

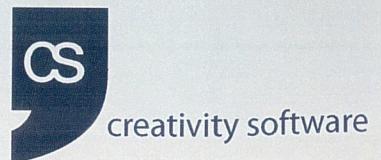


# Sophisticated Location Based Technology

to meet the needs of Law Enforcement  
and Emergency Services



# Objective



To demonstrate how **Creativity Software** location technologies can assist in preventing crime where possible and identifying & prosecuting suspects where necessary



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Location Based Services Technology

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# Agenda



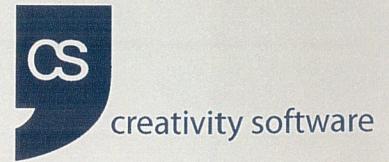
1. **Creativity Software** - a brief introduction
2. **Location Data** - our understanding of your operational needs
3. **Location Data** - your challenges in accessing and processing
4. **Our Technology** - an insight into what it can do for you
5. **Creativity Software** - enhancing operational efficiencies



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# Creativity Software



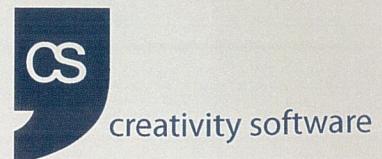
- cs Location Based Services (LBS) is a specialist field
- cs UK based Creativity Software is a global leader
- cs Worldwide installed based
  - Europe
  - Middle East
  - Americas
  - Africa
- cs All software developed/ supported in UK



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# Creativity Software



- cs Leading supplier of location solutions for LEA and 911/ 112 services
- cs Expert advisor to government agencies
  - Advisor to UK Home Office - security/ privacy code of practice 2004
  - Advisory Board of European Number Association (E911/ 112) for EU
- cs High level partnerships with leading lawful intercept vendors
- cs Partnered with Cambridge University for R&D
- cs Recognised with the Queen's Award for Enterprise
- cs Named in Deloitte Fast 50

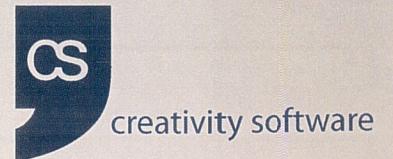
**Deloitte.**  
Technology Fast50



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# Location Data - your needs



cs Variance across agencies, BUT in general terms...



**Prevention &  
Deterrence**



**Requiring  
Real Time  
Data**



**Detection &  
Prosecution**



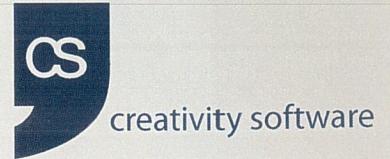
**Requiring  
Forensic/  
Historic Data**



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# Your operational needs - 9 points



Need to be able to locate ALL mobile handsets at any time...

1



With high levels of location accuracy

2



Without the knowledge of the person being located

3



Without the ability of the person to prevent themselves being located

# Your operational needs - 9 points



Need to be able to locate ALL mobile handsets at any time...

4



On all network types  
(GSM 2G, 3G, 4G/ LTE & CDMA)

5



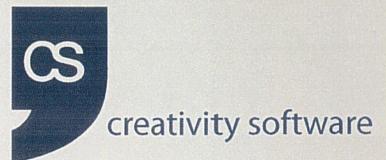
Whether the mobile handset is indoors  
or outdoors

6



Even if the handset is using a SIM from  
another country (Roaming)

# Your operational needs - 9 points



cs Need to be able to locate ALL mobile handsets at any time...

7		Whenever the phone is switched on (24/7/365)
8		Whether a call is being made or not
9		Without the need for any software to be added to the phone itself



# The challenges of location data



Accessing and processing location data presents certain challenges...



## Accuracy

Location data must be sufficient for purpose.  
In some instances, serving cell is adequate.  
In others 50 metres accuracy is required



## Real Time Access

Centralized access to real-time data from different mobile networks is an essential means of covering multiple suspects



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# The challenges of location data



Accessing and processing location data presents certain challenges...



## Visualisation

To be truly useful, location data needs to be visualised, on a map, in real time



## Tracking

The tracking solution must allow you to set geo-fences to monitor entry/ exit of targets or the proximity between targets



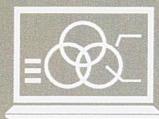
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# The challenges of location data

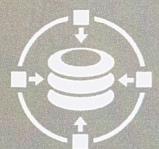


**Accessing and processing location data presents certain challenges...**



## Analytics

The analytical solution should run this data to recreate movements and interactions

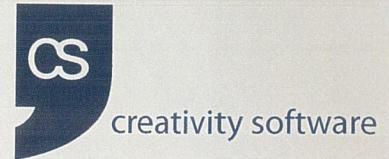


## Access

The solution should provide controlled access to your officers in a control room environment, or in the field using tablet/ mobile devices

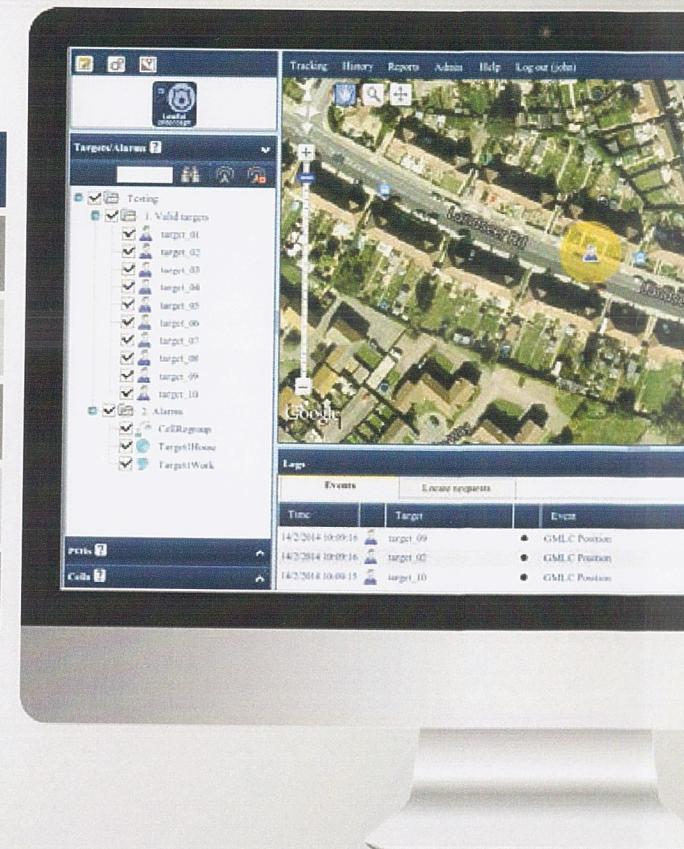


# The importance of accuracy



Location data must be sufficient for purpose. In some instances, serving cell is adequate. In others 50 metres accuracy is required

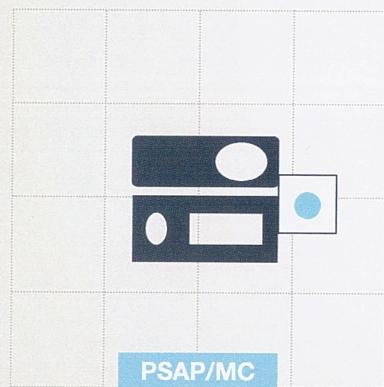
Location Algorithm	Urban	Suburban	Rural
Cell-id (CI)	500m	1,500m	5,000m
ECID (CIRTT)	500m	550m	1,500m
CIRTRX	250m	500m	1,000m
Geo Triangulation	200-250m	400-500m	800-1,000m
Multilateration	150-200m	300-400m	700-800m
Fingerprinting	50m		
Predictive Matching	50m		



# Centralized access to Real Time Data

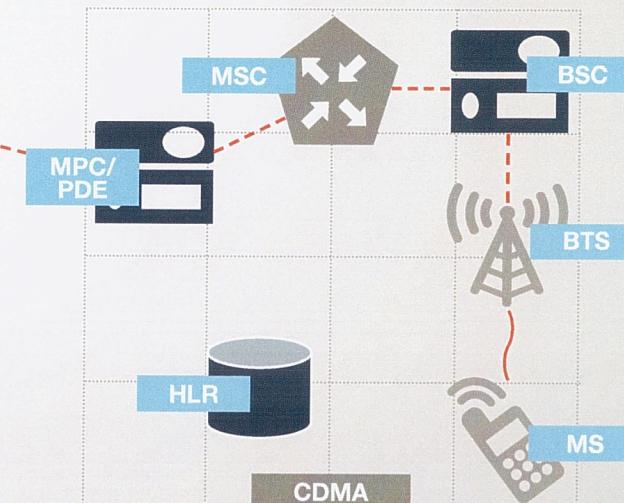
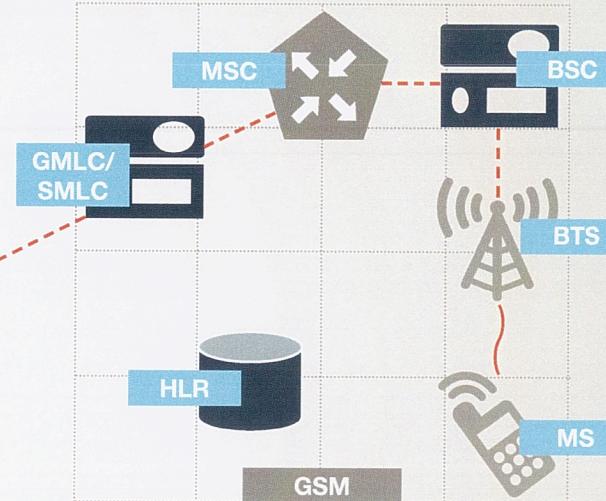


Centralized access to real-time location data from different mobile networks is an essential means of covering multiple suspects



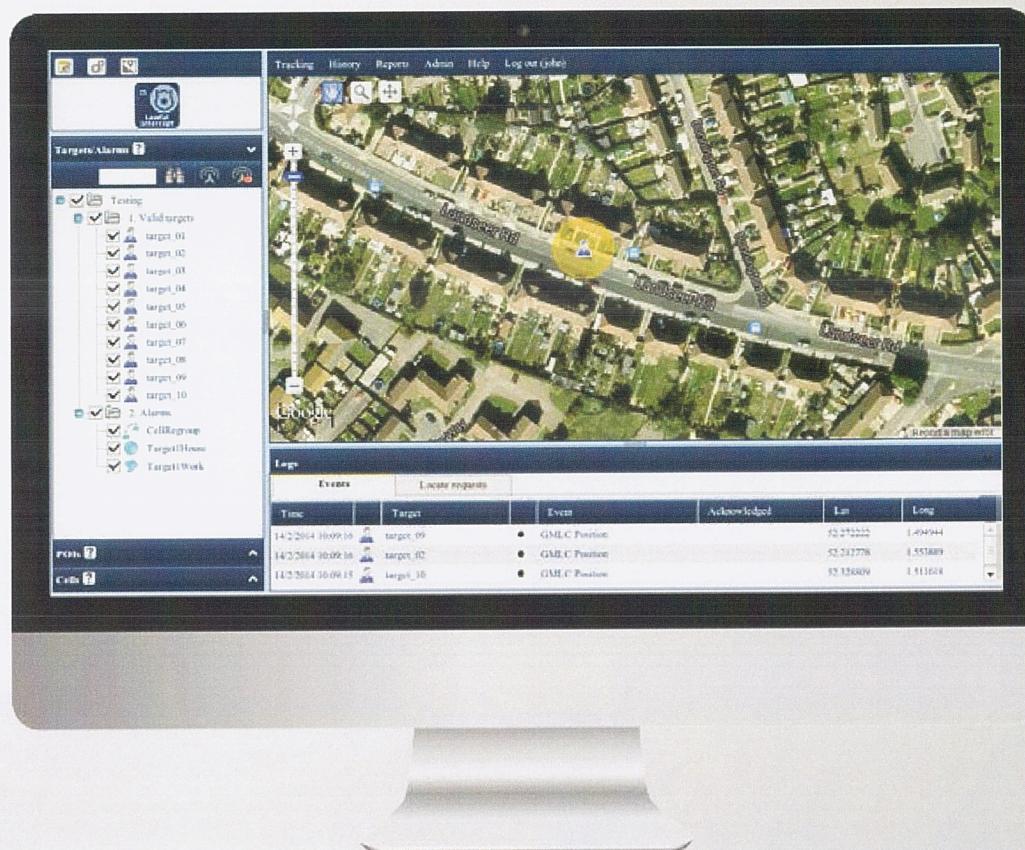
MLP/ SIP

MLP/ SIP

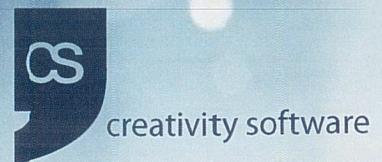


# Visualisation

Data needs to be visualised in real time or replayed. Geo-fences/alerts to monitor movements of and interaction between suspects



# Your challenge



## Accessing and processing accurate data...

With controlled access available to your officers in a control room environment...



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# Your challenge



## Accessing and processing accurate data...

or in the field using tablets  
and smartphone devices

The screenshot displays a mobile application interface. At the top, there's a navigation bar with links for Tracking, History, Reports, Admin, Help, and Log out (John). Below this is a satellite map of a residential area with several locations marked. A yellow circle highlights one specific location. At the bottom of the screen, there are two tables: 'Targets/Alarms' and 'Logs'.

**Targets/Alarms**

Category	Sub-Category	Item
1. Valid targets	target	target_01
	target	target_02
	target	target_03
	target	target_04
	target	target_05
	target	target_06
	target	target_07
	target	target_08
	target	target_09
	target	target_10
2. Alarm	CellGroup	
	TargetHouse	
	TargetWork	

**Logs**

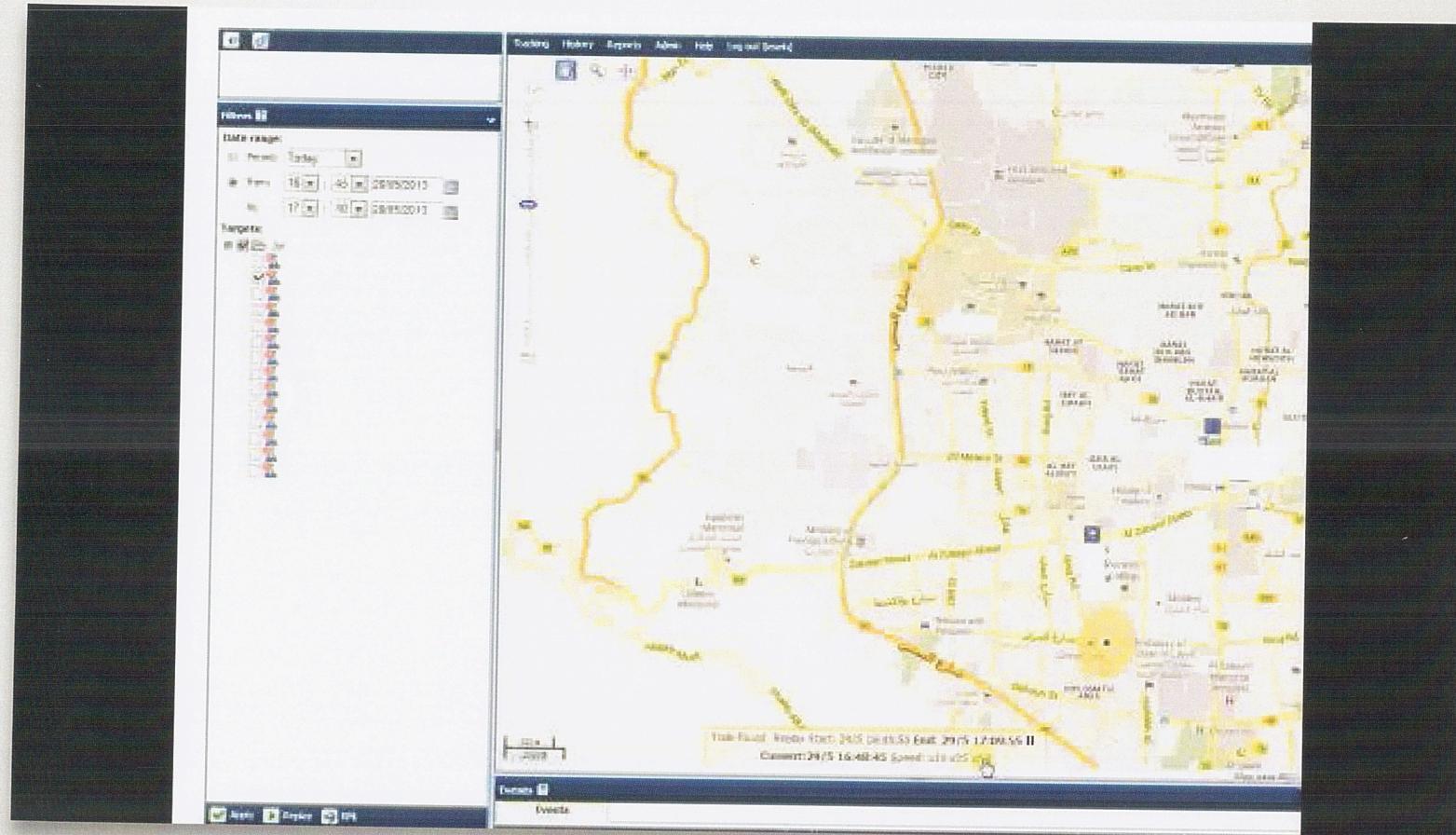
Time	Target	Event	Address/Location	Lat	Long
14/2/2014 10:09:16	target_09				
14/2/2014 10:09:30	target_02				
14/2/2014 10:09:35	target_10				

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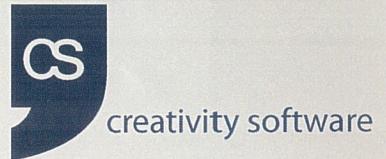
# Accuracy in action



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# Summary



**You need to be able to locate all mobile handsets anywhere in country at any time:**

- cs With high levels of location accuracy
- cs Without the knowledge of person being located
- cs Without the ability of the person to prevent this
- cs Whether the handset is indoors or outdoors
- cs Even if the handset is roaming
- cs Whenever the phone is switched on - active or not
- cs Without the need for additional software on the phone



# Solutions from Creativity Software



cs Creativity Software is an experienced, reliable provider of location solutions...

- cs Accurate, consistent real time data
- cs Powerful visualisation and tracking tools
- cs Trusted by LEAs and governments globally
- cs Helping you to prevent and prosecute crime



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