Module 3. Audiovisual Processes

Unit 3.1 Recording

3.1.1 What is it? Concept

Audiovisual recordings are a shot or sequence of images, with or without sound (Art. 120.1 TRLPI) (Villarejo, et. al, 2002, p. 278).

We can use different terms to describe what a recording is. For our purposes, we define a recording as audio and video material captured by a camera, and the footage is used to analyze a sporting event.

How important is a good recording?

It's our eyes after a live viewing

We inherited a culture of analysis based on written notes and the so-called "clinical eye" of the observer. The judgement, assessment and analysis of games, training sessions and other situations within a soccer team were essentially based on that.

Nowadays, with new technologies applied to analysis, together with the benefits that our own audiovisual productions provide, the spectrum of possibilities has widened. Pencil, paper and live viewing have become one of the many tools within the general process of analysis.

A recording, or rather, a good recording, will allow us to assess everything that happened during the event, as many times as necessary. In this way, we are able to remember and confirm what is left in our memory (which tends to fail more than we think) as many times as we want.

1. **What do we record?**

What do we record in a soccer game? We record our opponents and our own team.

Recording opponents provides us with material to gain knowledge about them, to plan our training sessions and to prepare the next game. On the other hand, recording our team allows us to evaluate our players individually and our team as a whole. In addition, it helps us to correct undesirable behaviors and to enhance everything we observe through the recordings.

Figure 1: What do we record in a soccer game?

Source: prepared by the authors.

2. Using the recordings available to us

What do we need to know?
It is necessary to plan all the material that we are going to record in advance. We must also plan all the material that others are going to record and that we will have access to.

The main characteristics of using internal recordings are:

Internal recordings

- **Personalized recordings**: recordings that we can control because we are the ones who decide how and which way we record them.
- **Anticipation of different situations**: we assess what type of recording we will make and anticipate what the environment offers us.
- **Personalized projects**: we can record specific situations that are requested of us and as required.
- **We have decision-making power over them**: we can decide on absolutely all the recording parameters.

The main characteristics of using external recordings are:
External recordings:

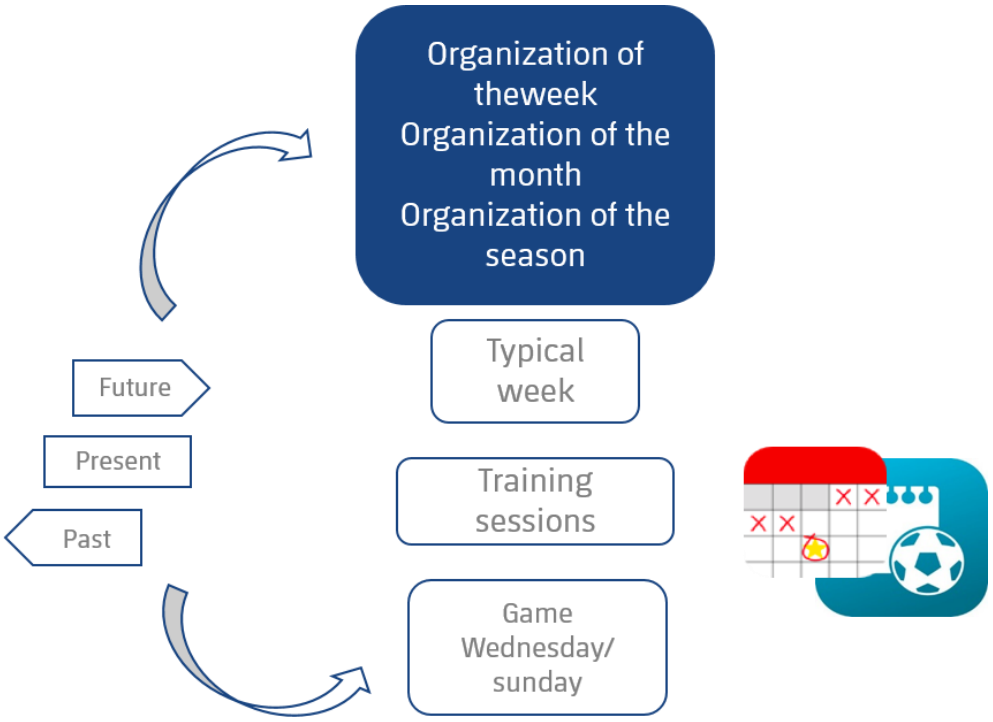
- TV or specific platform recordings: **they do not match the desired parameters.**
- **Recordings from colleagues from other teams**: it is very important to form good relationships with our counterparts on other teams, so we can obtain and access

professional recordings similar to ours. Likewise, we must also share our recordings in order to receive theirs.

- **No decision-making power**: it is the biggest problem when depending on recordings that aren't done by us; we aren't able to decide what is in the recording, we must be satisfied with what they give us and try to make the most of it.

It is very important to plan and communicate with teammates in order to have total control of all the processes to be followed.

Figure 2: Planning and communication

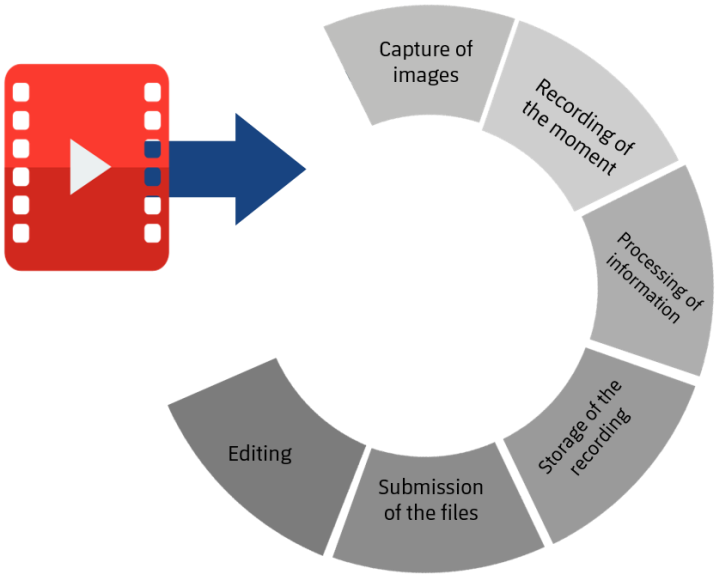


Source: prepared by the authors.

3.1.2 What is video?

Video is the technology that, through digital or analog electronic media, generates a sequence of images that represent scenes in motion.

Figure 3: Benefits of video



Source: prepared by the authors.

Any message can be saved on video, understanding it as a container. AUDIOVISUAL LANGUAGE has a potential and versatility that is difficult to compare with different digital formats (Polavieja, 2013).

The video is subject to two conditions:

- The duration of the message to be transmitted.
- The question - how do we attract the attention of our players?

Apart from these conditions, the audiovisual format has few limitations. Using this means, if you have sufficient creativity and strategic vision, you can communicate and transmit any idea or proposal in an extraordinarily powerful way (Polavieja, 2013).

The ability to combine moving and static images, text and sound, makes it an excellent medium to transmit and set all kinds of concepts and emotions.

Moving images and sounds generate attention

It is important to bear in mind that the same message can be transmitted in different ways, according to the intention, which can lead to many different interpretations of it. It is very important to keep 3 aspects in mind:

- What do I intend to convey? / What is my intention?
- Type of language used and if there is a certain mastery of it.
- The effect or response it causes.

Technique alone does not make a good video; the important thing is the professional who uses the technology, how he/she uses it and for what.

If our expression and creativity is genuine, the technical deficiencies won't matter much in this case.

For all these reasons, it is absolutely necessary to take advantage of all available resources so that our players have a better understanding of the message we want to convey.

We are responsible for making an audiovisual product that can be understood not only by us (because we know what we want to show and we already have the idea internalized), but also for those who will receive the information to internalize it in a real and fast way.

Figure 4: Using available resources to deliver the message we want (part 1)

Source: Prepared by the authors based on Edit-3D software (RT Software Ltd., 2019).

Figure 5: Using available resources to deliver the message we want (part 2)

Source: Prepared by the authors based on Edit-3D software (RT Software Ltd., 2019).

3.1.3 Shot: definition

When we talk about the capture of an image, a shot is understood as the proportion of that image occupied by the main object/subject with respect to the total captured space (near or far).

So, if the frame is the set of elements, we can say that the shot is how much the main element occupies in relation to the set.

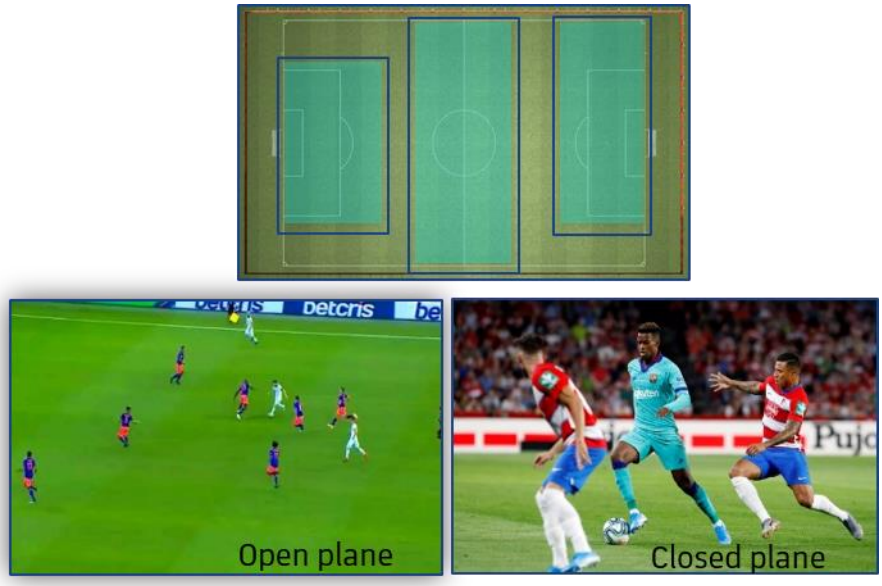
To classify the types of shots, a person is used as a reference. Shots can be: long, medium and close (from wider to closer up).

Wide shots and close-up shots

1.Wide: a greater number of elements is included, although with few details
2.Close-up: a fewer number of elements, but the detail is greater (Guadalinfo, 2016, p. 1)

With respect to the size or scale of the shot, the reference measurement, in soccer, is the playing field.

Figure 6: Size and shots



Source: Prepared by the authors based on [Untitled image of a wide shot] (2019ª) https://es.besoccer.com/noticia/messi-juega-solo-en-la-seleccion-y-esta-jugada-lo-demuestra-655805 and Ruiz, 2019a. Own, unpublished archive.

The choice of each type of shot is determined by the moment of the game we want to see, as it gives a different meaning to our viewing.

Figure 7: Close-up Shot

Source: Ruiz, 2019b. Own, unpublished archive.

Figure 8: Wide shot

Source: [Untitled image of a wide shot]. (2015b). Retrieved from https://www.ertheo.com/blog/vista-pajaro-entrevista-david-powderly-entrenamientos-futbol-drones/

As far as movement is concerned, the static position of the camera and its possibilities of movement can be differentiated.

Which shot do we normally use in our recordings?

Panoramic shot: There is a static view that follows the action of the game; the only movement that takes place is on the same axis of the camera, but the camera itself doesn't move.

Figure 9: Panoramic shot

Source: Prepared by the authors based on Edit-3D software (RT Software Ltd., 2019).

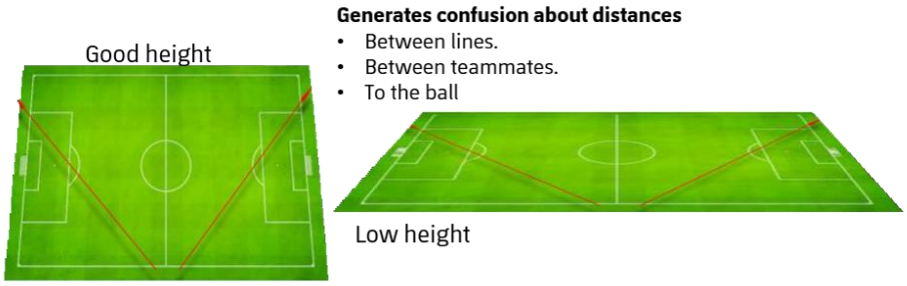
When deciding which types of shots to compose to have the material exactly as planned, the positioning of the camera is critical to be able to value an aspect of great relevance: perspectives.

3.1.4 Perspective

The misuse of a shot can lead to the final product being ineffective, which would make us lose much of the information.

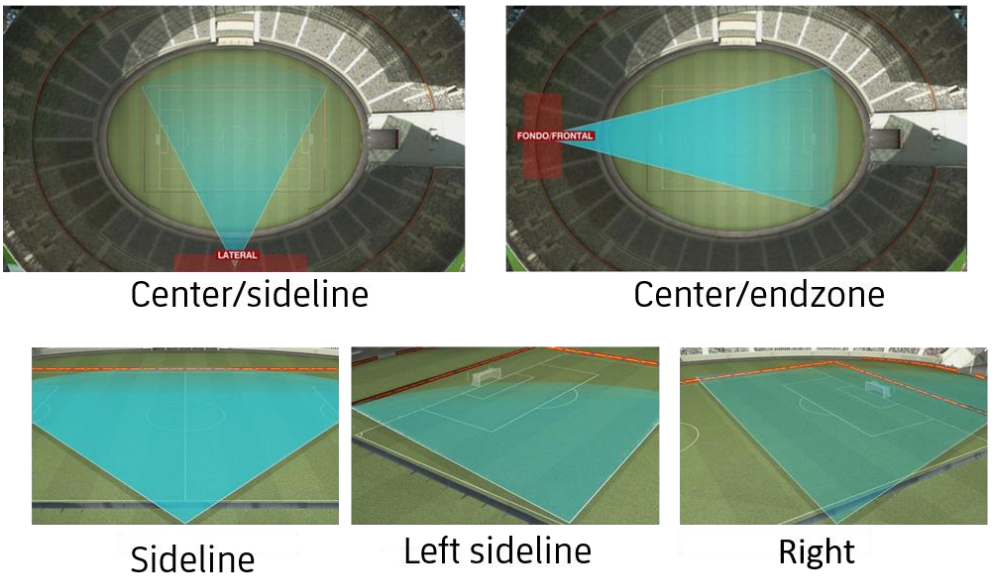
Figure 10: Using perspectives

Fig. 10



Source: prepared by the authors.

Figure 11: Example of camera locations to get different perspectives of the playing field



Source: Prepared by the authors based on Edit-3D software (RT Software Ltd., 2019).

3.1.5 What do we record with?

We currently have an infinite number of technological options to record whatever we

need. The market is not limited to just one camera, but is constantly expanding with multi-camera systems, complete panorama generators and an infinite number of different solutions.

It should be noted that everything depends on the budget and resources available. However, nowadays the range is so wide that anyone who wants to record an event can do so.

Therefore, we must be aware of the constant updating of the products offered by the market.

Recording media. Camera elements

- A wide range of cameras already come with a built-in zoom lens or variable focal length lens.
- If not, it is called a fixed lens (sports cameras).

It is very important to know the difference between an optical zoom and a digital zoom. That way, we can make the right decision when purchasing a camera and its lens type.

Figure 12: Optics and lenses

Source: [Untitled image of a camera lens]. (undated). Retrieved from https://www.xatakafoto.com/sigma/sigma-anuncia-de-golpe-hasta-siete-objetivos-de-la-serie-prime-art-para-montura-sony-e-full-frame

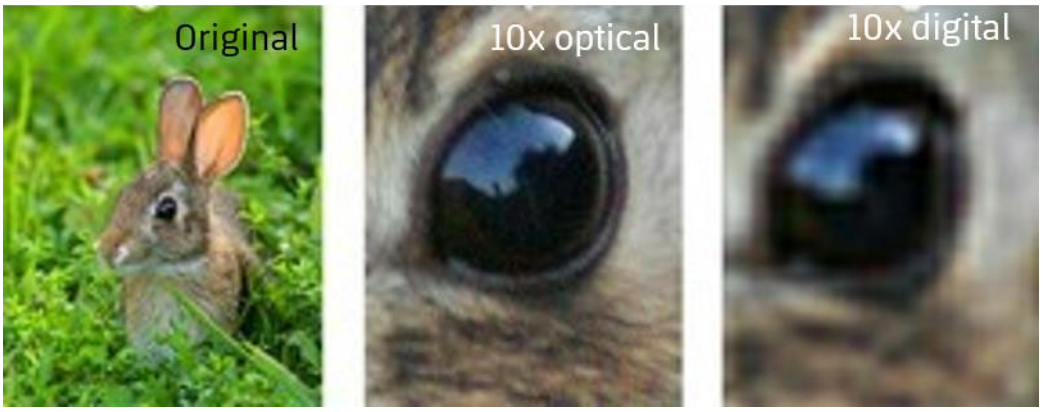
Table 1: Optical zoom and digital zoom

OPTICAL ZOOM	DIGITAL ZOOM
Its function is to enlarge images.	A function that is generated by a software or program included in the camera, forcibly enlarging the image.

Enlarges the frames in the image.	The camera crops the image and enlarges a point.
The quality of the image is maintained because the function is mechanical and no detail is lost.	Using this type of zoom reduces the quality of the image, leaving it pixelated and deformed.

Source: Prepared by the authors.

Figure 13: Comparison between optical zoom and digital zoom



Source: [Untitled image of the comparison between optical zoom and digital zoom] (2010). Retrieved from http://cam-recuperacioninformatica.blogspot.com/2010/11/tipos-de-planos-angulos-y-movimientos.html

Camera body

The function of the video camera is to convert an optical image into an electrical signal.	It is a rectangular box, which does not allow light to enter, and has a lens on one of its ends and a light-sensitive surface on the other.
The camera body houses all the buttons necessary for camera setup and menu access.	The recording device is housed inside the camera body.

Table 2: Viewfinder and others

The viewfinder is used to frame and focus the image and allows us to preview the video. There are two types:	The back of the camera allows:
Direct optical viewfinder	Media input
Viewfinder frame	Audio connectivity
	Power supply
	Headphones entry
	Direct video output to monitor

Table 3: Storage devices

STORAGE DEVICES	
The tape recorder inside the camera is where you place the tape **that is going to record image and sound.**	Cameras that record directly into **an internal hard drive**
There are cameras that record directly to DVD	Cameras that record directly to a **memory card**

Source: Prepared by the authors.

Recording devices

Figure 14: Recording devices

Mobile Devices	*Action cam*	Semi-professional cameras	Professional cameras	Drones	Multi-camera systems
					

Source: prepared by the authors.

Mobile Devices

Currently, everyone has a mobile device and we also have a very wide range of accessories (tripods, lenses, among others) to optimize what they allow us to do.

Figure 15: Accessories for mobile devices

Source: Tokarev, undated, https://es.123rf.com/photo_19481467_dispositivos-m%C3%B3viles-accesorios-icono-conjunto.html

Figure 16: Lenses and tripod

Source: [Untitled image of lenses and a tripod] (2019). Retrieved from https://laopinion.com/guia-de-compras/sacale-el-maximo-partido-a-tu-celular-con-estos-4-accesorios-para-sacar-fotos/

Action cam

Initially, these types of cameras came on the market to meet the needs of some extreme sports. Over time, after testing their potential, they have been used in analysis departments (their use is recommended for specific goalkeeper training).

Figure 17: Action cam

Source: [Untitled image of an action cam] (2018). Retrieved from https://gadgetgang.com/the-best-action-cameras-of-2018-the-gopro-generation/

Semi-professional and professional cameras

Cameras commonly used to record games and training sessions. Versatility to make decisions while using them, wide range of possibilities and the only difference between them is the quality of the image. This can be seen in the magnification of the image and in the quality of the viewing that each one offers.

Figure 18: Professional camera

Source: [Untitled image of a professional camera] (undated). Retrieved from http://www.inresa.gt/ver_producto.asp?id=51837&clc=1560&ct=5802&ss=1858#.XYps3kZKjIU

Drones

Drones have opened up a new horizon on an audiovisual level. Thanks to them, we can get shots that were impossible before. There is a very wide range of drones available on the market.

Figure 19: Drone

Source: [Untitled image of a drone]. (2019). Retrieved from https://www.dw.com/es/bundesliga-de-alta-tecnolog%C3%ADa-drones-inteligencia-artifical-y-big-data/a-50011959

Figure 20: Aerial shot

Source: Barça

Universitas (28 February 2018). *FC Barcelona players in various positional simulated situations* [YouTube]. Retrieved from https://www.youtube.com/watch?v=iTR2C4BKO2Y

Multi-camera systems

Thanks to cameras aligned in rigs (the number of cameras depends on each manufacturer), the multi-camera systems allow us to have automated tactical recordings (player block tracking), complete panoramas and record different situations at the same time and synchronized in time, which is useful for training and games. Some important features are:

- With a single feed, use multiscreen
- All cameras synchronized
- Send all feeds separately to independent monitors
- Direct (Streaming) and deferred

Figure 21: Multi-camera system

Source: Prepared by the authors.

Unit 3.2 Communication language (graphic animation)

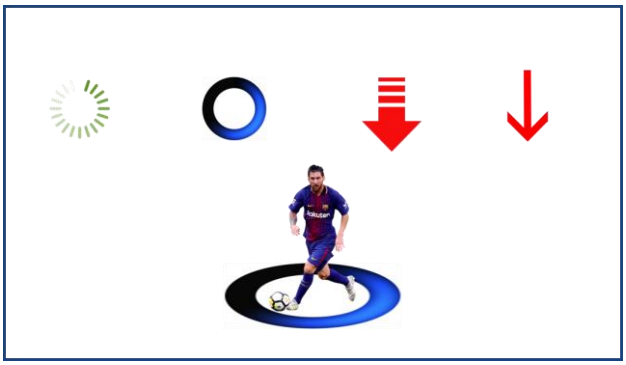
3.2.1 Importance of using graphic animation

It is becoming increasingly important to use graphic elements when creating audiovisual projects that will be communicated to the team.

Audiovisual projects, as a tool to aid in communication, have become one of the most popular options when it comes to transmitting information.

One of the most commonly used elements are **graphic aids** and motion graphics, which include animated videos or digital animations.

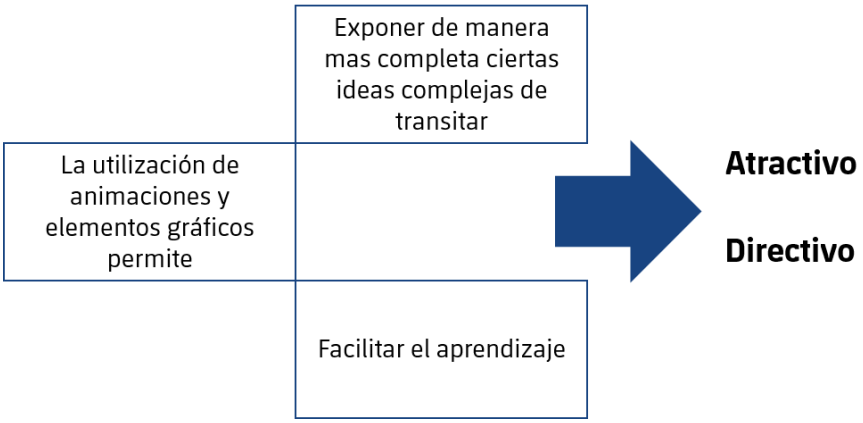
Figure 22: Graphic animation



Source: prepared by the authors.

The animated graphic elements enable a better understanding of the information and assimilation of concepts.

Figure 23: Benefits of using animation and graphic elements



Source: prepared by the authors.

What is visual communication?

This is where you have to use your **analytical**, **rational**, **logical** and **intuitive** side, in order to get your graphic message across to the recipients, aiming for the greatest possible clarity in their understanding and a reaction to it.

Not only written text creates an action; everything around it also affects it.

To achieve good visual communication, you must relate, merge and place the different graphic resources (color, shapes, font, images, sizes, etc.) so that, together, they create the message you want to convey in a clear way, where you control and direct with the players' gaze the desired reaction (Leon de Mimoilus, 2016).

It is necessary to create expectation and attention

3.2.2 What elements are involved in communication? Message: conception of your idea in order to be transmitted

1. Sender: the one who designs the format of the message.
2. Communication media: live projection of presentations, videos, web.
3. Recipient: players, students, etc.

Figure 24: Elements involved in communication

Source: prepared by the authors.

3.2.3 The importance of the using graphic elements in our audiovisual productions

These types of graphics are created through a computer process of mathematical calculations on three-dimensional geometric entities, whose purpose is to produce a two-dimensional visual projection to be displayed on a screen or printed on paper.

Technically, this happens when an X, Y axis acquires Z values (height). These vectors are used to form polygons through algorithms that allow you to make a 3D model of anything.

To put it more simply, a 3D graphic is similar to a sculpture. On the other hand, 2D, two-dimensional graphic would be similar to a painting.

The modeling or design of 3D graphics has acquired an important role in recent years in the creation of videos used in the different departments of our teams (Amerike, undated).

3.2.4 What programs can we use for post-production, beyond specific programs created for soccer?

Non-specific programs

For the past several years, developers of different specific software, platforms, etc., have been lowering prices and creating formulas that fit the smallest budgets. This is thanks to the demand of the professionals and, above all, to the highly qualified new generations of users.

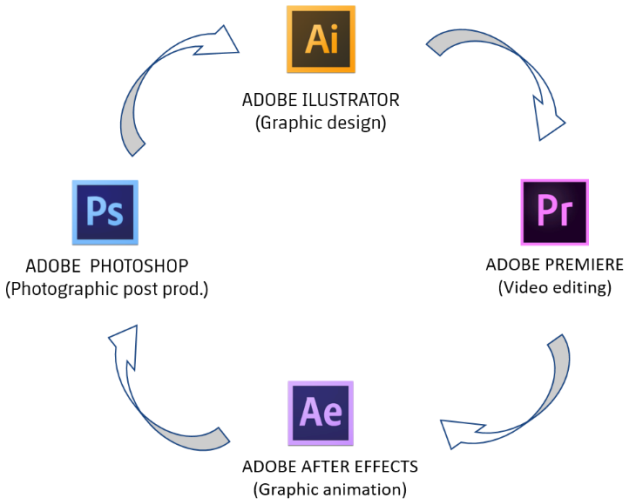
However, these types of solutions are not the only ones available; there are others that are successfully used in different fields. For example, there are programs used in audiovisual productions for movies and TV, which provide optimal tools to create and edit our videos.

Anyone with a computer, regardless of their operating system, has access to tools to create and edit videos.

Nowadays, the vast majority of people have a Mac or Windows OS, which is enough to start working.

Here is an example of the products offered by Adobe Systems, because it is the world's best-known company in the field of audiovisual post-production tools. However, we must remember that there are many other manufacturers offering similar products.

Figure 25: Adobe Systems products



The characteristics of each of these programs are detailed below.

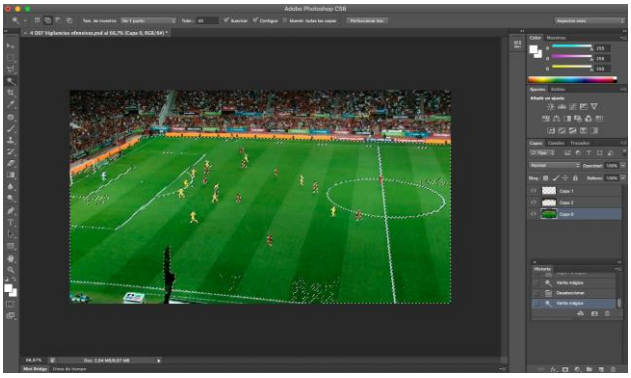
Figure 26: Adobe Photoshop

Source: Prepared by authors based on Adobe, 2019.

Adobe Photoshop (photographic post-production).

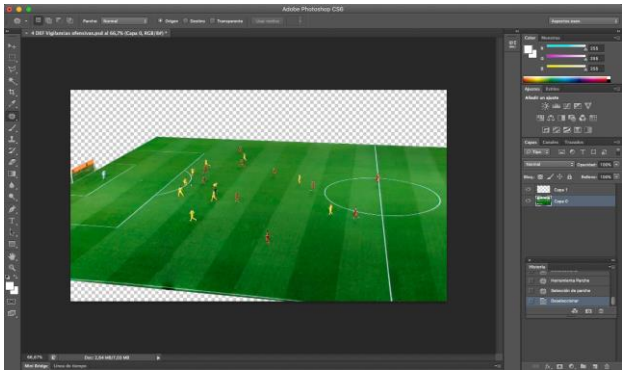
- Arrangement of frames.
- Easy extraction of colors.
- Easy selection of players.
- Work with layers.

Figure 27: Example of using Photoshop (part 1)



Source: Prepared by the authors using Photoshop software (Adobe, 2019).

Figure 28: Example of using Photoshop (part 2)



Source: Prepared by the authors using Photoshop software (Adobe, 2019).

Figure 29: Adobe Illustrator

Source: Prepared by authors based on Adobe, 2019.

Adobe Illustrator (graphic design)

- Expandable design without loss of quality.
- Creation of any type of element.
- Integration with Keynote and PowerPoint.
- Work with layers.

Figure 30: Example using Adobe Illustrator

Source: Prepared by the authors using Adobe Illustrator software (Adobe, 2019).

Figure 31: Adobe After Effects

Source: Prepared by authors based on Adobe, 2019.

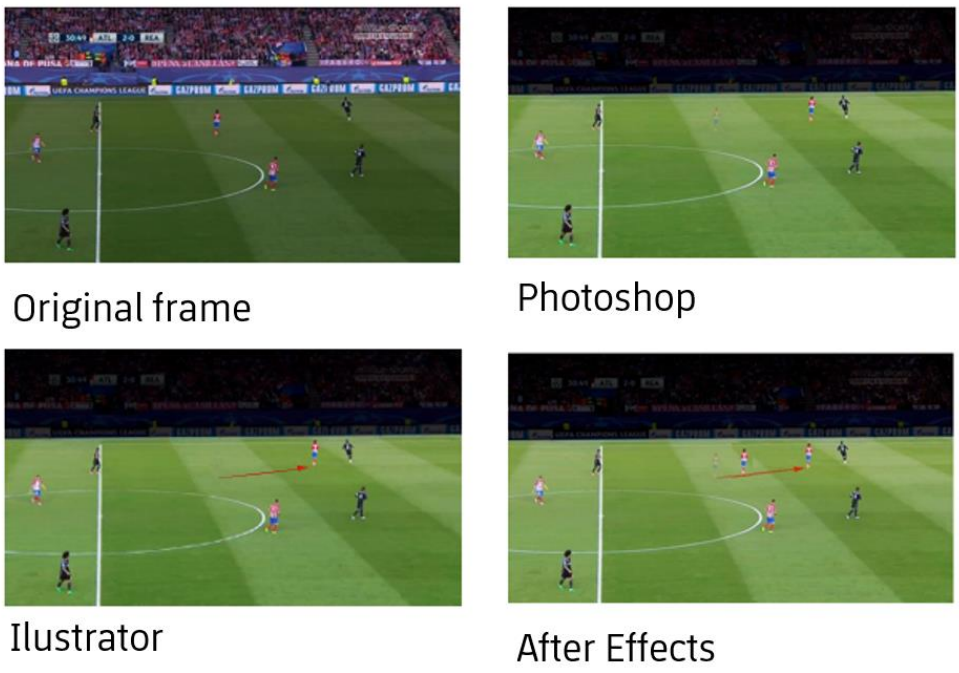
Adobe After Effects (graphic animation)

- Focuses on graphic animation.
- Superposition of layers.
- Creation of any type of animation.
- Video creation.

Figure 32: Example using Adobe After Effects

Source: Prepared by the authors using After Effects software (Adobe, 2019).

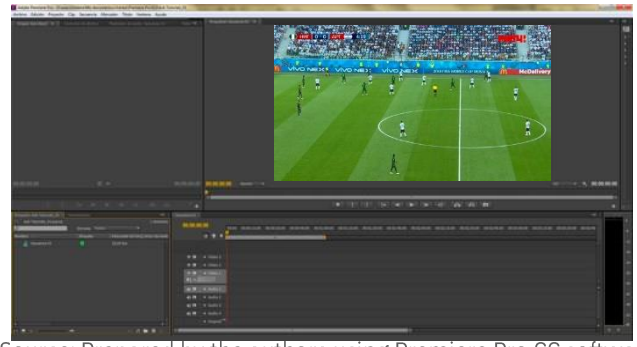
Figure 33: Process of the three programs



Source: Prepared by the authors using Photoshop, Adobe Illustrator and After Effects software (Adobe, 2019).

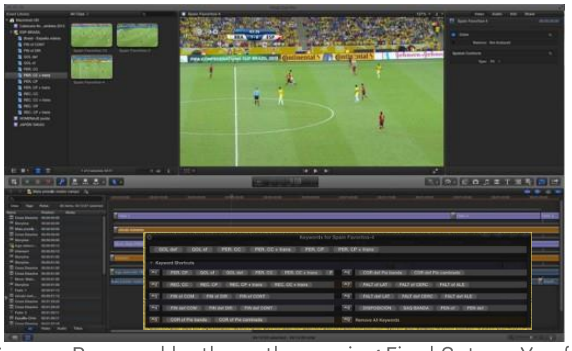
We have left the video editing programs until the end because we have two good references: Premiere Pro CC and Final Cut pro X.

Figure 34: Example of using Premiere Pro CC



Source: Prepared by the authors using Premiere Pro CC software (Adobe, 2019).

Figure 35: Example using Final Cut pro X



Source: Prepared by the authors using Final Cut pro X software (Apple, Inc., 2019).

Video editing programs are used to unify all the processes we have described. We use it to arrange the clips, mix sounds and music, and manipulate all the elements we worked on previously. In short, we will create our final video.

3.2.5 Specific programs

These kinds of tools help us, in a very easy and visual way, to convey an idea and to correct any details within the image itself (still or moving), to bring the players' attention to where we want. They are simpler processes than the previous examples, but they are more expensive.

There are also programs inherited from the professional broadcasting field such as Libero or Piero (more complex and expensive software), and more affordable and functional programs such as:

https://rtsw.co.uk/
https://chyronhego.com/products/sports-analysis-and-telestration/coach-paint/
https://www.klipdraw.com/es/

3.2.6 Application of graphic animation: communication language

Next, we will show some examples of how graphic animation serves to generate a descriptive narration through the implementation of elements in a clean image.

Figure 36: Examples of using graphic animation to generate a descriptive narrative

Source: Prepared by the authors based on Edit-3D software (RT Software Ltd., 2019).

The use of these graphics, mainly in moving video, contextualizes and greatly helps to convey the information the way we really want.

In addition, it allows us to better understand situations and to gradually create our own language. This language will become familiar to our players and will help them to quickly assimilate our explanations. It will also ensure that explanations are clear and help create a more efficient engagement with players.

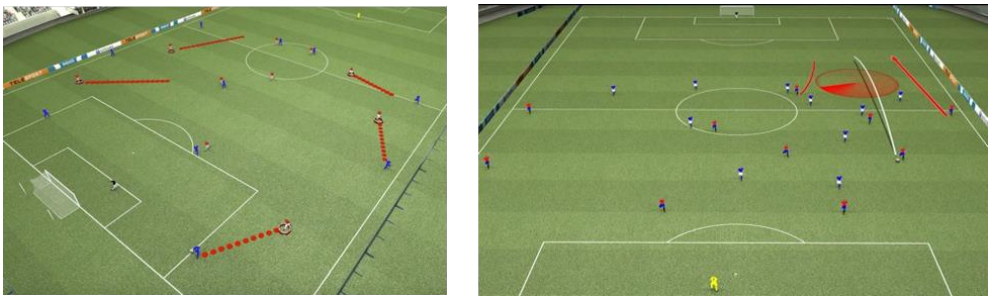
If we introduce this type of language in our interactions with the players, we will see

how, over time, it becomes almost essential and it will feel more and more comfortable to use.

Using virtual stadiums is equally interesting, where it is possible to combine video with a simulation of a calibrated field, where, with 3D players, we can recreate the situation we need that we do not have in the video itself.

Also, it will be useful to generate exercises and everything we need to develop with this tool.

Figure 37: Example of using virtual stadiums



Source: Prepared by the authors based on Edit-3D software (RT Software Ltd., 2019).

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estos-4-accesorios-para-sacar-fotos/

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