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EUROPEAN STANDARD

Access, Terminals, Transmission and Multiplexing (ATTM); Broadband Deployment and Lifecycle Resource Management; Part 1: Overview, common and generic aspects

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Foreword

This European Standard (EN) has been produced by ETSI Technical Committee Access, Terminals, Transmission and Multiplexing (ATTM).

The present document is part 1 of a multi-part deliverable covering lifecycle resource management of broadband deployment as identified below:

ETSI EN 305 174-1: "Overview, common and generic aspects";

ETSI EN 305 174-2: "ICT Sites";

ETSI TS 105 174-4: "Access Networks";

ETSI EN 305 174-5: "Customer network infrastructures";

ETSI TS 105 174-6: "Cable Access Networks";

ETSI TS 105 174-7: "Digital multiservice cities";

ETSI EN 305 174-8: "Management of end of life of ICT equipment (ICT waste / end of life)".

Other documents are planned for development to extend this multi-part deliverable. These are listed in annex B and are mentioned in the present document.

National transposition dates	
Date of adoption of this EN:	22 February 2018
Date of latest announcement of this EN (doa):	31 May 2018
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	30 November 2018
Date of withdrawal of any conflicting National Standard (dow):	30 November 2018

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the ETSI Drafting Rules (Verbal forms for the expression of provisions).

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Introduction

The increasing interaction between the different elements of the Information Communication Technology (ICT) sector (hardware, middleware, software and services) supports the concept of convergence in which:

- multi-service packages can be delivered over a common infrastructure;

- a variety of infrastructures is able to deliver these packages;

- a single multi-service-package may be delivered over different infrastructures.

As a result of this convergence, the development of new services, applications and content has resulted in:

- an increased demand for bandwidth, reliability, quality and performance, with a consequent increase in the demand for power which has implications for cost and, in some cases, availability;

- an associated continuous evolution of ICT equipment.

It is therefore important to consider the environmental viability of all network elements necessary to deliver the required services in terms of the management of their operational aspects i.e. energy management (including energy efficiency) and the management of the End-of-Life (EoL) of the ICT equipment.

NOTE: The term "environmental viability" is used while recognizing that well established treatments of "sustainability" feature three separate viability objectives (environmental, economic and social). For the purposes of this multi-part deliverable, only operational aspects of environmental viability are considered. A wider approach to environmental viability takes other factors into account including the use of raw materials and avoidance of hazardous substances in the construction of infrastructure or ICT equipment-these factors are not considered.

New technologies and infrastructure strategies are expected to enable operators to decrease the energy consumption, for a given level of service, of their existing and future infrastructures thus decreasing their costs. This requires a common understanding among market participants that only standards can produce.

This multi-part deliverable specifies the general engineering of various broadband infrastructures to enable the most effective energy management (and management of other resources) and the appropriate measures for EoL treatment of ICT equipment. Certain of the standards may specify requirements for interoperability.

The present document is part 1 of a multi-part deliverable and provides an overview of the standards series together with a definition of the common and generic aspects to which the other standards in the series conform.

The present document been produced by ETSI Technical Committees Access, Terminals, Transmission and Multiplexing (ATTM) and Cable in close collaboration with CENELEC via the Installations and Cabling Co-ordination Group (ICCG).

1 Scope

The present document is part 1 of a multi-part deliverable which specifies the general engineering of various broadband infrastructures to enable the most effective energy management (and management of other resources) and the appropriate measures for End-of-Life (EoL) treatment of ICT equipment.

This multi-part deliverable does not address the following aspects of the broadband network sub-systems:

- implications for carbon "footprint";

- resources used to construct the sub-systems;

- the nature or method of production of the energy consumed by the infrastructures.

The present document provides an overview of the ETSI EN 305 174 series of standards together with a definition of the common and generic aspects to which the other standards in the series conform.

Clause 2 and clause 3 contain references, definitions, symbols and abbreviations which relate to this part; similar information will be included in the corresponding clauses of the other parts, thus ensuring that each document can be used on a "stand-alone" basis.

Clause 4 describes the network sub-systems applicable to broadband infrastructures and their interconnections that are addressed by the ETSI EN 305 174 series.

Clause 5 specifies the format of the other parts of the ETSI EN 305 174 series (other than ETSI EN 305 174-8 [i.6]).

2 References

2.1 Normative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at https://docbox.etsi.org/Reference/.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are necessary for the application of the present document.

Not applicable.

2.2 Informative references

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NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

[i.1] Recommendation ITU-T I.113: "Series I: Integrated services digital network: General structure - Terminology: Vocabulary of terms for broadband aspects".

[i.2] CENELEC EN 50700:2014: "Information technology - Premises distribution access network (PDAN) cabling to support deployment of optical broadband networks".

[i.3] CENELEC EN 50174-3:2013: "Information technology - Cabling installation - Part 3: Installation planning and practices outside buildings".

[i.4] ETSI EN 305 174-2: "Access, Terminals, Transmission and Multiplexing (ATTM); Broadband Deployment and Lifecycle Resource Management; Part 2: ICT Sites".

[i.5] ETSI EN 305 174-5-1: "Access, Terminals, Transmission and Multiplexing (ATTM); Broadband Deployment and Lifecycle Resource Management; Part 5: Customer network infrastructures; Sub-part 1: Homes (single-tenant)".

[i.6] ETSI EN 305 174-8: "Access, Terminals, Transmission and Multiplexing (ATTM); Broadband Deployment and Lifecycle Resource Management; Part 8: Management of end of life of ICT equipment (ICT waste / end of life)".

[i.7] Mandate M/462: "Standardisation mandate addressed to CEN, CENELEC and ETSI in the field of ICT to enable efficient energy use in fixed and mobile information and communication networks".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

access network: functional elements (that is equipment and infrastructure) that enable communication between an operator site (OS) and a customer network

access provider: operator or other entity providing the means to enable external telecommunications service provision to a subscriber

NOTE: Source: CENELEC EN 50700:2014 [i.2] and CENELEC EN 50174-3:2013 [i.3].

Base Station (BS): network telecommunications equipment which serves one or more cells within a coverage area of a mobile network

base station site: Network Distribution Node (NDN) which accommodates a base station

broadband: telecommunications service capable of providing more than 2 048 kbit/s (Recommendation ITU-T I.113 [i.1]) full-rate capacity in at least one direction

NOTE: ISDN is not considered to be a broadband technology and is not addressed in the present document.

cable access network: access network provided by cable operators comprising optical fibre and metallic cabling providing direct connection to customer premises

core network: functional elements (that is equipment and infrastructure) that enable communication between operator sites (OSs) or equivalent ICT sites

customer network: functional elements (that is equipment and infrastructure) that enable communication between a network interface unit (NIU), network termination point (NTP) or external network interface (ENTI), as appropriate, and one or more pieces of terminal equipment (TE)

Customer Premises (CP): any location which is the sole responsibility of the customer

End-of-Life (EoL): established point in a product life cycle after a period of primary use and at which a decision is required with regard to reuse, recycling or disposal

end-use IT equipment: terminal equipment (TE) of a fixed access network, user equipment (UE) of a mobile access network or network interface unit (NIU) of a cable access network

External Network Test Interface (ENTI): point in or near the customer premises (inside or outside the customer network) accessible to the fixed access network operator for testing purposes

Fibre Node (FN): device which performs a media conversion between an optical fibre cable link and a coaxial cable link in a cable access network

fixed access network: access network provided by telecommunications operators comprising optical fibre and metallic cabling providing direct connection to customer premises

ICT equipment: equipment providing data storage, processing and transport services

NOTE: A combination of Information Technology Equipment and Network Telecommunications Equipment.

ICT site: site containing structures or group of structures dedicated to the accommodation, interconnection and operation of ICT equipment together with all the facilities and infrastructures for power distribution and environmental control together with the necessary levels of resilience and security required to provide the desired service availability

Information Technology Equipment (ITE): equipment providing data storage, processing and transport services for subsequent distribution by network telecommunications equipment (NTE)

Last Operators Connection point (LOC): interface to the fixed access transport networks of one or more operators from which cabling is routed to a customer network

mobile access network: telecommunications network in which the access to the network (connection between user equipment and network) is implemented over the air interface

Network Data Centre (NDC): data centre embedded within the core network

NOTE: A network data centre of a cable access network may be termed a master head-end.

Network Distribution Node (NDN): grouping of NTE equipment within the boundaries of an access network providing distribution of service from an operator site (OS)

NOTE: Where all the Network Telecommunications Equipment (NTE) at a given location is under common governance, any supporting infrastructure for power distribution and environmental control together with the necessary levels of resilience and security required to provide the desired service availability is included as part of the NDN.

Network Interface Unit (NIU): principal device within customer premises allowing user access to the services provided by the cable access network

Network Telecommunications Equipment (NTE): equipment between the boundaries of, and dedicated to providing connection to, core and/or access networks

Network Termination Point (NTP): physical point(s) at which a subscriber is provided with access to the operator network (this may be co-located with an external network test interface)

Operator Site (OS): premises accommodating network telecommunications equipment (NTE) providing direct connection to the core and access networks and which may also accommodate information technology equipment (ITE)

NOTE 1: An operator site that is only connected to the core network is considered as a network data centre.

NOTE 2: An operator site of a cable access network may be termed a local head-end.

service provider: operator of any service that furnishes telecommunications content (transmissions) delivered over access provider facilities

NOTE 1: The access provider and the service provider can be a single entity.

NOTE 2: Source: CENELEC EN 50700:2014 [i.2] and CENELEC EN 50174-3:2013 [i.3].

subscriber: identifiable entity within the premises that requires or may require a direct connection to the access network

Terminal Equipment (TE): principal device within customer premises allowing user access to the services provided by the fixed access network