FACE/PERSON RECOGNITION MODULE

Below you can find a list of the requisites for the face/person tagging module on a video.

Code	**mod-et-obj-001**
Title	Video splitting in frames
Description	The software should be able to split the original video in different frames to later perform a frame by frame face/ person detection. The split in frames of each video should include a minimum of 2 frames per each second of video.
Priority	High

Code	mod-et-obj-002
Title	Face/person detection per frame
Description	The software should be able to recognise human faces that appear in every frame associated to the video. This character recognition will be performed using face recognition. For every face/person detected, the software should extract the following information: : • **Frame**: Indication of the frame where the face/person has been detected. • **Total number of frames**: Indication over the total number of frames in which the video has been split. • **Person code**: Univocal code per each person detected. • **Person name**: Descriptive name of the person detected. • **X position**: Position inside the X axis, indicating the pixel where the face/person has been detected. • **Y position**: Position inside the Y axis, indicating the pixel where the face/person has been detected. • **Width**: The width (size) in pixels of the face/person detected. • **Height**: The height (size) in pixels of the face/person detected. • **Score**: A score with a value between 0 and 1, indicating the confidence the algorithm has with regards to the detection of the face/person (it has to indicate the confidence on the classification done).
Priority	High

Code	mod-et-obj-003
Title	Aggregation of the person detected
Description	Once the person in a video have been analysed and detected, the software should be able to perform an aggregation of all the results gotten. The final result of the person detected should include the following information: • **Person code**: An univocal code indicating the face/person for which the results are being provided. • **Final result**: A final score with a value between 0 and 1, indicating the priority of the face/person inside all the frames in which the face/person detection has been performed. This final result will be calculated using the number of times that a person has been detected in all the video frames and the specific score that the trust in the detection has.
Priority	High

Code	mod-et-obj-004
Title	Use of a neural network
Description	To perform the face/person detection, the software should use a multilayer neural network, where each layer will include a level of abstraction for what is detected in the image. Below you can find an example of neural network abstraction levels: • Layer 1: Object in position X, Y and dimensions W, H (an object is detected in the image) • Layer 2: The detected object is a human face/person • Layer 3: The detected object is the face of X (person)

Priority	Medium

Code	**mod-et-obj-005**
Title	Re-training of non-recognised faces/persons by the neural network model
Description	The neural network will be able to be re-trained with new faces/persons. This way, the people recognition model can grow by recognising more and more specific people.
Priority	High

Code	**mod-et-obj-006**
Title	Saving the results
Description	The software should save separately the different intermediate results generated: • A folder containing the frames into which the video has been separated • CSV file including the detection of people per specific frame. • CSV file including the aggregation of the final results.
Priority	High