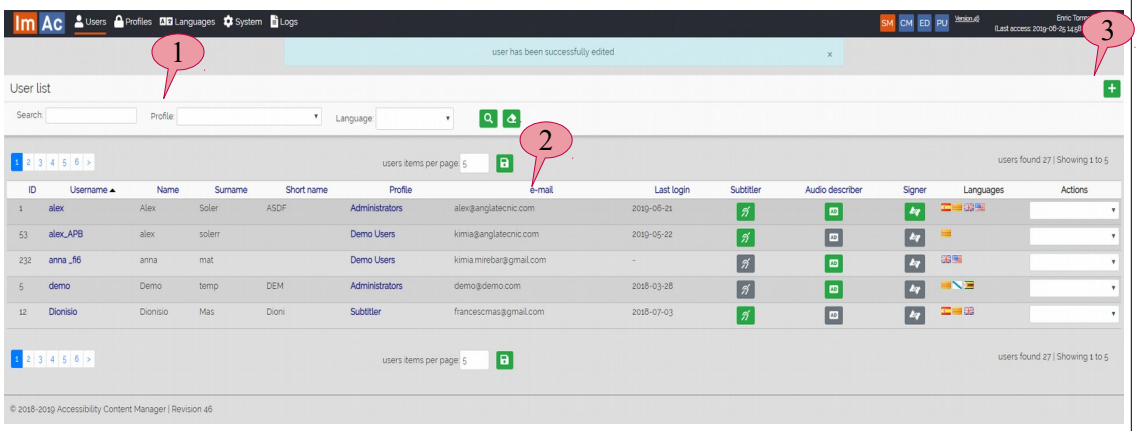
Users – SM	
	
1	With this tool, user can search through the existing users based on three different criteria: Free search, Profile type, Language
2	The list of users is available in this part. All of the registered users can be found here with their following information: • ID number (unique), Username (by clicking on it – in the case of having permissions of users edition – the logged in user is redirected to a form page for editing the settings belonging to clicked-on user – see illustration 3), Full name and short name, Profile type – email address, Last login date and time, The access service production tasks they are able to produce (ST, AD, SL), The languages they can create, Actions available (edition, deletion, block)
3	By clicking on this positive sign button, a new user can be added

Table 1: Users list

At the moment of creating/editing a user, the form shown in illustration 4 appears. This form needs to be completed in order to create/edit users. The required information in the form is typical and basic (access user and password, personal information, and access profile).

It is noteworthy that all of the users including broadcasters and access service producers are created here. In the case of a producer such as subtitler, audio describer or sign interpreter the corresponding options should be marked and also the languages they aim to work with (illustration 3).

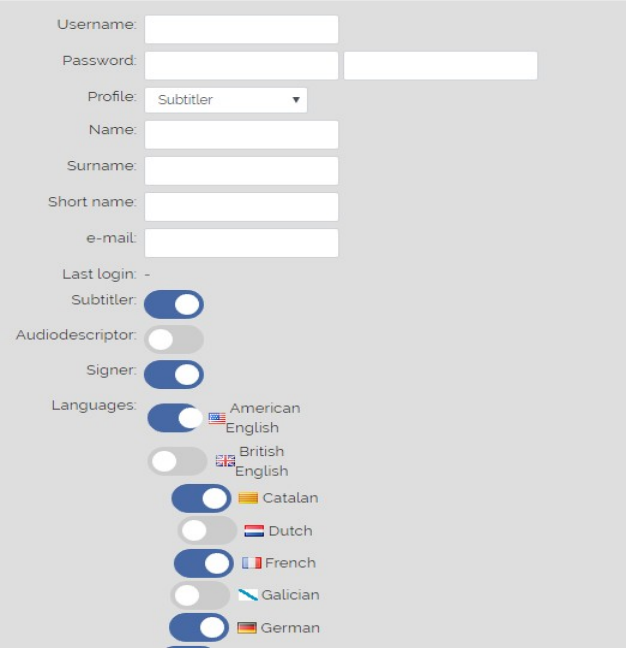
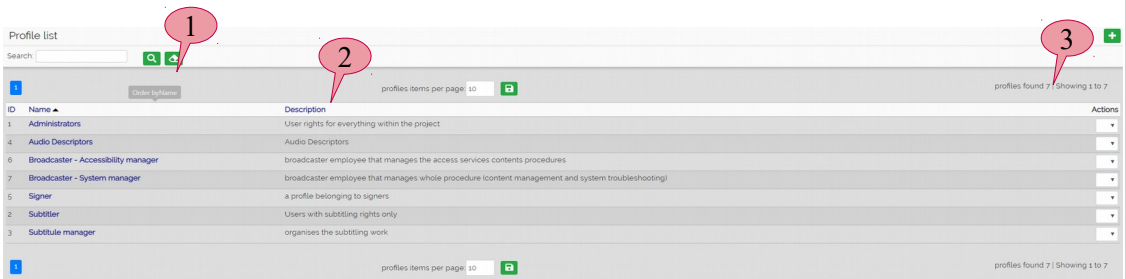


Illustration 3: User edition/creation form

3.2.2. Profiles

It is important for any system at this scale to define different profile types, because the level of permissions is different for each user depending on their duties, so there is a need to define different levels of access and permissions for groups of users. Profile types refer to different types of permission given to a user based on their access criteria. This is described in detail in table 2.

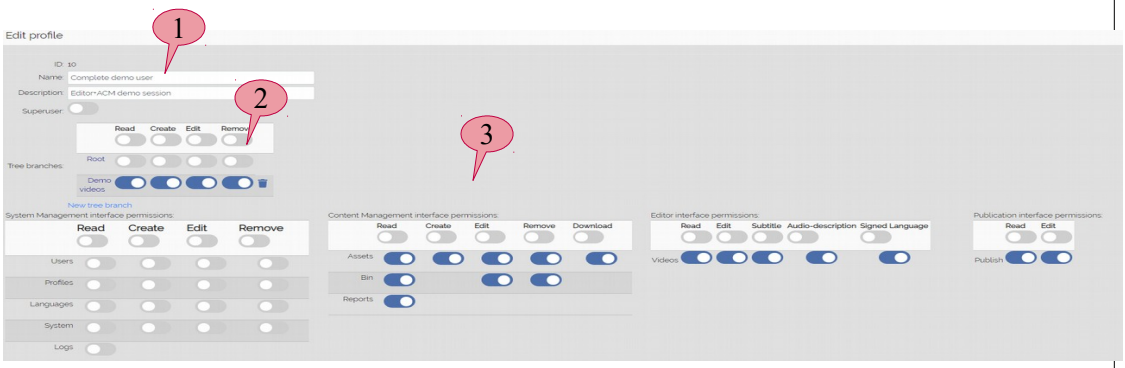
Profiles – SM		
		
1	With this tool, user can search through the existing profiles.	
2	A list of typical profiles on ACM with their description.	
	Administrator	User rights for everything within the project

Profiles – SM		
	Broadcaster – Accessibility manager	broadcaster employee that manages the access service procedures
	Broadcaster – System manager	broadcaster employee that manages system administration and troubleshooting
	Audio descriptor	Audio description producers (professionals or external service providers)
	Subtitler	Subtitle producers
	Signer	Sign language producers
	Subtitle manager	Organises the subtitling work
	Demo users	Profiles aimed to new users for testing purposes
3	By clicking on this button, the user can add a new profile	

Table 2: Profiles

By clicking on the positive sign button on the top right of the page, the user is redirected to a separate page consisting of a form for profile creation. In this environment, the technician can choose different capabilities and access permissions for the profile (reading, editing, deleting, downloading).

The detailed description of the profile form is presented in table 3.

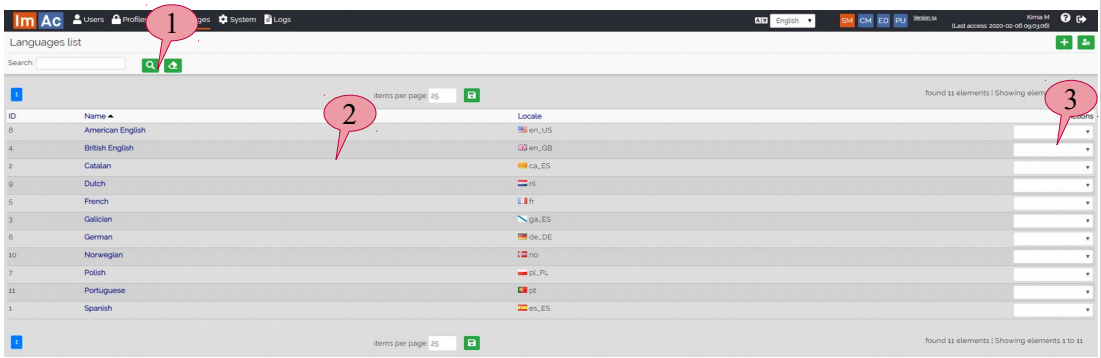
Profile form– SM


1	General information of the profile (name and description).
2	Access permission to different tree branches of CM, with possibility to choose among existing folders on the ACM as the root of new tree branch.
3	Various access permission to various sections of the ACM.

Table 3: Profile creation form

3.2.3. Languages

In this sub-chapter, new languages for the access service contents can be created or existing ones can be edited (table 4).

Languages – SM


1	With this tool, the user can search through the existing languages

Languages – SM	
2	List of existing languages with their locales, by clicking on the language name, the user is redirected to the edition page
3	Add a new language to this list and also creation of user-customized language if its not available in the list and its standard locale is know by the user as in illustration 5.

Table 4: Languages list

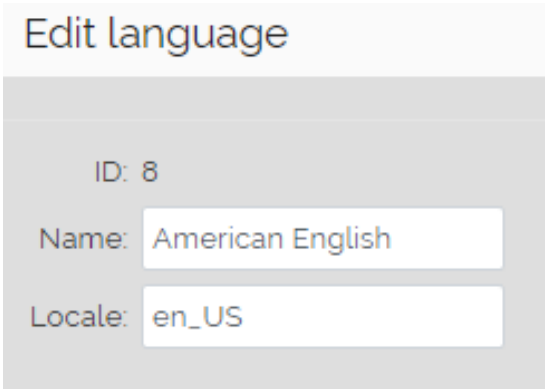
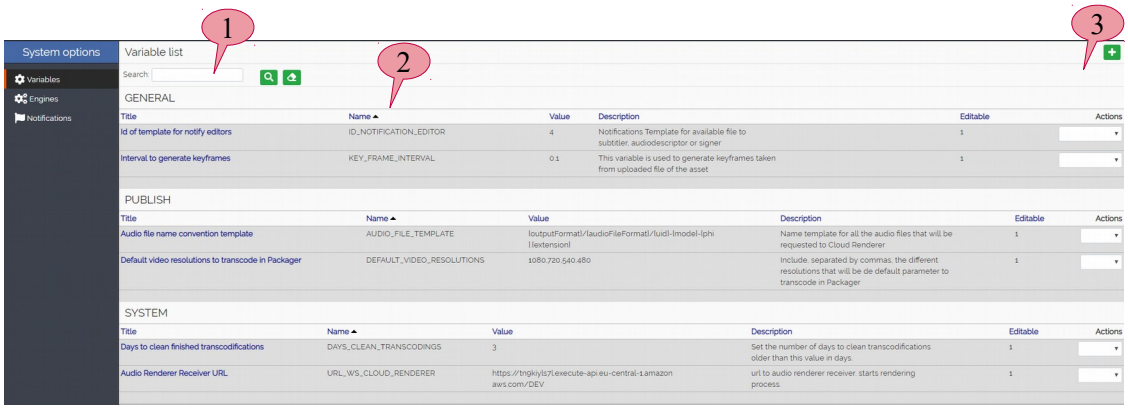


Illustration 4: User-customised Language creation form

3.2.4. System

"System" section corresponds to administrative actions done by system administrators or broadcaster system managers. It is divided into four parts which will be discussed respectively in tables 5, 6, 7 and 8.

Variables – System – SM



In this section some system variables can be set or modified, for instance during the installation and customization of ACM.

Variables are divided into three categories:

- **GENERAL:** corresponds to general interface variables.
- **PUBLISH:** corresponds to variables related to web service in general.
- **SYSTEMS:** corresponds to system variables.

1	With this tool, the user can search through the existing variables.
2	List of existing variables with their characteristics, by clicking on the variable's name, the user is redirected to an edition page
3	By clicking on the positive sign, the user is able to create a new variable

Table 5: Variables of system

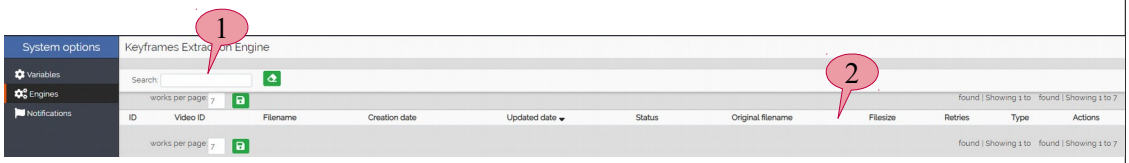
Engines – System – SM	
	
This section shows the working queues of the ACM engines (background processes without user interaction). A limited number of engines are developed for the ImAc project which can become more extended in the future.	
1	With this tool, the user can search through the existing engines.
2	List of existing engines with their characteristics.

Table 6: Engines of the system

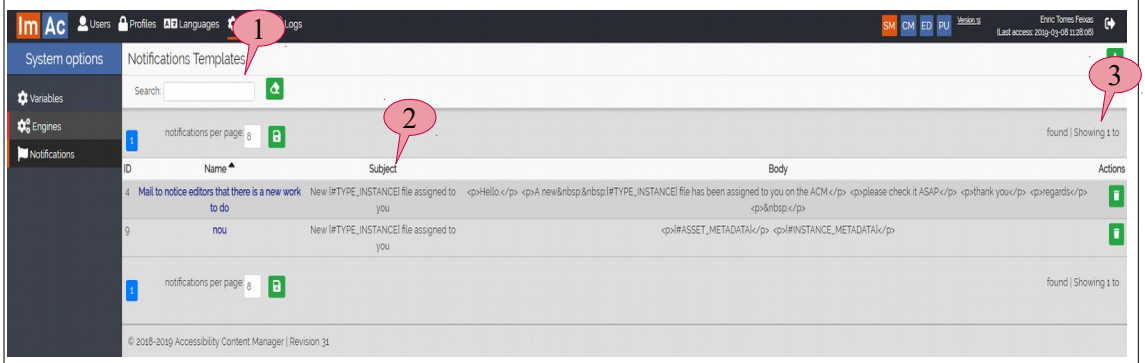
Notifications – System – SM	
	
This section lets the user configure notification and mailing templates using a special form. The form is shown in illustration 6.	
1	With this tool, the user can search through the existing notification templates.
2	List of existing templates with their name, subject and body, by clicking on the name, the user is redirected to an edition page.
3	By clicking on the positive sign, a creation form is opened.

Table 7: Notification templates list

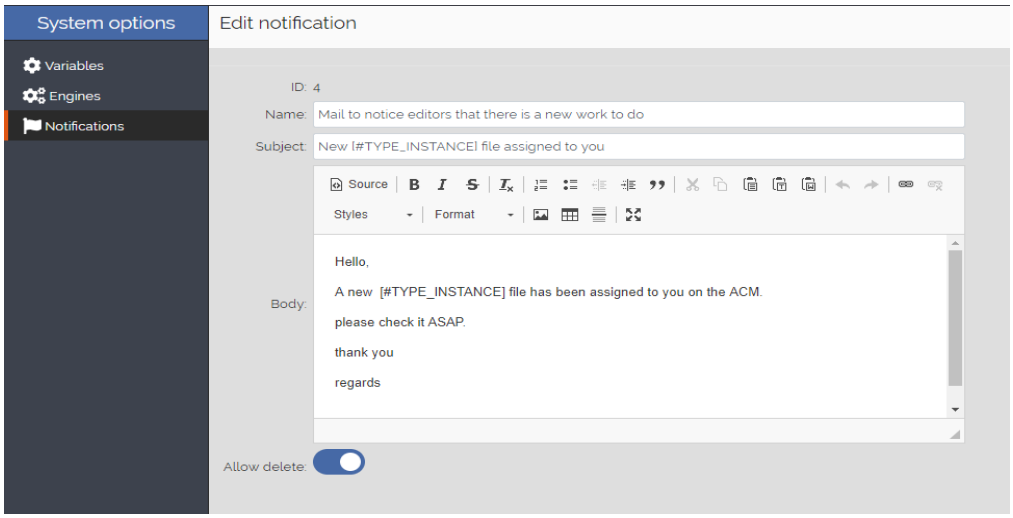


Illustration 5: Template edition/creation form

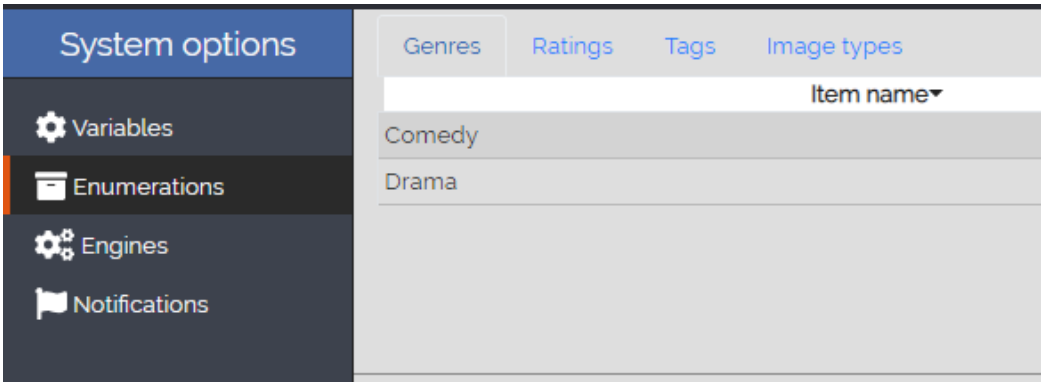
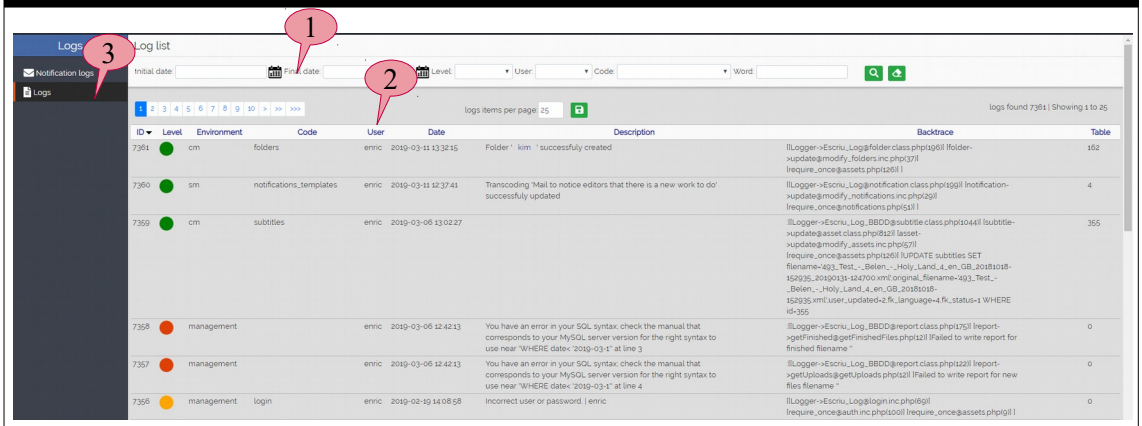
Enumeration – System – SM

A place to let users create customized enumeration variables and edit them as they wish. To the moment four metadata type are added: genres, ratings, tags, image types.

Tabla 8: Enumerations

3.2.5. Logs

Logs section can be significant for administrative tasks. Table 9 shows the interface.

Logs – SM

This section lets the user check the logs at the system level. All events happened on the platform are registered here with their useful data. These can be user, system, background and interconnection events.

1	With this tool, user can search through the logs based on various factors (date, user, section, level of event, code, word).
2	List of existing logs with their name, level, date, description and backtrace.
3	Notification logs are a list of notifications of logs sent to responsible person to the moment.

Table 9: Logs – SM

3.2.6. Scenario

In this sub-chapter, the following scenario is elaborated to clarify SM functionality. This scenario is an example on how to create a new profile for subtitle managers, setting the access permissions of this profile conveniently and then creating a new user based on this profile.

1. We enter the form (table 3) and we create a new profile named “Subtitle manager”.
2. This profile aims to people who want to manage the subtitling workflow.
3. Illustration 6 shows the specifications of this profile, note the permissions this profile has.
4. Next move, we go to User creation form to create a new user, now it is possible to assign the profile we just created to the new user, illustration 3 shows how it is done.

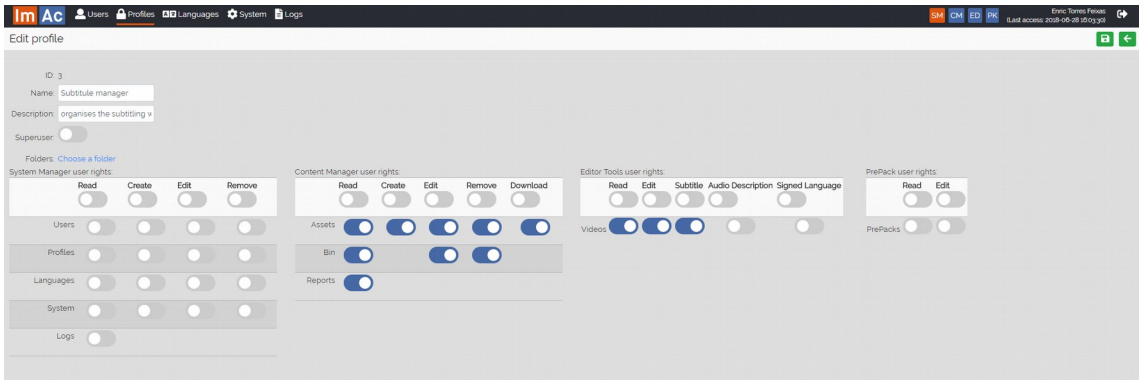


Illustration 6: Creating the "Subtitle manager" profile

3.3. Content Management interface

Content Management interface is the place where all the access service contents can be found, managed and controlled. It is divided into the following subsections that are explained in the next three sub-chapter:

- Assets – management of assets with their access service contents and production tasks
- Bin – a temporary bin to keep deleted assets
- Reports – stores statistical data and information about the CM

3.3.1. Assets

Due to the importance of CM and assets, this interface is going to be explained section by section. Illustration 7 shows assets main page.

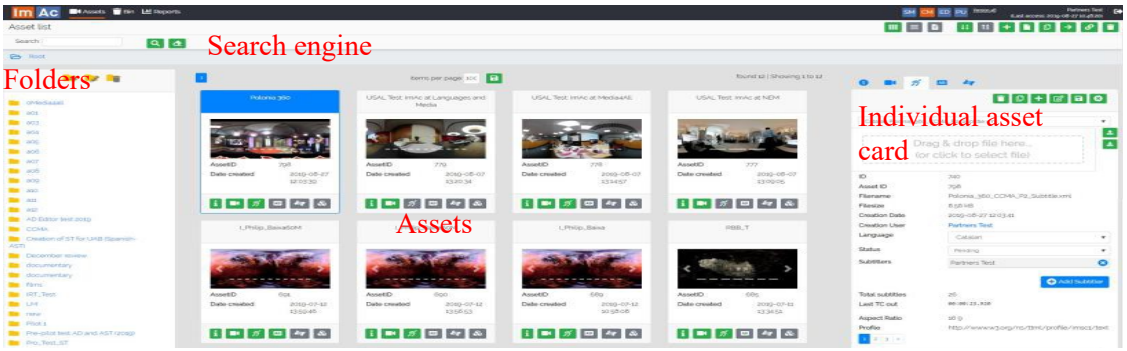


Illustration 7: Assets main page

The contents are organised in a structure called "Assets". Each asset is created in order to manage the production and cataloguing of access service files (ST, SL, AD) in different languages for one 360º programme.

It is both possible to create a **single** asset by the button on the top right or create **multiple**

assets via another button in the same place (see Annex I). Assets can also be created automatically by the background process of importing LQ videos from a FTP folder.

At the creation phase, the user is required to upload the 360º video and enter some metadata and to finally save the action. As a result an asset is created as in illustration 8. This illustration demonstrates how an asset looks like. As seen, some icons are still in grey which means there are no files available from that type of content. However, video is uploaded by the user so it has turned green.

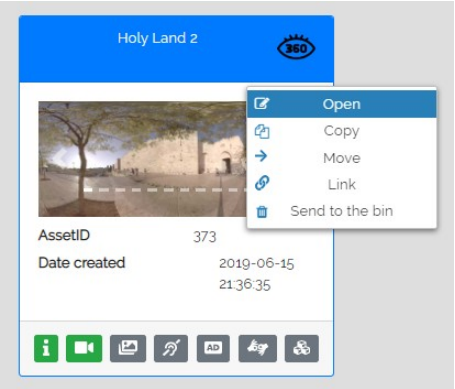


Illustration 8: Asset card

By right-clicking a user is able to perform typical actions on the asset such as moving it to another folder, copying it to another folder, linking it or sending it to the bin (all actions can be done by using complementary buttons on the top right – see Annex I). Additionally, It is also possible to open the asset card. Next we are going to see what is inside an asset card known as asset form.

3.3.1.1. Asset forms

As demonstrated in 3.3.1 the assets list contains all of the available assets with their metadata and files. Table 10 shows what is observed when an asset form opens.

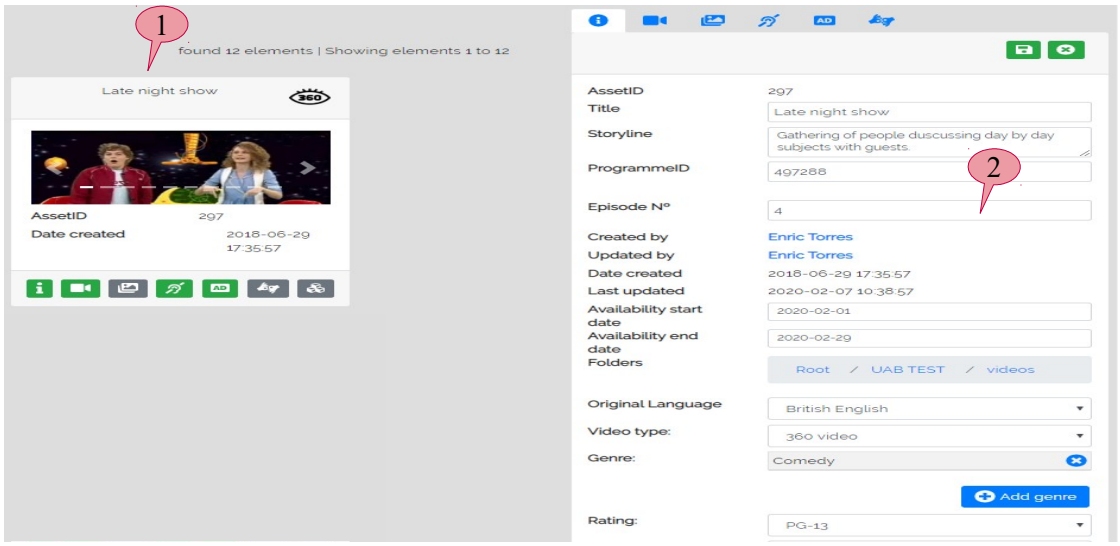
Asset card and its form – Assets – CM	
	
1	The asset card is shown with a video preview, basic information and the availability of each access service (when the icon is green it means that al least an access service file is available right now and when it is grey it shows that it does not exist any)
2	General information form with: 1. Title and comments 2. ID of the programme 3. User who has created it with related dates 4. the directory of the asset in the folders 5. Other useful metadata
	Access to the general information form (see table 11)
	Access to the video form (see table 11)
	Access to the images form (see table 12)
	Access to the subtitle form (see table 13)
	Access to the audio description form (see table 13)
	Access to the sign language form (see table 13)

Table 10: Asset card and its forms

Table 11 demonstrates in detail the video form of an asset.

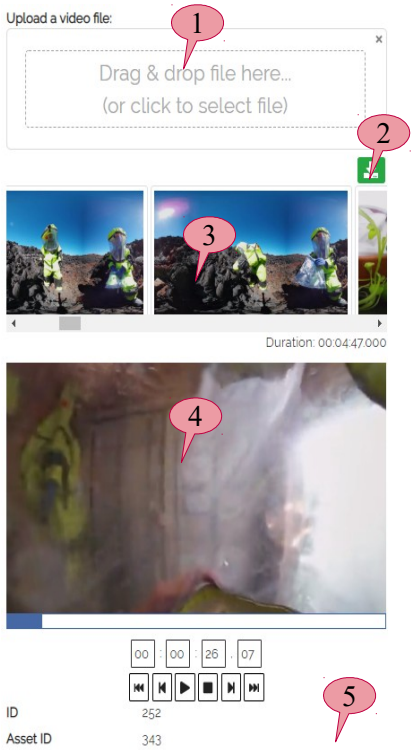
Video form – Assets – CM		
	The left image shows the form for the video instances:	
	1	A place to upload a new video file from PC
	2	A button to download the existing video
	3	A preview of the video shown in keyframes from it. Clicking on a keyframe takes you to that moment of the video. Right click shows you options
	4	Video player but in a small scale along side with video control buttons (play, pause, stop, etc.)
	5	General information of the video: • ID (unique) • Asset ID (unique) • File name • File size • Creation date • Creator • Video duration

Table 11: Video form of an Asset

The next form is for “Images”. Every asset may contain several images which either can be uploaded by the user or be chosen among video frames. Table 12 shows more details.

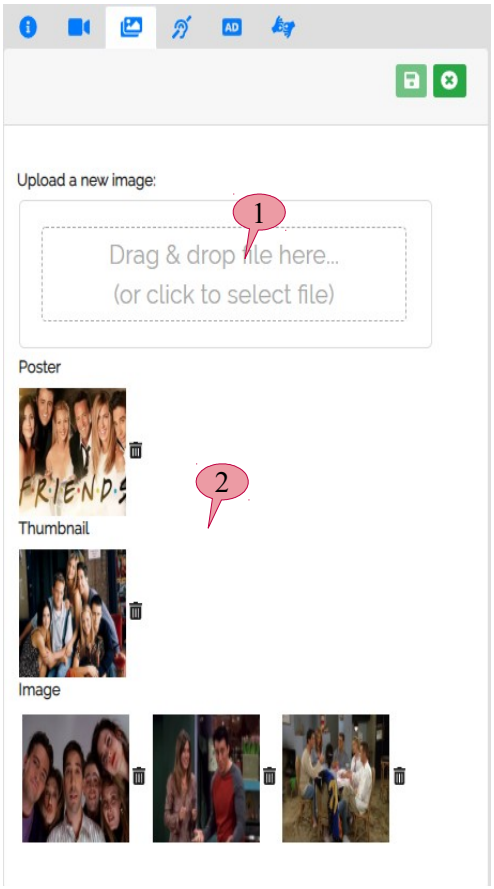
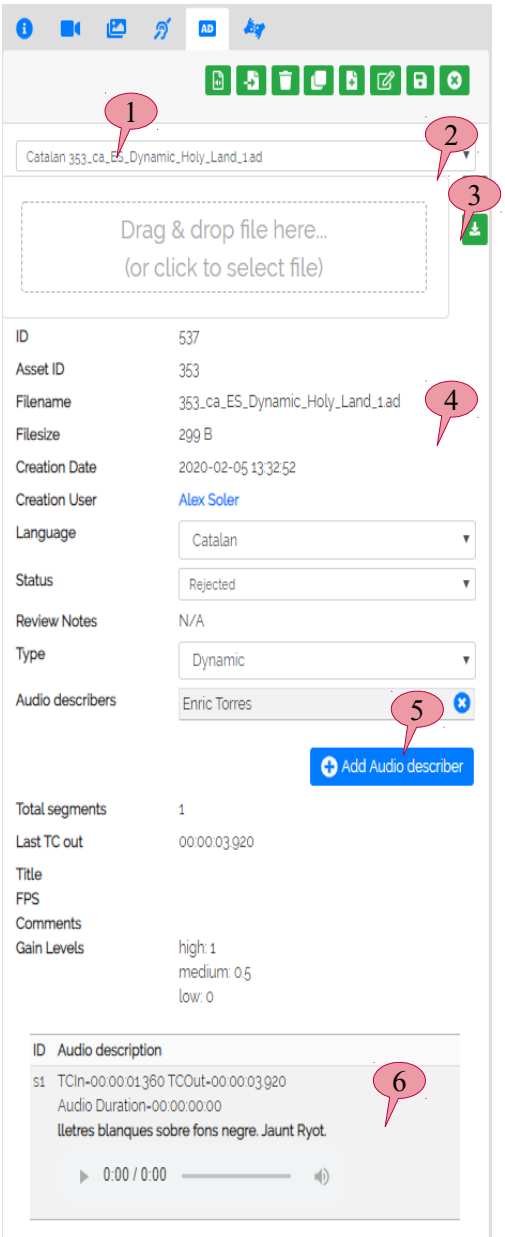
Images form – Assets – CM		
	The left image shows the form for the image instances:	
	1	A place to upload a new images file from PC. When the image is uploaded to the server, the user needs to choose a type for it. The image types are configurable in enumerations in SM. However, Thumbnail and poster are by default added to the system.
	2	Image gallery, possible to view/delete images
	3	In addition to uploading images from PC, it is possible to choose image from video keyframes (see table 11). By right clicking on a keyframe, the user can choose an image type and send it to image gallery.

Table 12: Images form of the Asset

The remaining forms of the Asset for the Access Service contents (ST, AD and SL) are quite similar. In table 13 we see what these forms contain. We have chosen AD in the table and have eliminated ST and SL for convenience, as AD form contain all of the information and it is the one with more buttons and options (some specifics of the ST and SL are also explained in table 13).

Access Service form – Assets – CM



The left image shows the AD form:

1	A place to choose the preferred AD file (instance), because an asset can contain multiple AD files by language and type
2	A button to upload an AD file with various formats. To this date following formats are available for ACM: **ST:** .XML – .SRT – Web-VTT – EBU-TT(D) **AD:** .ad – .nar – .zip **SL:** .sl
3	A button to download the existing file (the one selected in the drop-down list), with option to be exported in various formats
4	General information of the file: • ID (unique) • Asset ID (unique) • File name • File size • Creation date and user • Language • Status of work (see table 14 for details on task status) • Type of AD (static, dynamic, classic)
5	A button to a dialogue to assign the production task to a producer (in this case to an audio describer, in the case of the ST and SL forms to a subtitler and signer respectively). When assigned, the producer is able to see the task in their working space (ED).
6	Preview of the AD file
	Deletes the file

Access Service form – Assets – CM		
		Copies (Clones) the file with existing TC and segments with possibility to choose new AD type and language
		Adds an empty AD file to be produced (possibility to choose AD type and language)
		Opens the corresponding editor with the LQ video and AD file.
		Saves the changes (if no change is detected, the button is disabled)
		This button which only exists in the AD form, lets the user import mp3, wav and m4a audio tracks. These tracks are converted into AD files automatically with segments (at the moment of importing, choosing type and language is possible). The silences are detected to determine time codes for conversion of this track to an .ad file
		This button only exists in AD and SL form and it mainly serves in following conditions: • When in AD, it lets the user choose from an existing subtitle files in the same asset to be imported as an AD file with the same timings and script. • When in SL, it lets the user choose from existing subtitle files in the same asset to be imported as an SL file. This import helps the user to have the same timing and script from ST in order to transform the format to a sing language file and it facilitates the procedure.

Access Service form – Assets – CM		
		Closes the form (warns the user if they have unsaved changes)

Table 13: Access Service form of the Asset

Table 14 explains in details the different status types any access service task would bear. These status are marked by the user and corresponds to the condition in which the task is in.

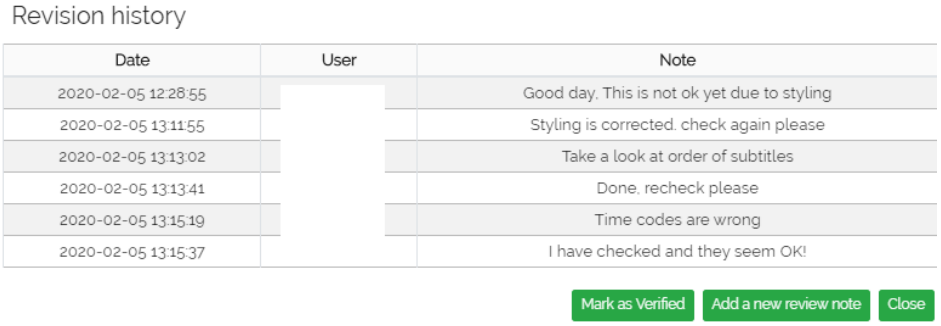
Access services task status	
Pending	At first all instances are at this status by default and when created.
In progress	Once the producer has started the work the status changes to “In progress”.
Completed	When the producer finishes, they can change the status to “Completed” via ED interface.
Verified	After being completed the broadcaster’s Quality Assurance Department needs to either validate or reject the file after reviewing it. If everything is correct, the status will change to “Verified”.
Rejected	After being completed the broadcaster’s Quality Assurance Department needs to either validate or reject the file after reviewing it. It is possible that they have some comments on the work and not satisfied with the result, for that they change the status to “Rejected” along a rejection note for the producer. In this case the task will automatically be assigned again to the producer who will be able to answer the rejection note and proceed to the completion of the task. An example of how a revision history of a task looks like is seen in below figure. This dialogue appears when clicked on the “Review notes” in the asset card (see table 13). 

Table 14: ACM access services status

This section allows the user to manage and catalogue the assets and also their contents and properties individually. How an asset is managed and edited was explained above. Lets take a look on how the assets are catalogued. In addition to actions and buttons explained in the previous chapter and also In Annex I, there are two ways to catalogue assets as indicated in 3.3 introduction:

- By metadata (when in metadata view), so to find an asset the user needs to use the search bar on top.
- By folder tree (when in hierarchical view), so only assets in the folder are shown.

3.3.1.2. Asset cataloguing

Folder tree of CM have the objective of creating a more flexible and organised interface. They can contain assets in its folders which are editable. The folders which are accessible by the user are those that are in the tree branches defined and configured in the profile of the user from SM (see table 3). The tree branches which are granted access to the user will appear on top of the CM interface page (see tree branches list in illustration 9). If the user uses the search engine on the top, only the results in the specific folder will appear as a search result.

It is possible to create/delete/edit/move/copy folders and navigate through them. Navigating by folder comes in handy when the work volume of broadcaster is high and the programmes are numerous, so the user can organise the work based on criteria they look for (based on schedule of emission, importance, channels, etc.).

There are basically two methods to perform basic operations on folders such as edit, copy, etc: by buttons on the top of of the folder tree or by right-clicking on any of them.

There is a small folder icon on the left of the tree branches list which lets the user switch between metadata view and hierarchical view (see folder icon in Illustration 9). When the icon shows a closed folder the metadata way is selected, when it is an open folder the hierarchical way is selected. If the user uses the search engine on the top when in this metadata view, the search will be performed in all the database but only from the folders that the user has access rights.

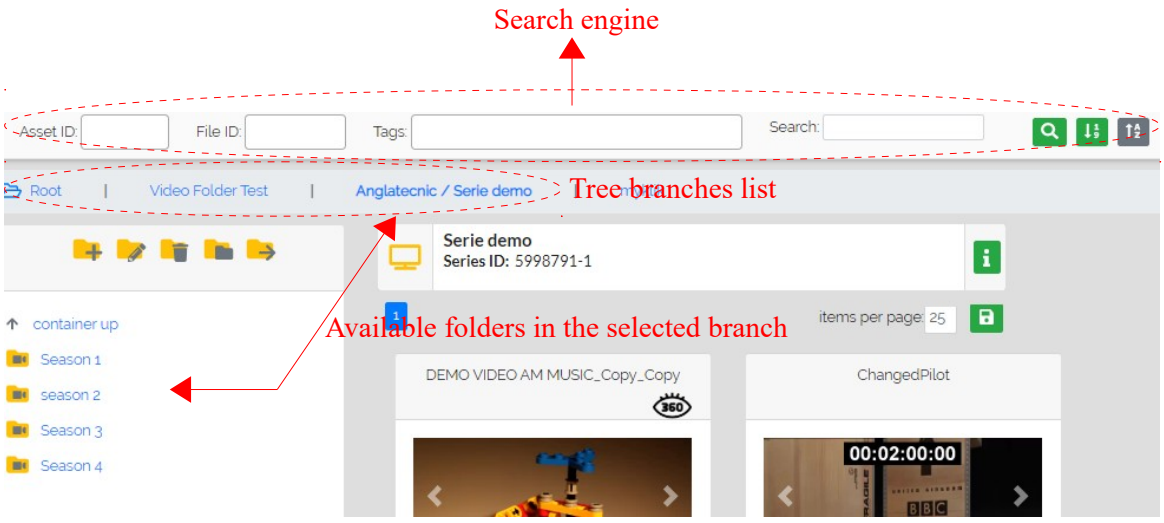
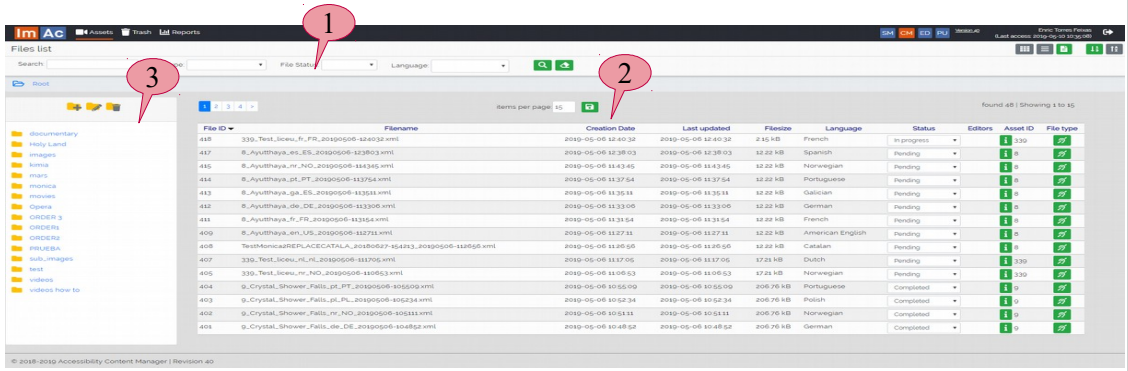


Illustration 9: Folders and branches in CM

3.3.1.3. File view

In addition to the points mentioned in previous chapters, CM gives the user the possibility to navigate through assets and their instances in three different modes. The default mode elaborated earlier views assets as a collection (“List view “or “Grid view”). However in addition to these, it is possible to switch to a “File view” that shows not assets, but all the access service files available on the folder. By file, we mean three different access service file types available (ST, AD and SL). Like assets, files can either be displayed on metadata view or hierarchical one. Table 15 displays more information in this sense.

This view is very useful for the quality assurance (QA) department users that need to find the files that have the “completed” status and therefore they can review them and set the new status to “verified” or “rejected”.

Assets file view – Assets – CM

This view gives the user all the available access service files on ACM.
	This is the button that gives the user this view on the top menu.
1	On the top of the page, there are search boxes with following criteria: 1. Free search 2. File type which can be either: I. Subtitles II. Audio description III. Sign language 3. File status 4. Language

Assets file view – Assets – CM	
2	List of files with following information and the possibility to order by them: 1. ID 2. File name 3. Creation date 4. Last updated 5. File size 6. Language 7. Status 8. Editors 9. Asset ID 10. Type
3	It is possible to navigate through files by folder hierarchy as well

Table 15: File view

3.3.2. Bin

Bin acts like a recycle bin for the system. Contents which have been moved to bin cannot be edited or changed but it can be restored back into Assets or can be deleted forever.

3.3.3. Reports

In this subsection, we can checkout the statistical data and information showed in an interactive manner that can be understood by all users. To this date, three charts are displayed:

- Downloaded files
- New files
- Finished files

We can search through this data by date. Illustration 10 shows the page clearly:

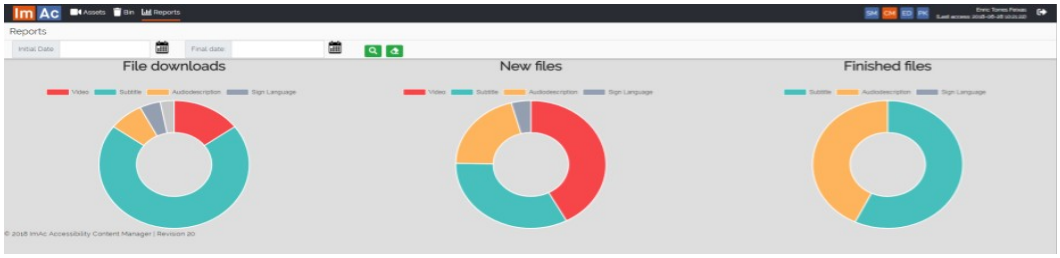


Illustration 10: Reports

3.4. Editor interface

This is the interface specially destined to access service producers and lets them view their previously assigned tasks, search through them and more importantly gives them direct access

to ImAc editors (there are separate user manual for each ImAc Web Editor such as Web ST Editor, Web AD Editor and Web SL Editor). Table 16 shows more details.

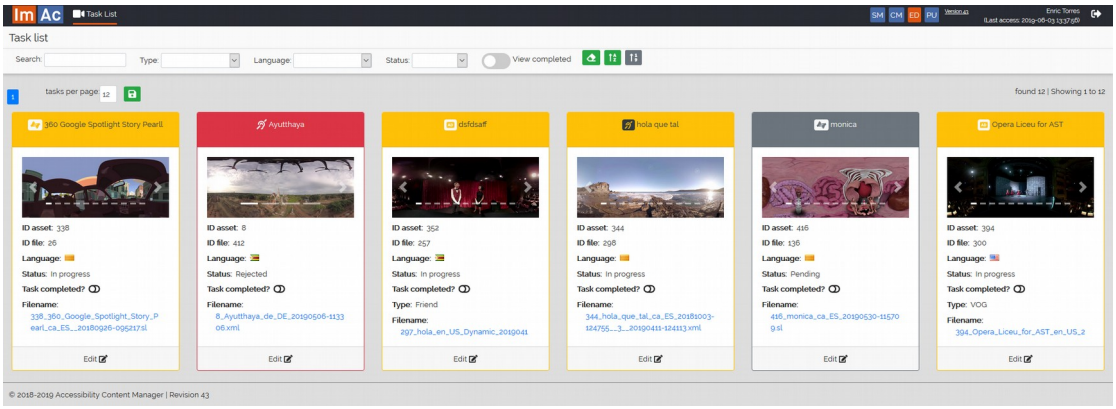
Task list – ED	
	
The page contains a list of previously assigned tasks to the producer who is viewing the page.	
1	The possibility to search through tasks based on: • Type (ST, AD, SL) • Language • Status
2	Existing tasks in shape of cards. The above colour of each card reflects the current status of it and also type of it in form of an icon. While in its bottom, characteristics are seen. When the production task is completed, the producer should mark the corresponding option in order to change the status. When a task is rejected, the producer can view the reasons of the rejection by clicking on the status and fix the issue or send a justification note to the content manager. The most below button (“Edit”) takes the user to the corresponding editor with the video and the file to be produced.

Table 16: Task list via ED

3.5. USER SCENARIO

Now that the reader is familiar with every section of ACM, we will explain how it works through a given scenario. The complete workflow is shown In illustration 11.

1. When the broadcaster requires access services for a programme (point 1 of illustration 11) an asset corresponding to that programme is necessary in CM and it can be created in either of the following ways:

    a) Manually using the top right buttons to create a new asset (see annex I), uploading the LQ video of the programme and editing its metadata.

    b) Automatically by receiving a LQ video of the programme via FTP (point 2 of illustration 11).

2. After the asset with the LQ video is created there are some typical operations for assets like moving, copying, linking and erasing.

3. The user goes to the desired access service form when a new access service content is required, creates a new instance (empty access service file), and edits its metadata (see table 13).

4. From the new instance, user assigns the task of producing the access service content (editing/producing the access service file) to one or various producers such as subtitlers, audio describers or signers depending on the access service type (point 3 of illustration 11).

5. From the ED interface a producer (professional or external service provider) completes the task of access service production that has been assigned to them (point 4 of illustration 11) and when the access service production is finished, the producer changes the task status to “Completed” (point 5 of illustration 11).

6. Once the production task is set to “Completed”, the access service content is ready to be reviewed and validated by the broadcaster’s quality assurance (QA) department. One good recommendation to the QA user is to change the CM interface to “File list view” and order the files by their status to find out which tasks are completed in order to review them. After review they either change the status to “Verified” or “Rejected” alongside a rejection reason note to the producer (point 6 of illustration 11). When rejected, the task is automatically assigned again to the producer with the rejection reason.

7. Once the access service files are validated by the broadcaster (verified status), the broadcaster’s play-out system can access them when the 360º programme is published or broadcasted (point 7 of illustration 11). For this it is necessary that the platform is fully integrated with the broadcaster’s systems.

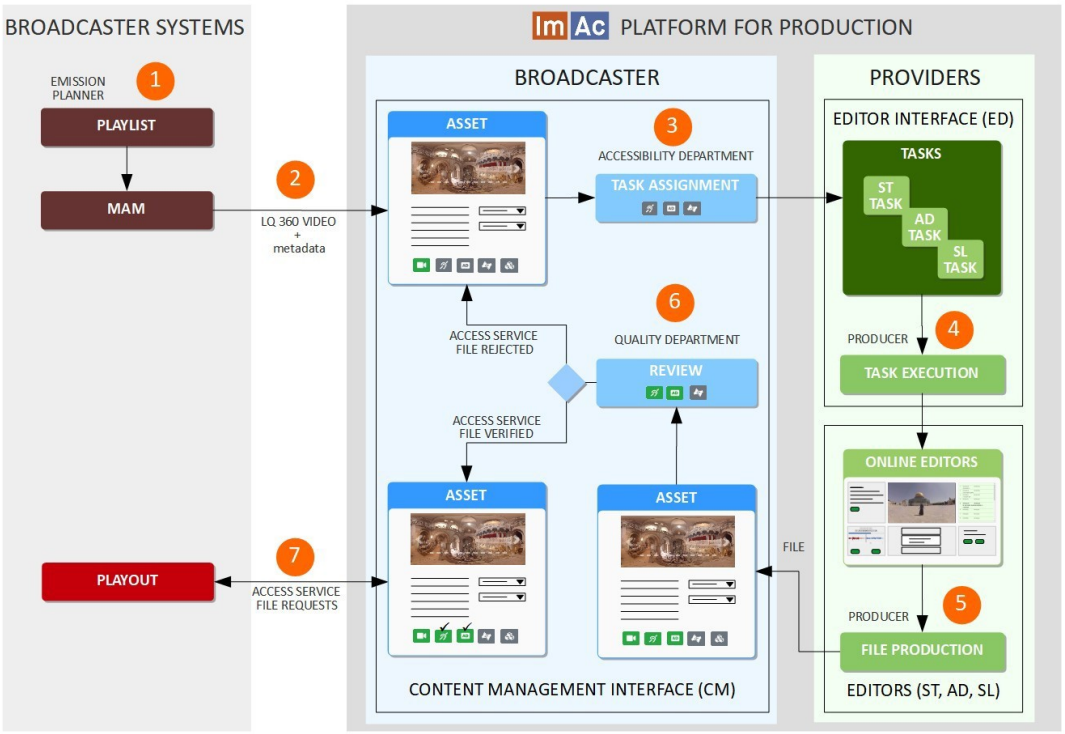


Illustration 11: ACM workflow

ANNEX I: ICONS GUIDE

Icon	Usage
	Subtitle instance
	Audio description instance
	Sign language instance
	Image instance
	Video instance
	General asset information
	Sorts assets by numerical order
	Sorts assets by alphabetical order
	File view switch button
	Changes the view of assets by grid view or list view
	To be used when the user wants to add a new asset
	When the user wants to import assets from FTP where the high resolution the HQ video resides
	The user selects one or various asset (for multiple selection use the Ctrl key) and with this button chooses the destination among folders for it then copies it to a new path
	The user selects one or various assets (for multiple selection use the Ctrl key) and with this button chooses the new destination among folders for it then moves it to a new path
	A button to “Select all” assets in the page
	Via this button, the user can upload and create **multiple** assets using a dialogue

Icon	Usage
	This button lets the user edit **multiple** assets common characteristics at once
	The user selects one or various assets (for multiple selection use the Ctrl key) and with this button create links to them
	The user selects one or various assets (for multiple selection use the Ctrl key) and with this button erases them
	Publish assets with at least one verified access service file (it turns blue)
	Save changes (when no change is made, the button is disabled)
	Copy access service instance into a new language (TCs are kept)
	Redirects the user to the Web Editors running the current instance
	Import new AD/SL file from an existing ST file
	Import an audio file from PC in order to use it as an AD instance
	Close asset form
	Upload instance
	Download instance
	Add a new instance
	Restore the asset inside bin back to asset list
	Delete the asset in the bin forever
	Add a new folder
	Edit folder
	Send folder to the bin
	Copy folder

Icon	Usage
	Move folder