# ENB241 Group Project – Group 30 Delivery Feature Report

The software system designed, implemented and tested for this project tracks an object in video. The object tracking system implements the following required features:

* Take as input of a list of images, specified as a path and a partial filename (i.e. \*.png to get all png files), and a set of parameters
* Create a distribution field model of an object of interest based on the initial location specified by the input parameters
* Track the object through the rest of the video (sequence of images), updating the model as the video progresses
* Compute performance metrics using a given ground truth image and index, evaluating the performance of the tracker

Optional features implemented in this system include:

* Save a set of images showing the tracking output
* Enhanced Distribution Field Tracker – better tracking algorithm
* Track Objects in Colour – use colour information instead of greyscale
* Enable the use of a configuration file – for easy parameter storage

Usage:

The software can be run from the command line. Parameters can be specified at run time with command line arguments or with a configuration file. The following command structure is used:

“Object Tracker.exe” -path “input image path” -glob “image type” -ipx “column pixel of object” -ipy “row pixel of object” -w “width of object in pixels” -h “height of object in pixels” -c “number of channels in the DF” -sb “special blur” -bc “colour blur” -sd “max search distance” -planes “number of colour planes used for DF” -lr “model learning rate” -sds “spacial blur standard deviation” -sdc “colour blur standard deviation” –odir “output image directory”

Further help and usage information can be obtained with “Object Tracker.exe” -?

An example of proper usage:

“Object Tracker.exe” -path Data/bolt -glob jpg -ipx 336 -ipy 165 -w 25 -h 60 -c 8 -sb 4 -bc 1 -sd 30 -planes 3 -lr 0.05 -sds 1.0 -sdc 0.625 –odir ../

Known issues or shortcomings with the system:

* Only works on a series of images, not actual video
* Not all incorrect inputs are caught, some assumption that the user knows what they are doing
* Test cases do not guarantee infallibility

Extensibility:

* Class based design means changes and additions can be made without affecting to much of the rest of the code, but any changes that require extra input will need to change several classes to work.