

## ITS Radar Helpdesk Query: The Gatsometer MCS safety camera 'Super Gatso'

Query no:	16	Query initiator:	Robert Stewart
Date:	06/07/2006	Compiled by:	James Perrott <a href="mailto:james.perrott@fabermaunsell.com">james.perrott@fabermaunsell.com</a>
Query topic areas:	The latest Multi Camera System (MCS) from Gatsometer, also known as 'Super Gatso' and 'Big Daddy'.		
Categories and level of relevance:	Safety	Very Relevant	
	Pilots	Some relevance	
	Traffic Management Technology	Some relevance	
	Standards and Policy	Some relevance	
	Monitoring	Some relevance	
	Technology Solutions	Some relevance	
Transferability to Highways Agency:	Meets Policy Objectives	Yes	
	Cost/Benefits Information	None	
	Development status	Deployed outside EU. Awaiting UK type approval.	
	Innovative	Yes	
	Applicability to UK legal issues	Yes	
Summary:	<p>Recently there has been a certain level of media interest around the latest Multi Camera System (MCS) from Gatsometer. This camera, colloquially known as big daddy or Super Gatso, has seen some deployment in North America and Switzerland. This document outlines its capabilities.</p> <p>As this system is about to undergo Home office type approval this product may be of some relevance to the Highways Agency</p>		

### Introduction

Across many roads in the United Kingdom safety cameras are in place to enforce speed limits. Gatsometer have recently released a new product, their Multi Camera System (MCS), designed to provide coverage across up to four lanes. It is primarily designed for red light enforcement at traffic signals and for speed enforcement on major highways. The MCS system can be fitted into several sizes of housings on both gantries and on roadside posts with the largest housing having 2 flash ports and up to 4 ports for camera mountings.



### Configuration

The system consists of a series of cameras configured as required. Combinations can include one camera for each lane, one camera for two lanes, an overview camera a digital video event recorder and white or infra red flashes. The Multi Lane Camera system is designed to be able to operate either in a front facing configuration, a rear facing configuration, or as a pair. Pairs work in combination with one unit facing the front of the

vehicle and a second housing facing the rear, which allows capture of the number plate of any type of vehicle and a photo of the driver.

When an MCS system is configured to monitor four lanes, three digital cameras are required. One camera acts as an overview camera, while two others provide a zoomed in view, each able to cover two lanes. The overview and zoomed camera trigger simultaneously to take two images of each offence.

## Deployment

So far this system has been deployed in both the USA and in Switzerland in both gantry mounted housings and roadside housings. In the USA, cameras have been installed at 308 sites so far and in Switzerland there have been 10 MCS installed. 225 of the installations in the USA are roadside mounted, with most facing the rear of the vehicle. In Switzerland all installed systems are in pairs with both front and rear facing camera.

Before this system can be deployed by the Highways Agency as a law enforcement tool, it must undergo Home Office type approval. Gatsometer MCS is currently seeking type approval.

## Components

The Gatsometer MCS consists of:

- Traffic light interface. Provides the MCS with traffic signal information for enforcing red lights at junctions.
- GPS interface. Provides the MCS with an accurate independent time source.
- Loop interface. The MCS currently uses two induction loops per lane to measure vehicle presence, vehicle length and speed. Other detection systems are in development and will be tested in January 2007 (which will require additional Type Approval).
- Digital Cameras. Takes a picture of the offender using a high resolution low-light camera.
- MCU (Multicam Computer Unit). Receives and stores the offence picture and places the databar (time and data stamp) on the picture at time of storage. The MCU also receives and stores the video image.
- Video camera. Provides video evidence to verify the stills evidence. The video camera can be used for surveillance or for instant replay of an offence.

## Digital cameras

The digital cameras used in the MCS are high resolution and also capture a high depth of colour. This should allow the images to be processed with Automatic Number Plate Recognition (ANPR) equipment. The high colour depth also allows features to be picked out of the image, such as the face of the driver in low light conditions, or situations where the image is subject to glare, without 'enhancing' the image.

In an effort to duplicate the widespread acceptance of wet film based enforcement cameras as evidence in legal cases, the digital cameras used by the system capture an offence and include within the image the offence details such as the timestamp and speed of the vehicle. The image is then encrypted and watermarked. It is expected this will help to prove a chain of evidence in a legal case to show the digital image has not been tampered with.



## Conclusions

Deployment of the Gatsometer MCS in the UK is subject to the system receiving Home Office Type approval. Approval is being sought as of July 2006. It should be noted that the current system requires loops for speed detection. Other, non-invasive, detection mechanisms are being investigated, but will require additional Type Approval.

The system provides the potential to use a single safety camera housing to cover multiple lanes of a highway from either a gantry or a roadside mounting. The continuing development and deployment of this system will be of interest to the Highways Agency as a potentially cost effective speed enforcement tool.

## References

The material provided in this report is provided by Serco, Gatsometer's agent in the UK and by Gatsometer directly. All copyrights on pictures contained within this report are held by Gatsometer and the pictures are reprinted with their permission.

More technical information on the system is held by the ITS Radar team and is available on request. Alternatively, please contact Steve Narroway of the Highways Agency on this system and any other development and products that support traffic enforcement.