# Scope

We will provide multiple RTSP protocol camera links. You will setup Gstreamer to send these links to KVS. You will also program it to go from KVS to Sagemaker for ML analytics using KVS function written in lambda. Sagemaker analytics results will go to Dynamo DB. When there is a match with required prediction level, a 5 second video footage of that event will be store.

Please note:

* The process will allow adding new and removing existing RTSP links.
* You will setup Gstreamer on a EC2 instance.
* If possible, save parser log in a dynamo db so you know the last processed scene in case if there is an interruption in video streaming.
* The solution we require is similar to KIT example here - <https://docs.aws.amazon.com/kinesisvideostreams/latest/dg/examples-sagemaker.html>. However, we do not want to use any existing stack or cloud formation template. We require to do it without any cloud formation templates and make it 100% custom.

# Milestones

## Milestone 1: Add/Update RTSP links to KVS.

In this milestone we will have basic UI [no need to create any design only simple page] into which we should be able to add RTSP link and remove RTSP link by its ID. We will need count of RTSP links which are streaming and its status.

This could should handle or give us status if stream have no data, it has stopped or any error while streaming. Ones the stream are added it should stream to KVS and user should make sure that no other stream are effected or stop while adding or removing stream.

**To create streaming any open library is preferred and container are move advisable.**

## Milestone 2: KVS to Amazon sagemaker

In this milestone a backend function will be created which will parse the video stream of KVS and send data to end point. It should handle multiple endpoint based on requirement. However logic of which stream to be send to multiple end point can be kept static as of now. Any 1 stream can be consider to be send to multiple endpoint.

**Server less architecture is more preferred into this.**

## Milestone 3: Store result for sagemake

Here function created to send data to end point will store the prediction level to database. RDS can be any however we would prefer any Dynamo DB.

We will keep a static prediction level example 80% matched then we will need to store a 5 sec video into it for the frame sent. 5 sec will include 2 sec back and 2 sec forward to S3.

**Dynamo DB and S3 are preferred to store result.**