

PAS 2017:2014

Guide for digital infrastructure to enable access to digital content for small-scale commercial enterprises



Department
for Culture
Media & Sport



bsi
Documents
Document Sharing Hub

Publishing and copyright information

The BSI copyright notice displayed in this document indicates when the document was last issued.

© The British Standards Institution 2014. Published by BSI Standards Limited 2014.

ISBN 978 0 580 80584 4

ICS 35.240.60

No copying without BSI permission except as permitted by copyright law.

Publication history

First published January 2014

Contents

Foreword	ii
Introduction	iii
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 City (and community) resources for the support and development of data information flows	3
5 Integrated data platform	4
6 Digital infrastructure for small-scale commercial enterprises	9
Bibliography	15
List of figures	
Figure 1 – A model for public and private service delivery	6
Figure 2 – A simplified view of the central elements of public and private service delivery in smart city and community systems	7
List of tables	
Table 1 – Summary of digital infrastructure and facilities recommendations	10



Foreword

This PAS was sponsored by the Department for Culture, Media & Sport (DCMS). Its development was facilitated by the British Standards Institution (BSI) and it was published under licence from The British Standards Institution. It came into effect on 31 January 2014.

Acknowledgement is given to Mike Perry of the Building Research Establishment (BRE) as the Technical Author for this PAS.

BSI also wishes to acknowledge the following organizations that were involved in the development of this PAS as members of the steering group:

- British Telecom (BT);
- Building Research Establishment (BRE);
- Core Cities
- Department for Culture, Media & Sport (DCMS);
- Digital Birmingham;
- Global Smart Transformation Limited (GST Ltd.);
- Health over Internet Protocol (HoIP);
- Intellect Technology Association;
- Nexans;
- OpenHub Smart Homes Limited;
- Qmara Limited.

Wider comments from other interested parties were invited by BSI. The expert contributions made by the organizations and individuals consulted in the development of this PAS are gratefully acknowledged.

The British Standards Institution retains ownership and copyright of this PAS. BSI Standards Limited as the publisher of the PAS reserves the right to withdraw or amend this PAS on receipt of authoritative advice that it is appropriate to do so. This PAS will be reviewed at intervals not exceeding two years, and any amendments arising from the review will be published as an amended PAS and publicized in *Update Standards*.

The PAS process enables a specification to be rapidly developed in order to fulfil an immediate need in industry. A PAS can be considered for further development as a British Standard, or constitute part of the UK input into the development of a European or International Standard.

Relationship with other publications

PAS 2017 aligns with the structure given in PAS 700:2009 and references it where relevant.

PAS 2016:2010 was sponsored by the Department for Business, Innovation & Skills (BIS) in order to provide guidance regarding digital communications infrastructures to, and within, new build domestic dwellings. The concept of PAS 2017 was to address a similar issue, to follow on from PAS 2016 and provide guidance for the provision of digital infrastructure and data access within commercial premises designed to be used by small-scale commercial enterprises. The different approaches taken by PAS 2016 and PAS 2017 and the slight differences in terminology is an indication of the rapid changes occurring within the digital communications industry and the development of work around smart city systems.

Use of this document

As a guide, this PAS takes the form of guidance and recommendations. It should not be quoted as if it were a specification or a code of practice and claims of compliance cannot be made to it.

Presentational conventions

The guidance in this standard is presented in roman (i.e. upright) type. Any recommendations are expressed in sentences in which the principal auxiliary verb is “should”.

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with this PAS cannot confer immunity from legal obligations.

Particular attention is drawn to the following specific Acts:

- The Health and Safety at Work etc. Act 1974 [1];
- The Private Security Industry Act 2001 [2].

Introduction

We live in challenging times. Across the globe the economic climate is uncertain. A direct consequence of this economic uncertainty is a dramatic increase on resource constraints, particularly on public service resources of all types.

These challenges are particularly acute in dense urban communities (cities) because of the intensity and complexity of demands.

Overcoming these challenges requires new ways of thinking and new ways of delivering resources, such as public services. Traditional delivery methods are becoming outdated and unsustainable. Other physical and social resources, e.g. energy, transport, social care, are also using outdated delivery methods.

The daily operations of a modern city are founded on data and information flows. This is particularly important where supply is required to meet demand. For historical reasons, each resource delivery stream has developed, and is presently operated, as an independent resource channel, having little or no interaction with related resource channels. The data and information about, for example, energy, is locked into an energy silo.

Digital infrastructure provides an opportunity to make radical changes in the way that contemporary and future communities monitor, manage and control resource consumption. By providing small-scale commercial enterprises with adequate digital infrastructure and access to digital content, there is the potential to make data openly accessible. Subsequently, it would be possible to freely transmit the data and information flows that are currently locked into different delivery silos across a variety of services and

businesses. This city (or community-wide) concept of digital infrastructure is discussed in Clause 4 and Clause 5 in PAS 2017.

Opening access to different data and information flows could result in:

- the integration of service delivery (this is increasingly important in complex physical and social city environments);
- the engagement of the public sector with the private sector in the delivery and maintenance of public services (thereby divesting the public purse of the cost liability of delivering public services while potentially improving private sector efficiency); and
- the development of new service and content offerings, driven by the commercial sector. Such new service and content offerings could be innovative delivery vehicles for public services and enable commercial activity. In particular, this could be beneficial for small-scale commercial enterprises (see 5.1, Note 1), which form part of the small to medium-sized enterprise (SME) sector.

Such outcomes align with the aim of city authorities to drive economic recovery and reduce the cost of public service delivery in the socio-economic and geographic areas for which they are responsible. The concept of access to open data is referred to as an integrated data platform.

Clause 6 of PAS 2017 provides recommendations about the type of digital infrastructure small-scale commercial enterprises need to have in place in their working environment (wherever this might be) to provide effective communications with the integrated data platform and their market delivery processes.



This page deliberately left blank.

1 Scope

PAS 2017 provides guidance on:

- the digital infrastructure and enabling access to digital content required to support commercial activities for small-scale commercial enterprises;
- how to assess the requirements of the digital infrastructure and access to digital content to support small-scale commercial enterprise operations and smart city digital systems;
- the need for open-access systems and interoperability between such systems;
- standards and supporting documentation for digital infrastructure and digital service systems.

This PAS is not intended to:

- provide guidance on digital infrastructure within the premises of commercial organizations having more than 20 people;

- provide guidance on digital infrastructure and accessing digital content within residential premises;
- provide guidance on entire smart city digital systems.

The primary audience groups for this PAS are:

- local authorities and other public service specifiers who have a major role in defining policy and in developing smart city systems;
- private sector owners and investors in business parks and industrial centres;
- specifiers of digital systems, developers, builders and installing and commissioning contractors, who are responsible for delivering, installing and commissioning digital infrastructure and enabling access to digital content.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS 7671, *Requirements for electrical installations*

PAS 700:2009, *Provision of ICT facilities and services in workplaces – Specification*

IEEE 802.11b, *Wireless network specification*



3 Terms and definitions

For the purpose of this PAS the following terms and definitions apply.

3.1 cabling

infrastructure constructed from cables (made of copper, silica or plastic) used for the transmission of digital data and digital content

NOTE 1 *At the time of publication, copper is the dominant medium for cabling, although silica and plastic optical fibre are increasingly used, and are preferred where high bandwidth is required, e.g. video-on-demand services.*

NOTE 2 *“Cabling” might also be referred to as “cabled media”.*

3.2 data catalogue

collection of data and information collated in near real time, in response to end user enquiries on specific issues

NOTE 1 *Data catalogues are not static repositories, but are formed in response to user enquiries and exist for the life time of the enquiry. This eliminates the need to maintain large, expensive and static databases. Data catalogues are an output of digital platforms. They are distributed intelligence, which is a core component of smart city (or community) systems.*

NOTE 2 *Real time collation of data and information is unlikely to be achieved, due to the scale of operations, although digital operations might be able to achieve a close time-frame.*

3.3 data warehouse

central repository of open access data and information, created by hosting or integrating information from different sources

NOTE *A data warehouse is an essential component of an integrated data platform, and is the source of digital content.*

3.4 digital infrastructure

framework required for digital communications allowing reception of data and information services delivered externally, and for the transmission of digital data and information

3.5 integrated data platform

virtual platform serving a community area, such as a city, through which digital infrastructure and digital data used and provided by public services, industries and private businesses can be shared and exchanged

NOTE *The integrated data platform forms the basis of a smart city system. See also Clause 5.*

3.6 internet service provider (ISP)

commercial supplier of digital infrastructure, digital content and access to digital content

3.7 interoperability

ability of different application functions to use shared information in a consistent way

NOTE 1 *This requires interworking as a building block as well as coexistence, and adds business rules, processes, and security provisions that enable applications to be joined together.*

NOTE 2 *Interoperability is a methodology that can give end users the confidence to buy and specify products from different companies both in the present and in the future, knowing that they operate together. Achieving this requires several phases of standardization to ensure that there is integration from the physical connectors to the way systems function. There are three phases of integration, which are: co-existence, interworking and interoperability.*

NOTE 3 *CWA 50560 is an interoperability framework specification for services to the home.*

3.8 open data

data that is freely available to everyone to use and republish as they wish, without restrictions from copyright, patents or other mechanisms of control

3.9 smart city system

integrated system of digital infrastructure and access to digital content to monitor, manage and control physical and social resource

NOTE 1 *These systems are capable of a diverse range of functions, including providing a context to encourage and enable economic activity – particularly for small-scale commercial enterprises.*

NOTE 2 *A “smart city” system is often also referred to as a “future city” or “next generation” system.*