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**EMC, resistibility and safety requirements and
guidance for determining responsibility under
co-located information and communication
technology installations**

Recommendation ITU-T K.58



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Recommendation ITU-T K.58

EMC, resistibility and safety requirements and guidance for determining responsibility under co-located information and communication technology installations

Summary

With the liberalization of telecommunications and the convergence of information technology (IT) and communication equipment, many services are provided by several operators on the same cable and within the same location. Equipment owned by different operators is installed in the same telecommunication facilities and information and communication technology (ICT) installations and, in many cases, is interconnected. Therefore, problems related to electromagnetic compatibility (EMC), resistibility and safety can occur.

Recommendation ITU-T K.58 describes the necessary steps to ensure safe and problem-free operation in co-located ICT installations from EMC, resistibility and safety points of view.

This Recommendation also gives guidance for determining responsibility of EMC problems in co-located ICT installations.

History

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FOREWORD

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The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

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Table of Contents

Page

1	Scope	1
2	References.....	1
3	Definitions	3
3.1	Terms defined elsewhere	3
3.2	Terms defined in this Recommendation.....	3
4	Abbreviations and acronyms	3
5	Configuration and problems in a co-located ICT installations.....	4
6	Issues to be considered	4
7	Guiding principle	5
8	Typical EM environment in co-location.....	5
9	Requirements	5
9.1	General conditions.....	6
9.2	Safety.....	6
9.3	EMC requirements.....	6
9.4	Resistibility.....	6
9.5	Earthing and bonding	7
9.6	Interface and port condition.....	7
10	Procedure for countermeasures.....	8
10.1	Safety.....	8
10.2	EMC	8
10.3	Resistibility.....	9
10.4	Aspects to be considered	9
11	Guidance for distinguishing responsibility	9
11.1	Determining the cause of the problem.....	9
11.2	Responsibility	10
	Appendix I – Example of EMI problem in co-located environment	15
I.1	Introduction	15
I.2	Example of the procedure for how to solve an EMI problem in co-located environment.....	15
	Bibliography.....	20

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EMC, resistibility and safety requirements and guidance for determining responsibility under co-located information and communication technology installations

1 Scope

The purpose of this Recommendation is to provide guidance aimed at ensuring safe and problem-free operation in co-located information and communication technology (ICT) installations from the viewpoint of electromagnetic compatibility (EMC), resistibility and safety.

This Recommendation deals with the following environments where equipment owned by several operators can be installed:

- telecommunication centres;
- data centres;
- remote electronic sites;
- in some instances, the customer premises when the equipment owned by operators is installed in that environment.

Minimum requirements are given in this Recommendation in order to ensure safe and problem-free operation and to reduce EMC, resistibility and safety problems. The main aspects are: safety for humans and equipment; electromagnetic emission and immunity; resistibility against overvoltage and overcurrent; and earthing. The procedures and countermeasures that are used in case of problems are also described in this Recommendation.

Also, this Recommendation provides guidance on determining responsibility when an EMC problem occurs. If national regulations or agreements for co-location between operators exists, then this Recommendation supports the items that these documents do not cover.

Requirements that are not related to EMC, resistibility and safety are outside the scope of this Recommendation.

2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

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|--------------|---|
| [ITU-T K.11] | Recommendation ITU-T K.11 (2009), <i>Principles of protection against overvoltages and overcurrents</i> . |
| [ITU-T K.12] | Recommendation ITU-T K.12 (2010), <i>Characteristics of gas discharge tubes for the protection of telecommunications installations</i> . |
| [ITU-T K.20] | Recommendation ITU-T K.20 (2011), <i>Resistibility of telecommunication equipment installed in a telecommunications centre to overvoltages and overcurrents</i> . |
| [ITU-T K.21] | Recommendation ITU-T K.21 (2011), <i>Resistibility of telecommunication equipment installed in customer premises to overvoltages and overcurrents</i> . |

- [ITU-T K.27] Recommendation ITU-T K.27 (1996), *Bonding configurations and earthing inside a telecommunication building.*
- [ITU-T K.28] Recommendation ITU-T K.28 (2012), *Parameters of thyristor-based surge protective devices for the protection of telecommunication installations.*
- [ITU-T K.34] Recommendation ITU-T K.34 (2003), *Classification of electromagnetic environmental conditions for telecommunication equipment – Basic EMC Recommendation.*
- [ITU-T K.35] Recommendation ITU-T K.35 (1996), *Bonding configurations and earthing at remote electronic sites.*
- [ITU-T K.37] Recommendation ITU-T K.37 (1999), *Low and high frequency EMC mitigation techniques for telecommunication installations and systems – Basic EMC Recommendation.*
- [ITU-T K.43] Recommendation ITU-T K.43 (2009), *Immunity requirements for telecommunication equipment.*
- [ITU-T K.44] Recommendation ITU-T K.44 (2012), *Resistibility tests for telecommunication equipment exposed to overvoltages and overcurrents – Basic Recommendation.*
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- [ITU-T K.66] Recommendation ITU-T K.66 (2011), *Protection of customer premises from overvoltages.*
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3 Definitions

3.1 Terms defined elsewhere

None.

3.2 Terms defined in this Recommendation

This Recommendation defines the following terms:

3.2.1 information and communication technology (ICT): Technologies and equipment that handle (e.g., access, create, collect, store, transmit, receive, disseminate) information and communication.

3.2.2 co-located ICT installations: Installations containing telecommunications and ICT equipment from more than one operator, being located within distinct and separate sections of the equipment room and sharing common infrastructure (i.e., earthing and bonding arrangement, power supply, etc.).

4 Abbreviations and acronyms

This Recommendation uses the following abbreviations and acronyms:

AC	Alternating Current
ADSL	Asymmetric Digital Subscriber Line
DC	Direct Current
DSL	Digital Subscriber Line
DSLAM	Digital Subscriber Line Access Multiplexer
EM	Electromagnetic
EMC	Electromagnetic Compatibility
EMI	Electromagnetic Interference
ESD	Electrostatic Discharge
ICT	Information and Communication Technology
IEC	International Electrotechnical Commission
IT	Information Technology
LPS	Lightning Protection System
MDF	Main Distribution Frame
POTS	Plain Old Telephone Service
POI	Point Of Interference
SE	Source Equipment
SEO	Source Equipment Owner
SPD	Surge Protective Device
VE	Victim Equipment
VEO	Victim Equipment Owner