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**Equipment Engineering (EE);
European telecommunications standard for equipment practice
Part 1: Introduction and terminology**

ETSI

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Foreword

This European Telecommunication Standard (ETS) has been produced by the Equipment Engineering (EE) Technical Committee of the European Telecommunications Standards Institute (ETSI).

This ETS is part 1 of a 4 part ETS, aimed at setting out on a common basis, the installation engineering requirements for telecommunication practice. This part, Part 1, is a general introduction and explains the terminology used. Part 2 specifies the engineering requirements for racks and cabinets. Part 3 covers the engineering requirements for miscellaneous racks/cabinets, and Part 4 covers the engineering requirements for subracks in miscellaneous racks and cabinets.

This ETS applies to all telecommunications equipment forming part of public telecommunications networks and is based on the work of IEC Sub Committee 48D (see informative Annex B).

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1 Scope

This European Telecommunication Standard (ETS) sets out the major engineering requirements for telecommunications equipment forming part of a public telecommunications network installed either on public telecommunications operators' sites or in premises of operators' customers.

It is expected that the areas of transmission equipment and switching equipment will increasingly merge into one. As a result, this ETS should be applied to all forms of telecommunications equipment.

The operating authorities should be given the data to help them plan buildings and building utilization, including ceiling heights, equipment and traffic areas, hallways and doors, and transport installations (freight elevators, loading ramps, etc.). They also need to be able to compute the structural design requirements and the type and scope of air conditioning needed.

It should be made possible to expand existing installations, and to combine equipment from different manufacturers. Therefore, operating authorities are guaranteed a wide scope for system selection.

The equipment designer should be able to derive a suitable mechanical design for telecommunications equipment.

Such a scope calls for standardization of certain levels in the mechanical hierarchy, e.g.:

- dimensions for racks, miscellaneous racks and subracks. The definitions of cabinets and racks contained in IEC publication 916 [1], are:
 - Cabinet:** a free-standing and self-supporting enclosure for housing electrical and/or electronic equipment. It is usually fitted with doors and/or side panels which may or may not be removable;
 - Rack:** a free-standing or fixed structure for housing electrical and/or electronic equipment;
- accessibility of rack rows;
- cable access;
- heat load;
- static load;
- compatibility with Electro-Magnetic Compatibility (EMC) and Electro-Static Discharge (ESD) requirements.

Existing equipment practices are not covered by this ETS.

2 Normative references

This ETS incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- [1] IEC publication 916, first edition (1988): "Mechanical structures for electronic equipment - Terminology".
- [2] IEC publication 917, first edition (1988): "Modular order for the development of mechanical structures for electronic equipment practices".
- [3] Appendix B to IEC publication 917: "Guide for the users of IEC publication 917".

3 Mechanical equipment interfaces

When defining an equipment practice, the mechanical interfaces between parts (of the equipment concerned) shall be specified.

These interfaces are defined as the physical boundaries between different parts and are characterized by co-ordination dimensions.

All environmental considerations (including electro-magnetic and electro-static) shall be addressed within these dimensional constraints.

4 The multi-level approach

In most equipment practices subracks are mounted in racks/cabinets. Thus, mechanical interfaces, i.e. boundaries, exist between these different pieces of equipment.

However, to avoid unnecessary specifications, the restriction is made that minimal requirements are only stated for the mechanical interfaces between equipment of different manufacturers or for functionally different equipment from a single manufacturer.

This means, for example, that equipment delivered in a rack/cabinet from a single manufacturer has only to fulfil the requirements regarding the mechanical interface between the rack/cabinet and the environment and not any requirements regarding the mechanical interfaces inside the rack/cabinet. In the framework of this ETS, this situation refers to the rack/cabinet as a complete, independent, mechanical entity.

The specification of the miscellaneous rack/cabinet is thus determined by the mechanical interfaces to the environment and between the rack and the installed subracks.

NOTE: The miscellaneous rack has to accommodate subracks of several different types of equipment and suppliers.

These two levels may be expanded towards an interface specification, e.g. between miscellaneous subracks and plug-in units. Such an expansion depends on future technical needs and necessities, and is not, therefore, included within this ETS.

The present standard is presented in four parts. This part constitutes an introduction and terminology. Part 2 specifies the engineering requirements for racks/cabinets, and Part 3 the engineering requirements for miscellaneous racks/cabinets - the miscellaneous racks and cabinets have to incorporate subracks of several types of equipment and/or suppliers. Part 4 covers engineering requirements for subracks in miscellaneous racks (see figure 1).

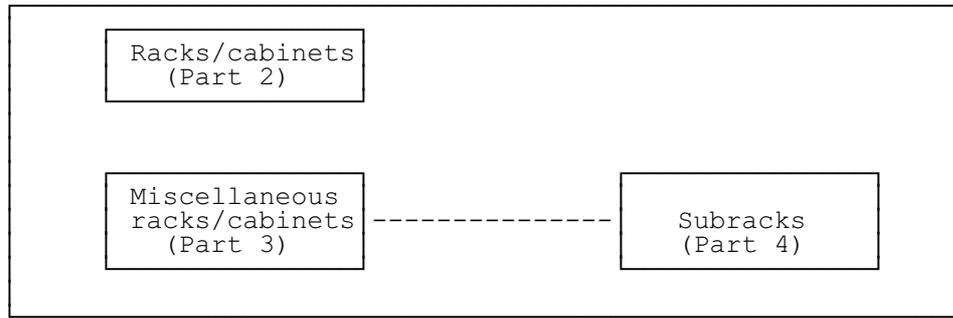


Figure 1

Annex A (informative): Timescale

It is a requirement that all ETSI standards are transposed into national standards within ETSI member countries, but adherence to the standards remains voluntary unless there are other legislative provisions e.g. a "NET" (or CTR in future), or a Community Directive calling up the standard. As the standard is voluntary, no timescale has yet been laid down for the withdrawal of national standards and the transposition of new ETS into national requirements.

In view of these facts, it is the considered opinion of the ETSI TC EE, that ETSI member countries should implement the provisions of each relevant part on the following basis, although it is appreciated that this would not be binding in any way.

The arrangements to be adopted should be in line with the formula $T1 = T0 + 5$ years, where $T0$ is the date of adoption of the relevant part of this ETS. From $T0$, the use of any equipment which is in line with the provisions of the relevant part of this standard should not be refused on equipment practice grounds. From $T1$, any equipment supplied to a customer in an ETSI member country should conform with the relevant part of this ETS.

Customers in ETSI member countries who wish to purchase equipment which is delivered before $T1$, and which is not in conformity with the relevant part of this ETS, should not be forced on grounds of equipment practice to abandon their intention.

Annex B (informative): IEC Sub Committee 48D publication

This ETS is based on the following standard:

"Modular order for the development of mechanical structures for electronic equipment practices.
IEC 917-2: Sectional standard: Interface co-ordination dimensions for the 25 mm equipment practice".

IEC 917-2-2 is currently following approval procedure as IEC 48D(CO)32.

History

Document history	
January 1994	First Edition
February 1996	Converted into Adobe Acrobat Portable Document Format (PDF)