

Lane Rental Industry Publication

Buried Utility and Highway Infrastructure Services

A Publicly Available Specification to
Standardise Information – PAS 256



EVERY JOURNEY MATTERS

PAS 256: Code of practice - capturing, recording, maintaining and sharing location information and data for buried assets

Introduction

The UK has a vast network of utility and highway authority infrastructure buried beneath carriageways, footways and verges. The combined network of these is estimated to be in excess of 4 million km. Around 4 million street works are required every year to repair, upgrade and maintain this network.

Street works cost utilities, developers and authorities an estimated £8 billion per annum and remain a cause of significant disruption to businesses and users. Achieving just 10% efficiency through delivering new initiatives such of this could result in a direct annual cost saving of around £800m, and reduce socio-economic factors; with potential savings being passed to taxpayers and consumers.



In recent years, with a growing population and level of traffic congestion, efforts have been made to improve the administration procedures for street works and to encourage utilities to minimise highway occupation. However, regulatory and commercial pressures can often focus on individual organisations minimising their own direct costs, which can sometimes be in conflict with initiatives to reduce social costs arising from street works.

The quality, accuracy and reliability of records vary across the industry due to limited industry standards. Plans are provided in different formats, on different platforms and to highly variable timescales. This makes coordination of information challenging, costly and bureaucratic. Such challenges will often lead to cancelled permits, delays and re-work all adding to the cost and disruption.

With the requirement to meet the issues noted above plus the pure volume of streetworks carried out in the UK, the need to record buried equipment through Standardisation is now paramount. PAS 256 is the first step to addressing these issues and provides the recommendations to build a uniform and stable solution through the production of a publicly available specification.

The Project

The PAS 256 project, funded by a number of stakeholders, aims to provide the framework for those owning buried assets to:

- drive towards improved accuracy when capturing and recording information
- share more accurate records collaboratively, with those working in the vicinity of their buried assets
- improve the linkage between assets that are part of the critical national infrastructure with initiatives such as Smart Cities, and building information modelling (BIM).



The Institution of Civil Engineers (ICE) worked in collaboration with the British Standards Institution (BSI) to produce the PAS.

An initial launch event was held in 2015 which included discussions on what the standard should look like, providing a critical path and allowing key delegates to guide the outcome.

The PAS was developed by a steering group and delivered in 3 stages over a period of 15 months;

- a) Launch – project initiation, research, drafting
- b) Consensus building – Steering Group review, Public and Review Panel consultation
- c) Publication – Design, PDF publication, Licensing and distribution agreement, Communication

[PAS 256 was published on the BSI website on 31st March 2017](#) and [a launch event was held at ICE headquarters on 11th April 2017](#).

Outcomes

BSI used its extensive databases, technical committees and network of contacts, and worked with ICE to identify the appropriate expert organisations to participate in the development of the PAS in order to assure a credible document was produced.

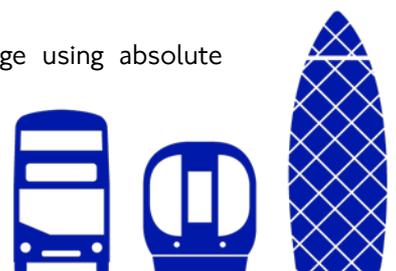
This PAS builds on existing legislation of the New Roads and Street Works Act 1991 (NRSWA), the Traffic Management Act 2004, the equivalent street and roads works legislation in Scotland, Wales and Northern Ireland), and the requirements set out in PAS 128 (A specification for underground utility detection, verification and location).

Over 500 comments were received from the consultation, which were assessed by the steering group or smaller sub working groups with the document amended accordingly.

The finalised PAS has provided a vital first step towards data management and ultimate data standardisation between organisations involved in maintaining buried infrastructure. With the expertise, experience and agreement between the author, steering group, review panel and public, the PAS has successfully made recommendations for:

- a data glossary;
- data formats, such as geography mark-up language (GML);
- transition of spatial data, using relative accuracy as a minimum and moving towards absolute accuracy (including depth), together with supporting evidence such as photographs or tagging;
- the inclusion of decommissioned or abandoned assets when sharing data;
- a target number of days to make data available for sharing from installation;
- the capture of data emanating from works carried out under a NRSWA s50 licence or equivalent;
- the inclusion of local authority and other organisations' buried assets;
- movement from paper or microfiche records to a structured, accessible digital format;
- the capture and sharing of measurable deviations from straight line installations;
- the use of warning and protection devices to aid the final location of the buried asset; and
- symbology, typology, colour coding and layering.

The PAS details data capture, the minimum data necessary for data exchange using absolute accuracy and relative descriptions if absolute accuracy cannot be obtained, optional data, target number of days to make data available for sharing, how to deal with unidentified objects (UBOs) and wrongly identified objects (WROs) etc.



At the same time, the PAS makes references to PAS 1192 (specification for information management), PAS 128, and Building Information Modelling (BIM); taking into account devolved legislations so that the PAS can apply to England, Scotland, Wales and Northern Ireland.

This PAS is not intended to be used retrospectively and therefore only applies to those assets that are:

- Newly-installed and newly-replaced (after the publication of the PAS);
- Surveyed in line with the PAS 128 methodology (survey type A); or
- Exposed whilst other work is being undertaken.

Conclusion / Recommendations

The project was well managed, delivered within budget and issues/challenges were dealt with professionally and swiftly with consensus from all key organisations.

Subject to future funding arrangements, the document is to be reviewed at intervals, not exceeding two years, and any amendments arising from the review will be published as an amended PAS and publicised in Update Standards.

In addition, BSI will meet with the Sponsors to discuss the following options for taking the PAS forward:

- Use the PAS as a seed document for the development of a formal British Standard (BS), European Standard (EN) or International Standard (ISO) – assuming the project is approved by BSI's Planning and Approval team.
- Withdrawal of the PAS

PAS 256 is a catalyst in driving an improvement in the quality of recording buried assets that would also allow further innovative techniques deploying trenchless or minimum dig methodology to be employed with greater confidence and accuracy. An improved quality of records enhances both design and planning which would be beneficial to multi-organisational societal improvements such as future/smart cities and BIM.



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