

Diagram 1

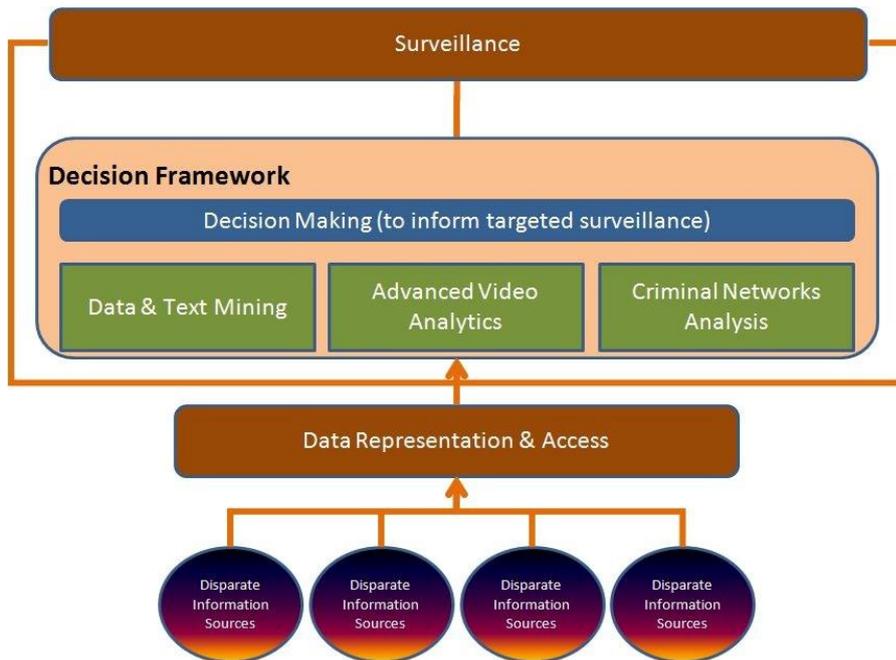


Diagram 2

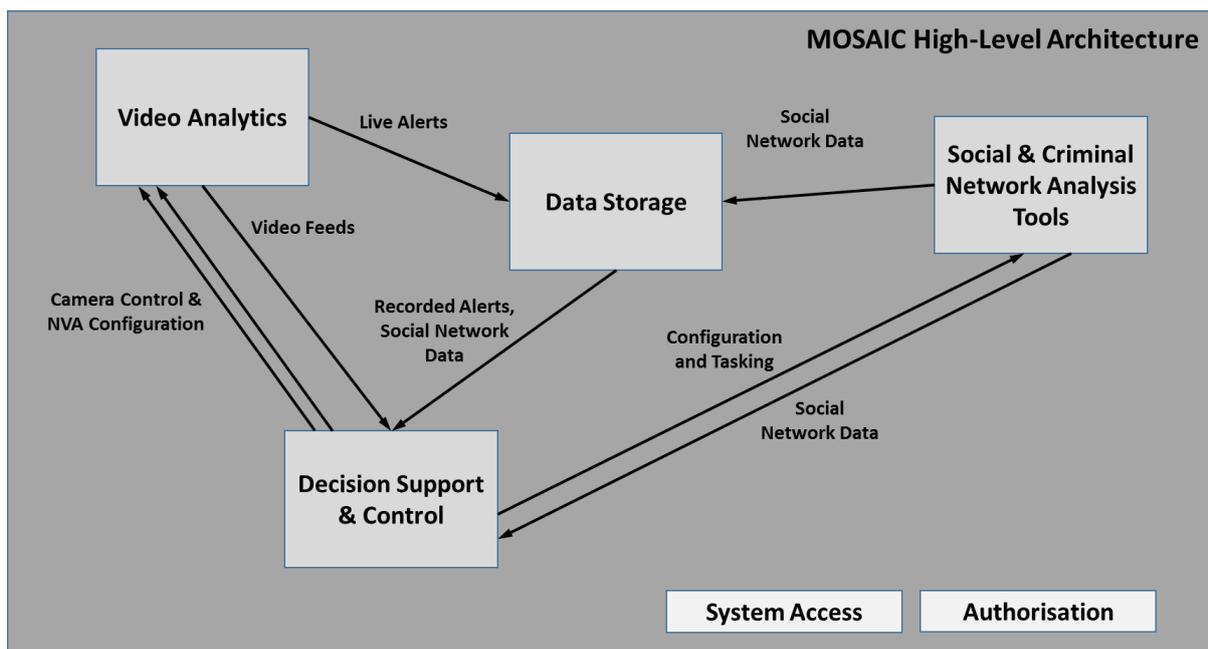


Diagram 3

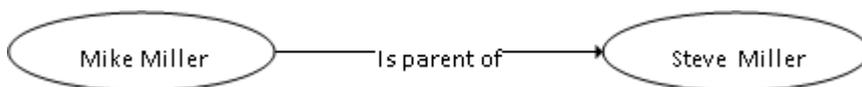


Diagram 4:

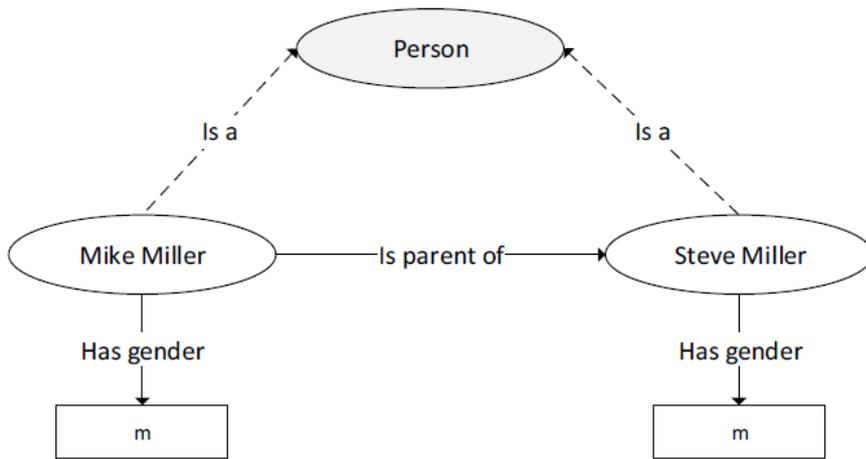


Diagram 5

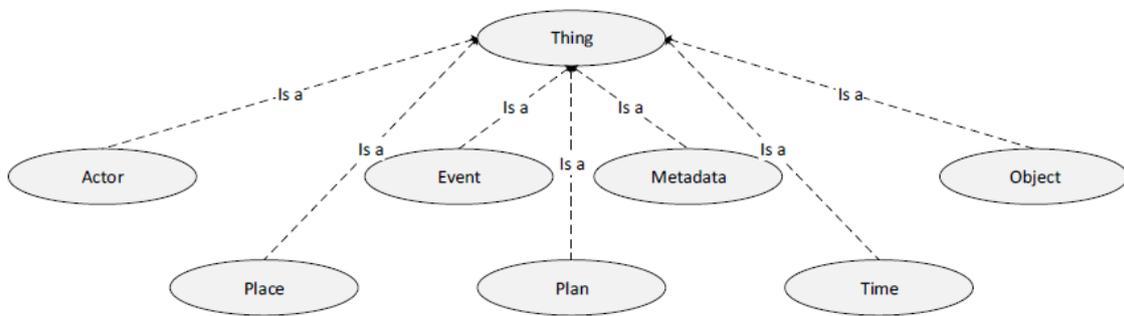


Diagram 6

Name	Description	Usage
Actor	An actor can be a person or group that may potentially carry out actions relevant to the system data model	Used to describe actors, primarily persons, their properties and relations with other actors
Object	An object can be any physical or virtual object or passive entity that is expected to never carry out any actions in the system sense (otherwise they are to be classified as actors)	Used to describe objects that are relevant within the scope of criminal investigation such as vehicles, weapons, dangerous goods or stolen goods
Event	A specific occurrence that can be related to actor(s), place(s) and time(s) and may involve object(s)	Used to describe both low-level events such as those identified by video analytics and higher-level events such as criminal acts and “life events” such as prison sentences for actors
Place	A physical or virtual location organised in a strictly hierarchical model where possible	Uses a hierarchical geographic model to define primarily physical locations nested according to their size (e.g. street located in city) and virtual locations such as chat rooms as needed; functional spaces are hierarchically structured according to their main functionality (e.g. public – commercial – private spaces)
Time	A representation of a time instant or time interval, generally used to specify events	Uses the W3C Time ontology ¹ to represent time instants and intervals as needed to qualify other model entities
Metadata	Data concerning authorship, data provenance and access for data instances in the data model	Used to store the necessary information in order to make data sources, usage rights and usage traceable within the data model; includes provenance information (e.g. name of camera from which video footage was analysed to generate an event), processing information (e.g. name of video analytics device generating an event) and any references to source data (e.g. to ONVIF format event notification files stored)
Plan	Representation of a set or sequence of actions to be completed to achieve a specific goal	Available for use with decision support system components that can identify activities that may be steps of a plan and store the identified steps into the data store as memory for additional rule evaluation using the identified higher-level data

¹ Hobbs, Jerry and Feng Pan. “Time Ontology in OWL. W3C Working Draft 27 September 2006.” W3C Consortium, <http://www.w3.org/TR/owl-time/>.

Diagram 7

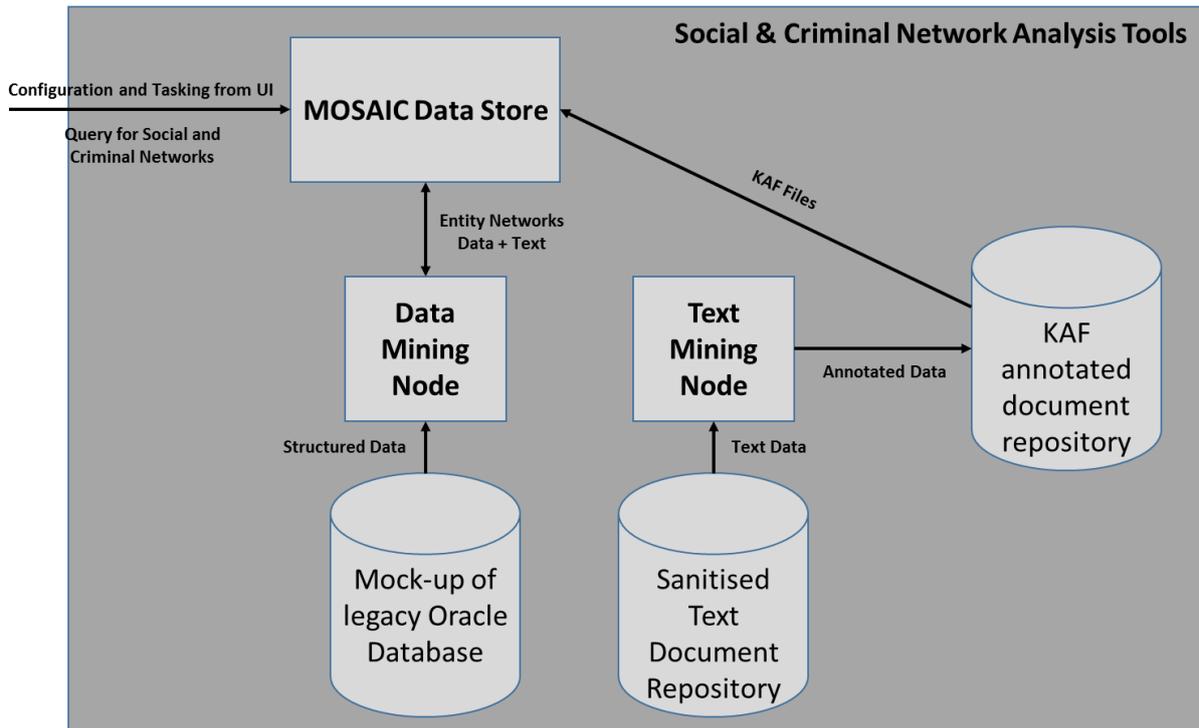


Diagram 8

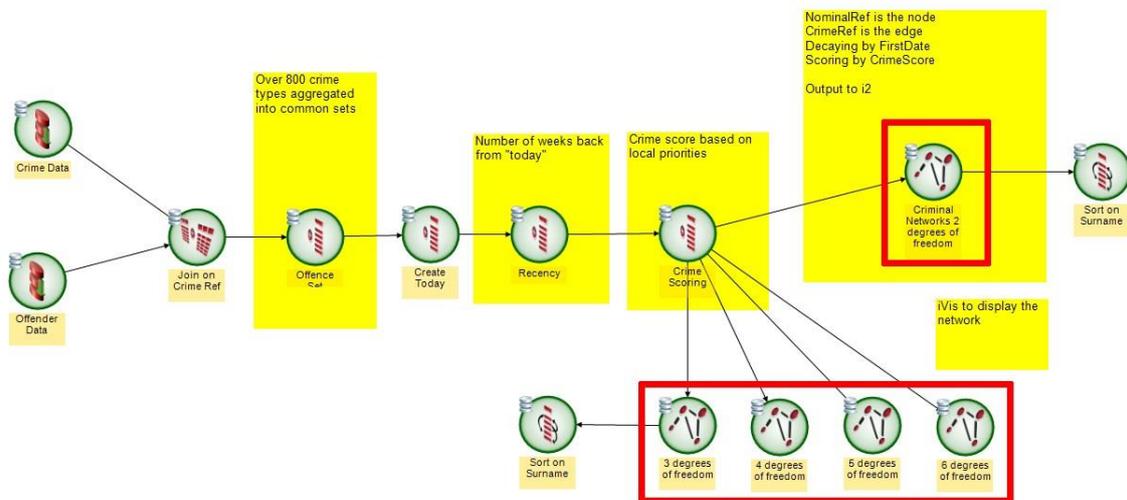


Diagram 9

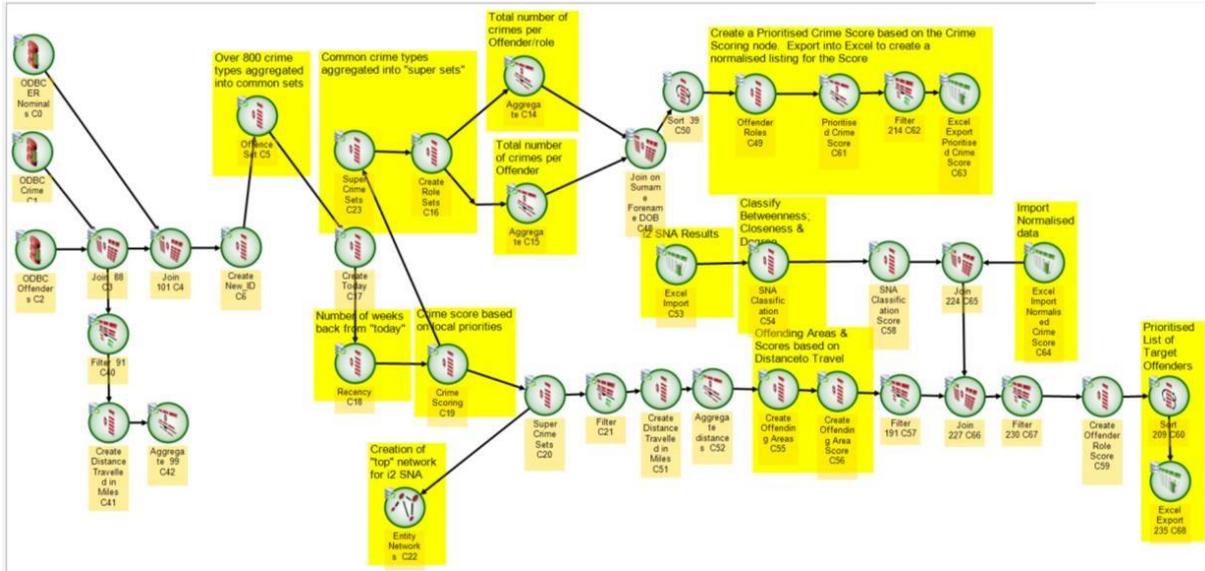


Diagram 10

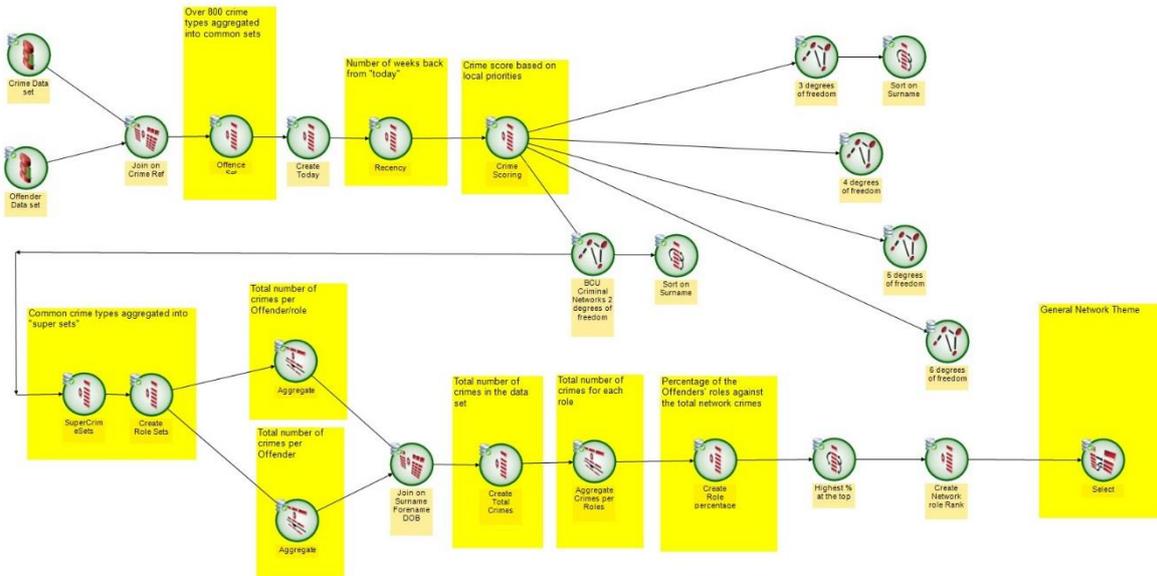


Diagram 11

Relationship type	Entity A	Entity B	Notes
<i>PERSONVRN</i>	personname	VRN	B is a Vehicle Reg. No. belonging to A
<i>FAMILY</i>	personname	personname	A and B have a kinship relation
<i>PERSONWHEN</i>	personname	date	
<i>PERSONONWAY</i>	personname	address	
<i>PERSONCOMPANY</i>	personname	company	A works for B
<i>CARONWAY</i>	VRN	address	
<i>WITH</i>	personname	personname	Generic relationship btwn two persons
<i>BANKACCOUNT</i>	personname	IBAN	IBAN belongs to A
<i>VRM</i>	car (brandname)	VRN	
<i>CAR</i>	personname	car (brandname)	

<i>PERSONCITY</i>	personname	city	A is or lives in B
<i>ADDRESSOF</i>	personname	address	A is or lives at B
<i>PHONEOF</i>	personname	telephone number	
<i>EMAILOF</i>	personname	e-mail address	
<i>COMPANYREL</i>	company	company	Generic relationship btwn two companies
<i>COMPANYADDR</i>	company	address	A is based at B
<i>COMPANYCITY</i>	company	city	A is based in B
<i>COMP</i>	anytype	anytype	Direct relationship (complement)
<i>QUAL</i>	anytype	anytype	Direct relationship (qualifier)
<i>SENT_SCOPE</i>	anytype	anytype	Co-presence in the same sentence
<i>DOC_SCOPE</i>	anytype	anytype	Co-presence in the same document

Diagram 12

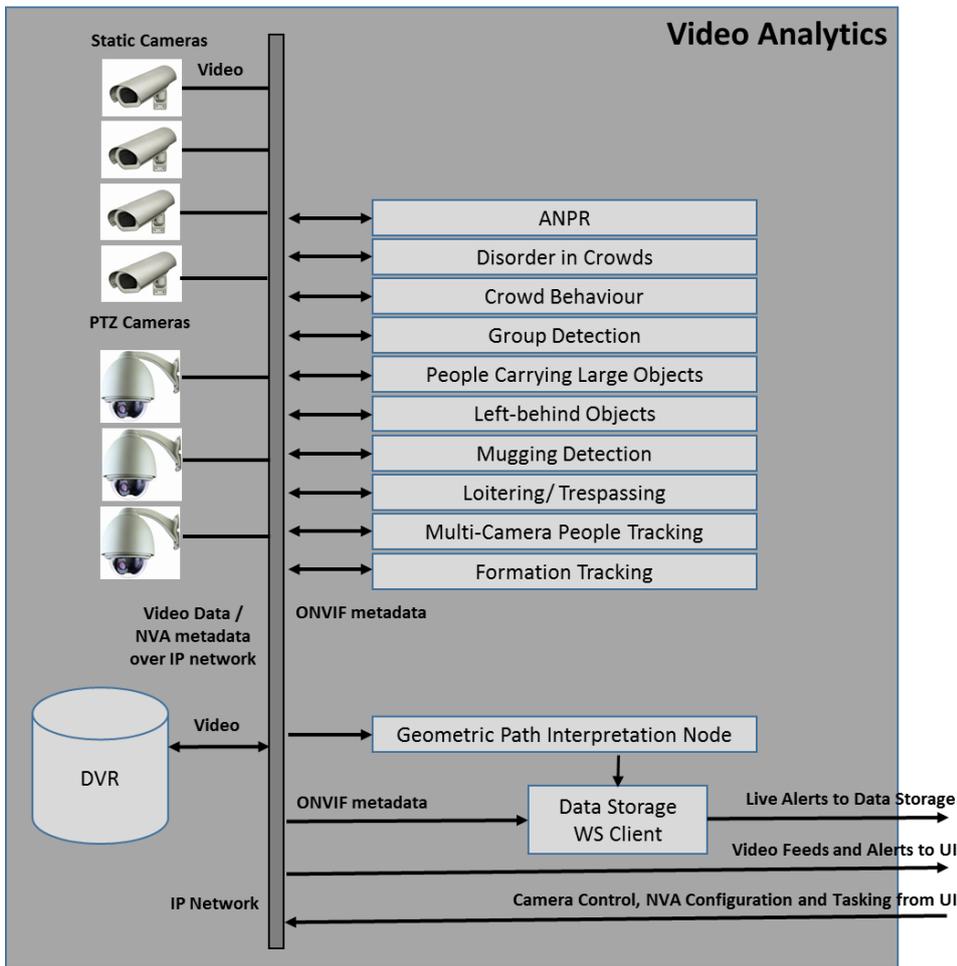


Diagram 13



Diagram 14

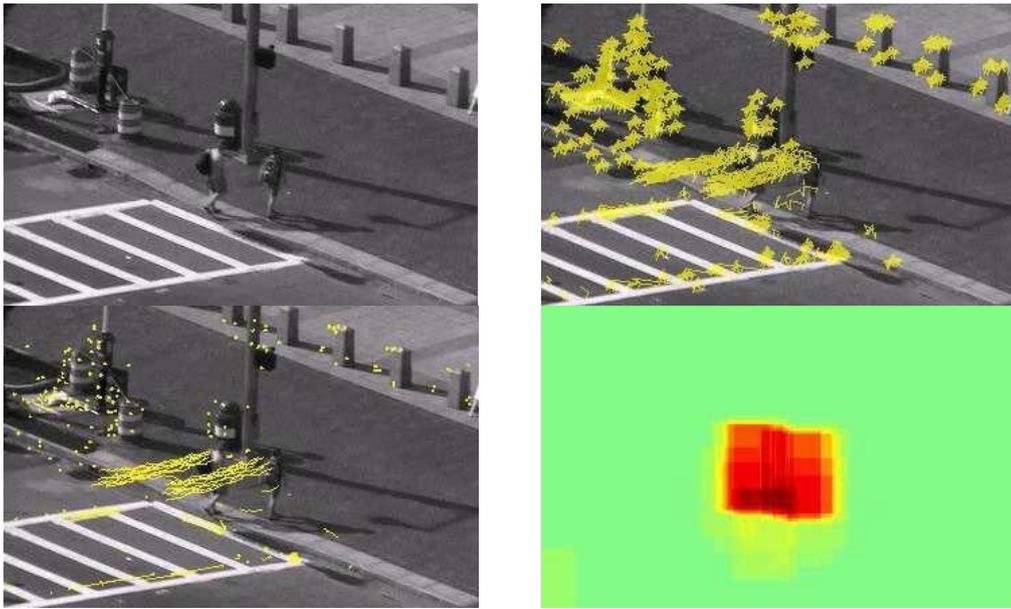


Diagram 15

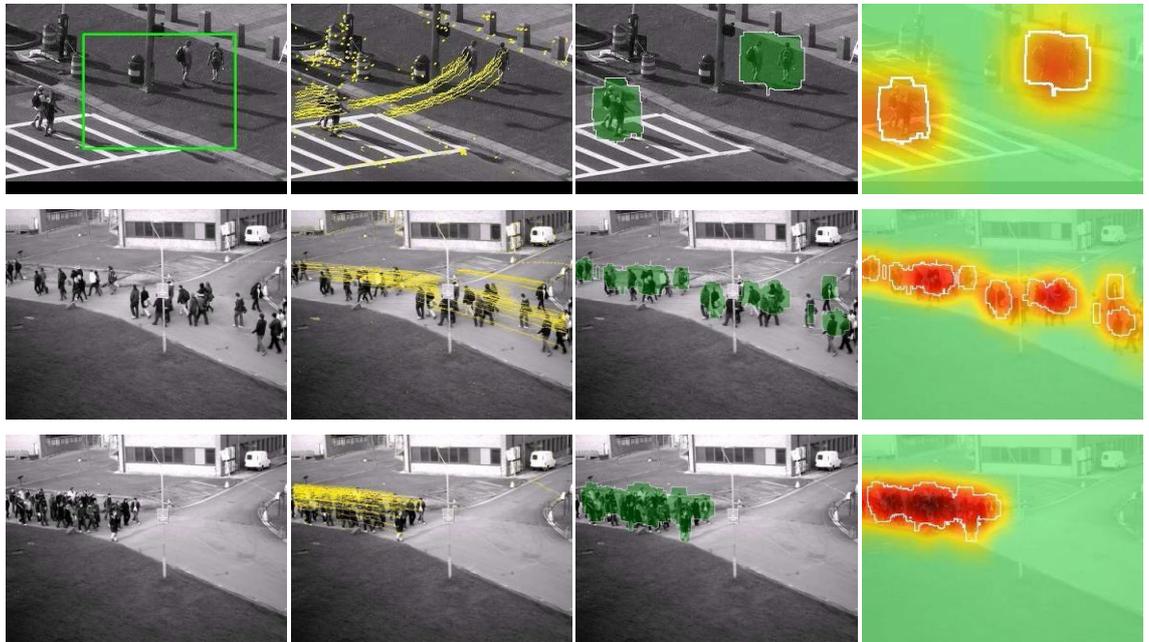


Diagram 16

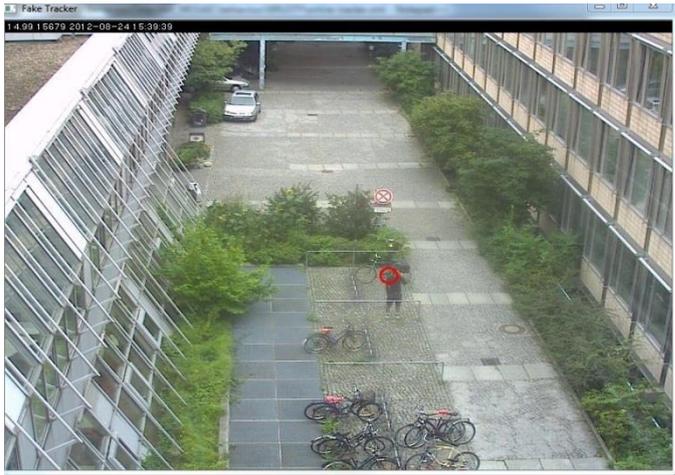


Diagram 17

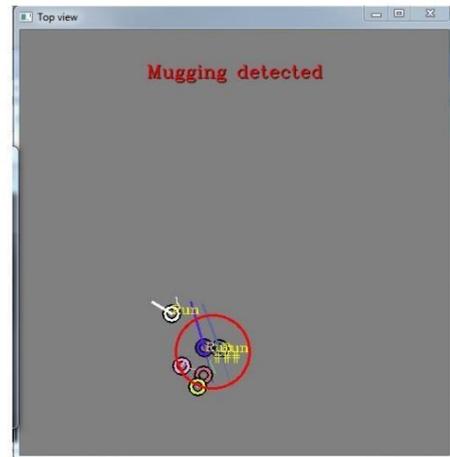
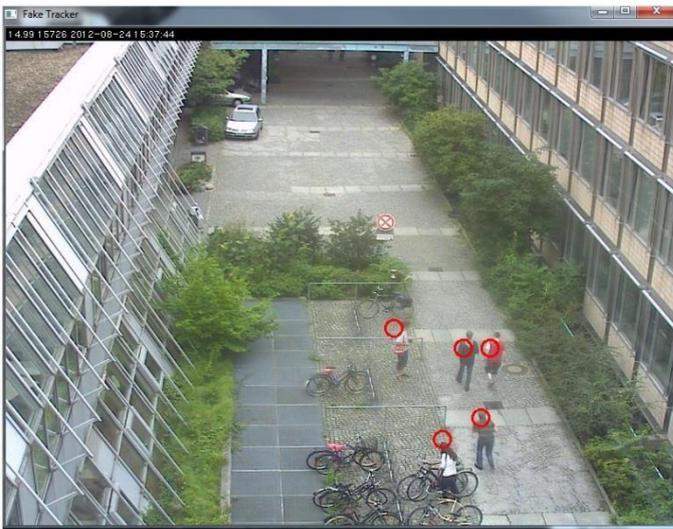


Diagram 18



Diagram 19

