**Optimisation**

*The main caretaker for this component is Jonathan Mills*

**SMART Objectives**

ImageAI allows us to evaluate the mAP (mean Average Precision), allowing us to devise a SMART objective to be able to test the models against

Specific – increase the mAP of the detection model

Measurable – The mAP of the model needs to be above 0.8 for the model to reach the measure of success set out in the use case defined earlier

Assignable – The evaluation code from ImageAI will help us reach that target

Realistic – The mAP can reach above 0.8 if enough time is given to improving the detection model

Time-Related - These results can be achieved within an hour and a half when starting the detection model training

**Optimising the training of the custom detection model**

Optimising this AI algorithm can only really be done by reducing the number of images to train the detection model on as this training is done through a third-party library. The reason this is the only way to optimise the training of the model is due to the library only accepting one model type and the dataset in a specific format.

**Optimising the image detection**

ImageAI requires a detection model type to be set so that the library can detect objects in the image. One way to optimise this process could be to change the model type used. When the program runs using the pre-trained model it takes BLANK to detect objects, whereas when the program runs using the user trained model it takes BLANK to detect objects