



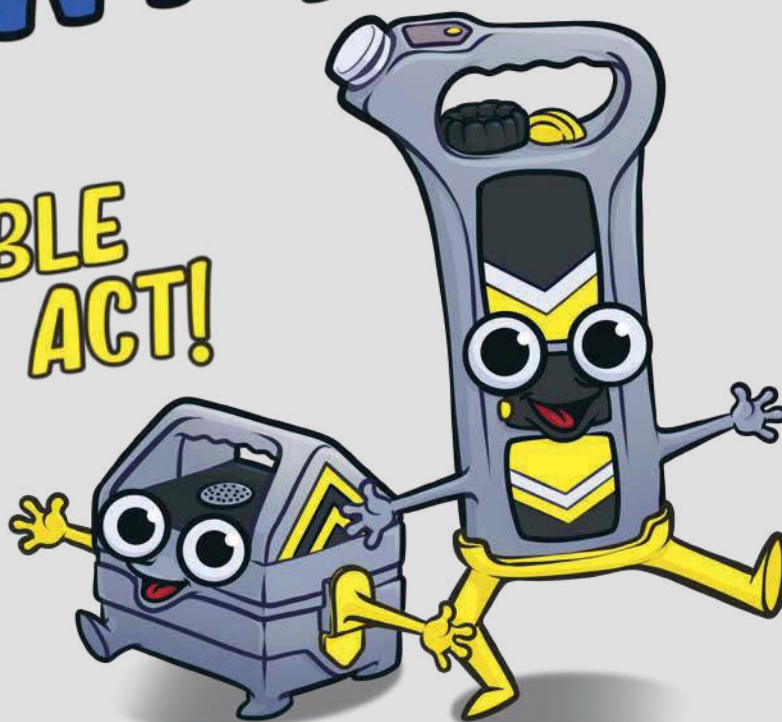
SYGMA

SOLUTIONS LTD

UNDERGROUND UTILITY LOCATION
& AVOIDANCE TRAINING

GENNY & CAT

THE
DOUBLE
ACT!



EUSR

Approved
Provider

Pro
Qual



SYGMA

SOLUTIONS LTD

UNDERGROUND UTILITY LOCATION
& AVOIDANCE TRAINING

T: 0844 241 2597

E: info@sygma-solutions.com

W: www.sygma-solutions.com

Hindley Business Centre
Platt Lane, Wigan, WN2 3PA

Sygma Solutions specialise in providing dedicated Cable
Avoidance & Location Courses

Sygma Solutions are an independent training provider helping
your staff to learn how to carry out underground cable and
other utility detection surveys using all the latest Genny &
CAT, High End Locators and GPR equipment.

Our training courses can be carried out on and off site and are
suitable for all levels of experience.



Sygma Solutions Genny & CAT Training

Sygma Solutions Ltd - The UK's leading specialist training provider in underground utility location & avoidance.



Over 100 years of combined experience in cable locators and utility detection techniques. Sygma Solutions Ltd are industry experts and passionate about passing our knowledge and skills on to our delegates.

The Sygma "Genny & CAT Course" has a proven track record in vastly reducing service strikes and increasing Genny usage.

Changing behaviours through proper understanding of the "science" behind what we do then proving it on site in a practical format.

During our session's delegates will learn:

- ✓ Reading utility plans
- ✓ Equipment functions & controls
- ✓ Why we should not rely on Power & Radio
- ✓ Starting a survey with a Genny/Transmitter
- ✓ How to conduct a site survey maximising Genny usage
- ✓ Getting the most out of the dual frequencies
- ✓ Locating problem services – street lighting, LV services, comms
- ✓ Joints, loops, bends
- ✓ Induction sweeps & nulling out
- ✓ Depth estimation



We do not just teach our delegates how to operate the kit, we give them the skills and confidence to apply it to a real site and conduct a proper utility location survey.

COURSES CAN INCLUDE :

- ✓ Nationally recognised qualification with our Level 2 award in Utility Location
- ✓ EUSR CAT1 & CAT2 Accredited Courses
- ✓ All courses are CITB approved allowing for the Tier 2 reclaim of £140 per person.

Sygma Solutions Utility Location & Avoidance On Site Competency Assessments (OSCA)

Sygma OSCA is an all-new digital onsite assessment tool to assess competency in Utility Location & Avoidance and Safe Digging

Our expert teams will provide on-site workplace assessments using our new digital platform.

Many operators take 3 to 5 yearly refresher and assessment courses. Sygma believes more can be done in the interim period to assess competence and to support teams in maintaining skills.

Sygma has had great success with our interim coaching and support and it has proven to reduce utility strikes.

The new Sygma Utility Location & Avoidance OSCA is the most comprehensive assessment of its kind in the industry. It is mapped to current industry standards and client, or site-specific elements can be added. Conducted by qualified assessors and industry experts.



Elements include:

- ✓ Site-Specific RAMS
- ✓ PPE
- ✓ Understanding Utility Plans
- ✓ Visual Surveys
- ✓ Pre-Use Equipment Checks
- ✓ Transmitter Connection/ Clamp/ Capacitance/ Induction/ Nulling
- ✓ Depth Estimates
- ✓ Depth Checks
- ✓ Induction Sweeps
- ✓ Site Marking

A safe digging OSCA can also be bolted on

The digital OSCA report generated captures and delivers:

- ✓ Photographic and video evidence of assessment
- ✓ GPS Location
- ✓ Time & Date Stamped with OSCA duration.
- ✓ Instant generation of report emailed to the client.
- ✓ Criteria mapping

OSCA's can be achieved as strict assessments only or can include a coaching refresher session. The OSCA is ideally conducted on site at the workplace during normal operations and multiple teams can be done in one day across multiple sites.



1.1 - Plans - Utility plans are understood	Yes
Yes/No	Yes
Assessor Comments	Pointed out surface features and oriented to plans. Vertically confirmed voltage of cables, diameter and material of pipes in work area
Single Photo	

1.3 - Transmitter Induction - An inductive signal is applied and a blind induction sweep is performed - Previously located utilities are nulled out	Yes
Yes/No	Yes
Assessor Comments	Genny 10m plus away, indicated line found and nulled out, no other services found
Single Photo	

1.3 - Survey area transmitter - A direct connection is applied - Utility located and traced	No
Yes/No	No
Assessor Comments	Vault stick used on column 1st followed by earth then connection to column
Single Photo	

Please email
osca@sygma-solutions.com for more
information or to book a demonstration



Sygma Solutions Ltd are a specialist training provider in Utility Location and Avoidance, we have the most experienced utility location experts in the UK.



We deliver a wide range of courses from EUSR accredited Genny & CAT 1-day courses right up to an advanced 5-day Utility Mapping Course.



During all of our sessions we include a section on reading utility plans, and we have now taken this section and launched it as a stand-alone training product.



This session can be delivered in person in a classroom environment or alternatively you can join us online & live with one of our resident experts for a remote session.

THE SESSION WILL COVER

- ✓ HSG47 Responsibilities & CDM
- ✓ Sourcing Utility Plans
- ✓ Using LSBUD
- ✓ Digdat
- ✓ Understanding regional differences
- ✓ Keys, symbols & legends
- ✓ Material types & sizes
- ✓ Cross sections and supplementary information
- ✓ Scale
- ✓ Use of plans on site in conjunction with a locator
- ✓ Accuracy
- ✓ Limitations

This short online 90-minute session will be interactive with many examples of utility plans used and discussed throughout

If delivered in a classroom environment a short practical test can be done to show competence.

To book an online & live session or a traditional classroom session please email
enquiries@sygma-solutions.com

5 DAY PAS128 UTILITY MAPPING & SURVEYING COURSE

TSA & CICES approved and mapped to the ICES competencies for Utility Mapping

Can include the ProQual Level 3 Utility Mapping Qualification as an add on option

www.sygma-solutions.com

The 5 day course is an in depth course delivered by the most experienced trainers and assessors in the industry. Covering PAS128 D,C & B with advanced EM & GPR training.

The course fulfils some of the evidence requirements for the ProQual Level 4 & 5 Utility Mapping Qualifications.

A thorough documented practical and knowledge based assessment will be recorded along with a final survey drawing of a completed area conducted by the delegate.

3 VENUE CHOICES ARE AVAILABLE

Open Course

Sygma Solutions Utility Mapping Centre in Wigan

Open Course

The Survey School in Worcester.

Private course

This will be arranged at your premises or a site of your choice

For beginners new to the industry who do not have a mentor in the workplace, we can offer additional practical sessions throughout the year on demand if necessary.



For more details or to book please contact bookings@sygma-solutions.com

MODULES

Module 1

Desktop Survey & Site Reconnaissance PAS128 Level D & C

- ✓ Understand relevant specifications and standards relating to Utility Surveys and Mapping e.g. PAS128 and PAS256.
- ✓ Obtain (either directly or from 3rd party), interpret and understand statutory undertakers records
- ✓ Site reconnaissance & methods of identifying services prior to use of geophysical detection methods.
- ✓ Understand applicable licensing requirements, legislations and how it applies including CDM considerations: HSG47, NRSWA, Management Act and any other.

ICES GEUS01 A-D

Module 2- Part A

EM Locators Basic Theory - PAS128 Level B (EM)

- ✓ Electrical theory & circuits
- ✓ Effective use of the electromagnetic methods of locating services.
- ✓ Direct connection, induction clamp. Sonde induction, Passive modes

Module 2- Part B

EM Advanced Locating - PAS128 Level B (EM)

- ✓ Field distortion - Peak/Null
- ✓ CD/CM & Depth
- ✓ Extensive practical applications
- ✓ Identify where use of alternative detection methods may be suitable
- ✓ Overview of geophysical methods: - Electromagnetic conductivity, Acoustic pipe detection methods
- ✓ Gyroscopic techniques
- ✓ Drainage surveys

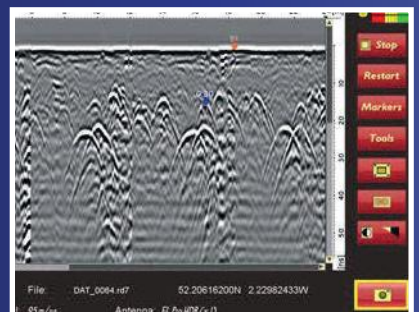
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Module 3

GPR - PAS128 Level B (GPR)

- ✓ Licensing requirements
- ✓ Different GPR technologies
- ✓ Methods of GPR Survey
- ✓ GPR Theory
- ✓ Set up & controls
- ✓ Practical use on site including grid
- ✓ PAS128

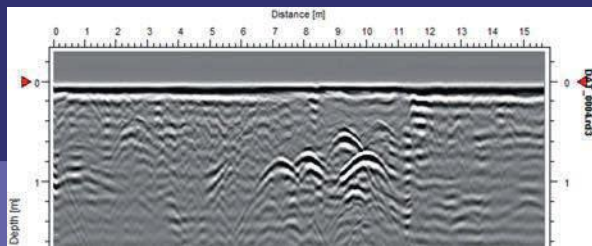
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Advanced Ground Penetrating Radar (GPR) Training

From Sygma Solutions Ltd.

The Advanced GPR course is not manufacturer specific and will cover any GPR system our clients use.



The GPR course is led by utility mapping experts with many years in the field performing utility surveys using GPR.

Sygma Solutions Ltd is the only UK GPR training provider that is:

CITB approved
TSA Approved
EUSR Accredited
A Proqual Approved Centre

All our trainers and assessors are properly TAQA Qualified and all our GPR training & assessment courses are Quality Assured by our fully qualified IQA team.

MODULE 1 - GPR THEORY & PRACTICAL USE

MODULE 2 - DATA COLLECTION AND POST PROCESSING



The course has the perfect mix of theoretical understanding and practical applications.

Linked to the ProQual Utility Mapping Qualifications ensures it will also fulfil the evidence requirements for some units from the Level 4 and level 5

Courses will run at our Utility Mapping Training centre in Wigan, The Survey School at Worcester and can be delivered privately at clients premises or even on site.



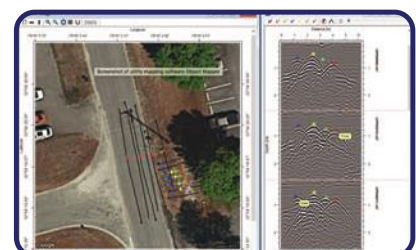
DAY 1 – MODULE 1

- ✓ Introduction to GPR
- ✓ Theory of GPR
- ✓ What is a GPR signal
- ✓ What is a radargram
- ✓ Hyperbola and layer reflectors
- ✓ GPR frequency and its effect on depth penetration & resolution Signal velocity
- ✓ Depth measurement and how to improve accuracies GPR limitations
- ✓ Data Interpretation
- ✓ How to conduct a GPR survey
- ✓ Setting up the GPR
- ✓ Controls & features
- ✓ Wheel calibration
- ✓ Setting up a GRID
- ✓ GPS integration



DAY 2 - MODULE 2 – POST PROCESSING

- ✓ **Data Collection for Post Processing**
 - Use of GPS/TPS
 - Carrying out a Grid Project
 - Data Collection using a Multi-Array antenna.
- ✓ **Post Processing of GPR Data**
 - Filters – When and Why, What the different filters do.
 - Interpolation of 2D data into 3D Cubes/Time Slice Data
- ✓ **Upload of Data to Post Processing Software**
- ✓ **Processing of GPR Data**
- ✓ **Interpretation of Data and adding Markers/Polylines**
- ✓ **Export of interpretation.**



2 Day Advanced High-End EM Locator Training Course

RD8100/Vivax VLOC/Leica Ultra

£350 + Vat per person

FREE OF CHARGE for our
Level 4/5 Learners



The course is mapped to the CICES Competencies for membership GEUS01 Item E – ability.

This advanced course is delivered by the most experience trainers and assessors in the industry. The perfect mix of theory followed by practical training & assessment on a real site.

The practical element is in a built-up area near to a substation with an extensive mixture of real utilities, all requiring different challenges and techniques to locate.

Ongoing practical and documented assessment of the delegates along with certificate of competence for those meeting the standard.

It will cover but is not limited to the following:

- ✓ Electromagnetic location theory and principles
- ✓ Receiver & transmitter set up, menu and controls
- ✓ Choosing the right frequency
- ✓ Earth positioning and its relevance to a locate
- ✓ Signal Clamp
- ✓ Locating HV
- ✓ Distorted magnetic fields, evaluating the magnetic field and the quality of the locate
- ✓ Antenna settings Peak/Null Peak+ etc
- ✓ Depth Estimation
- ✓ High frequency capacitance techniques
- ✓ Current measurement
- ✓ Current direction
- ✓ Where to connect and how to go about completing the survey from start to finish
- ✓ Induction/induction Sweeps/nulling out
- ✓ Sonde location



Delivered by CITB Approved Sygma Solutions at our dedicated Utility Mapping Training centre in Wigan or The Survey School in Worcester. Private courses can also be run at a client's site or premises.

Contact **bookings@sygma-solutions.com**

PROQUAL UTILITY MAPPING QUALIFICATIONS

TRANSPARENT AND FIXED PRICING



Sygma Solutions Ltd – The UK's leading training & assessment provider for utility location and mapping offer these qualifications through a fixed and transparent pricing process, which means no additional or hidden fees for "extra assessments"

Whatever your needs in achieving these qualifications you can be sure Sygma has the Solution from the Level 2 all the way up to Level 6

All prices are PLUS
Proqual Reg fees
for more information:

CONTACT
bookings@sygma-solutions.com

LEVEL 3

Certificate
in Utility
Mapping and
Surveying

£325

LEVEL 4

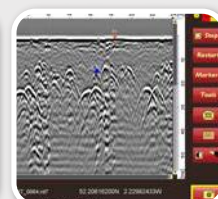
Diploma in
Utility
Mapping and
Surveying

£565

LEVEL 5

Diploma in
Utility
Mapping and
Surveying

£785



Our fixed price fees above all INCLUDE:

Free access to our open days, held at the UK's only dedicated Utility Mapping Training & Assessment Centre in Wigan. These can be used for face to face assessments, mentoring & support. Delegates are free to join us for workbook support or additional training in specific areas needed such as EM & GPR to complete the assessment process. These open sessions can also be delivered online & live in some instances.

- ✓ Initial induction online
- ✓ Tailored assessment plan to suit individuals needs
- ✓ Full access to our online e-portfolio system and workbooks (or hard copies for those who prefer)
- ✓ Full assessor support and mentoring through the workbook process
- ✓ Fastrack and private sessions delivered at customers premises are also an option. Please contact for price

Please note the level 3 qualification is a mandatory requirement for entry into the Level 4 or Level 5.



What courses do we offer?

In Person Training at Our Office or Your Location

- ✓ Genny & CAT inc. HSG47
- ✓ HSG47 Understand Utility Plans
- ✓ EUS Understanding Data from e/gCAT4
using Cat Manager and Radiodetection' Online Portal
- ✓ EUS CAT1 Locate Utility Services
- ✓ EUS CAT2 Implement Safe Digging Practices
- ✓ ProQual Level 2 Award
in Utility Avoidance and the Location of Buried Services in Construction
- ✓ 2 Day Advanced High-End EM Locator Course
- ✓ 3 Day Service Coordinator Course PAS128 Awareness Course
- ✓ 5 Day PAS128 Utility Mapping & Surveying Course
inc. ProQual Level 3 Certificate in Utility Mapping and Surveying
- ✓ 1 & 2 Day Advanced Ground Penetrating Radar Course
- ✓ ProQual Level 3 Certificate (2 Day)
in Utility Mapping and Surveying
- ✓ ProQual Level 4 Diploma (5 Day Fast-Track)
in Utility Mapping and Surveying
- ✓ ProQual Level 5 Diploma (5 Day Fast-Track)
in Utility Mapping and Surveying
- ✓ ProQual Level 6 Diploma (5 Day Fast-Track)
in Utility Mapping and Surveying

Online via MS Teams

- ✓ Genny & CAT Awareness
inc. HSG47
- ✓ Understanding Data from
e/gCAT4
using Cat Manager and
Radiodetection' Online Portal
- ✓ HSG47 Understand Utility
Plans PAS128 Awareness

Online Assessment Only

(No Training)

- ✓ ProQual Level 3 Certificate
in Utility Mapping and Surveying
- ✓ ProQual Level 4 Diploma
in Utility Mapping and Surveying
- ✓ ProQual Level 5 Diploma
in Utility Mapping and Surveying
- ✓ ProQual Level 6 Diploma
in Utility Mapping and Surveying

Bespoke Courses

We also create bespoke courses which can incorporate the correct course for you and in addition; your company documentation & standards, permit systems, USC responsibilities, USAG Form Completion etc...



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