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INTERNATIONAL ELECTROTECHNICAL COMMISSION

TECHNICAL COMMITTEE CISPR: INTERNATIONAL SPECIAL COMMITTEE ON RADIO INTERFERENCE (CISPR)

Standardisation policy of CISPR

Foreword

The CISPR Guide, which was previously been available on the IEC Website EMC Zone, was reviewed by the CISPR Chairman's Advisory Group between the 2010 and 2011 CISPR plenary meetings. An outcome of this review has been to remove the parts which relate to the history of CISPR with a view to publishing that material at a later date in CISPR 16-3. The CISPR Guide now available on the EMC Zone now concentrates on guidance of CISPR standards.

A further outcome of the review was a discussion on the standardisation policy of CISPR and how it relates to other Technical Committees in the IEC and to bodies outside the IEC. The CISPR Steering Committee prepared a standardisation policy document which was circulated as CISPR/1200/DC and received comments from National Committees, following which a revised document was circulated as CISPR/1210/INF.

During the CISPR plenary meeting on 18 October 2011, the CISPR Standardisation Policy was discussed. The decision of the plenary meeting was that the text of CISPR/1210/INF should be published on the IEC Website EMC Zone as the CISPR Standardisation Policy.

1 Range of electric and electronic products covered by the whole set of CISPR EMC standards and relations of CISPR with IEC Product Committees

- *The collection of CISPR standards covers, in their scope, EMC requirements for all existing and upcoming types of electric and electronic apparatus and systems*

CISPR standards cover within their scope, requirements for the control and limitation of disturbances for all types of electric and electronic products, systems and installations. In line with the Terms of Reference (ToR) of CISPR, the requirements and respective limits found therein were primarily created by taking into account the protection needs of radio services and applications operated in the electromagnetic environments defined in IEC 61000-2-5.

In line with the general standardisation policy of the IEC, the CISPR agreed by convention that these requirements establish the essential EMC requirements also recommended for use in national or regional regulation. In some countries the term "appropriate" is stated in lieu of using "essential". These terms are intended to have the same or nearly the same meaning.

Amongst these CISPR standards the generic emission standards IEC 61000-6-3 and IEC 61000-6-4 (which were developed by CISPR), contain complete sets of appropriate technical emission limits and measurement methods for compliance tests at standardized test sites which are independent from the respective type of product concerned. The EMC requirements of these standards fully

address the minimum requirements for any type of product intended for operation and use in the respective environment(s).

Note: Hereafter, IEC 61000-6-3 and IEC 61000-6-4 are referred to as the IEC generic standards even though CISPR is responsible for them.

More specific and product type related requirements may be found in the CISPR product family standards. The CISPR subcommittees may decide, upon their own discretion and expertise, on deviations in the EMC requirements from those found in the IEC generic emission standards, for product families they are responsible for.

- *Scopes of CISPR standards*

The scopes of CISPR standards shall not exclude special types of products or product families, even when other IEC product committees provide appropriate EMC product or product family standards. Where no CISPR product emission standards exist, the IEC generic emission standards shall be referenced by IEC product committees, though generic standards do not take precedence over product standards.

In specific cases, CISPR may also publish product immunity standards in cooperation with TC77 and IEC product committees, if existing, in accordance with Guide 107. Examples of such publications are CISPR14-2, CISPR 20 and CISPR 24.

- *Competence of CISPR in respect of protection of radio reception*

In case of specific product-related emission limits in IEC product standards deviating from the requirements specified in the relevant CISPR or IEC generic emission standards, the CISPR can and will only adopt those limits for implementation in its standards, which do not contradict the mission and the ToR of CISPR. This competence in determination of permissible RF disturbances with due regard of the protection of radio services and appliances remains solely within CISPR, for only here are all interested parties such as manufacturers, administrations, radio users and radio service providers represented in the development of the related EM emission standards.

- *For collaboration with other IEC Product Committees, CISPR takes the lead for the emission requirements in the radio frequency range.*

CISPR standards will continue to contain particular requirements which the CISPR regards as essential and appropriate for products or product families. Other IEC product committees providing an EMC standard or a product standard with an EMC clause which gives relaxations in the emission requirements compared to the respective CISPR or IEC generic emission standards may be tolerable for CISPR in line with IEC Guide 107. In such cases, further collaboration between CISPR and the respective IEC product committee may be necessary to ensure further alignment of the EMC requirements within the different standards.

- *Overlapping scopes of CISPR standards and IEC product standards in terms of emission requirements*

In case of IEC product standards which have been developed with due observation of IEC Guide 107, the overlap in the scopes of the CISPR standard and related IEC standard(s) does no harm since their EMC requirements will complement each other. These requirements should be identical as a consequence of collaboration between CISPR and the related IEC TC during the development of the IEC product standard. However, due to the structure of IEC and its standardisation policy reflected in IEC Guide 107 a total match of the EMC requirements in CISPR product family and IEC product standards cannot be expected, if only for reasons of different ToR of both kinds of standardisation bodies.

In the case of a product subject to overlapping scopes, any of the applicable CISPR standards can be used to show compliance with the essential EMC requirements established by CISPR.

2 Completeness of CISPR standards

- *CISPR and IEC generic emission standards cover the whole radio frequency range from 9 kHz to 400 GHz*

In relation to the control of conducted and/or radiated disturbances in the radio frequency range, each CISPR and IEC generic emission standard covers the entire frequency range from 9 kHz to 400 GHz. Limits for RF disturbances may not always be specified over the whole frequency range. The respective subcommittee of CISPR determines whether limits have to be specified for certain frequency ranges, using careful consideration of the RF characteristics of the product family concerned and the characteristics of radio services which could suffer from Radio Frequency Interference (RFI) in the frequency range concerned.

If a CISPR standard does not cover the total frequency range from 9 kHz to 400 GHz, then it includes, in its scope clause, information about the frequency range actually covered.

- *CISPR standards allow for a comprehensive and complete assessment of the radio frequency interference potential for products covered in their scopes*

Each CISPR standard contains a complete set of measuring methods and associated limits which, in their combination, establish the essential EMC requirements. These requirements allow for a comprehensive and complete assessment of the radio frequency interference potential of products in the scope of the respective CISPR standard, during compliance measurements at standardised test sites. For certain types of products such measurements can also be performed at the place of operation of the respective product.

Note: Generic emission standards include also in some cases conducted emission requirements below 9kHz. Such requirements are under the sole responsibility of TC 77, SC 77A in particular and are introduced by CISPR without change or comment.

3 Technical and non-technical requirements in CISPR and IEC generic emission standards

- *CISPR standards contain at least one well defined and unambiguous and appropriate set of EMC requirements for products in their scopes*

CISPR product and IEC generic emission standards contain at least one complete set of appropriate technical emission limits and measurement methods, compliance with which by a given type of product will result in operation and use of this product in its intended environment without causing significant numbers of radio frequency interference cases.

- *CISPR standards can also contain more than one set of EMC requirements for products in their scopes*

CISPR standards which contain more than one set of appropriate technical requirements also contain information about classes or categories of products to which the respective set of requirements applies.

- *CISPR standards which contain more than one set of EMC requirements for a class or category of products in their scopes also contain non-technical requirements for use of the related EMC requirements.*

If, for one class or category of products, more than one set of technical requirements exists, then further non-technical requirements are specified in the respective CISPR standard that establish preconditions to be observed when taking advantage of the relevant set of requirements. Such non-technical requirements form a normative part of the given CISPR standard.

Examples of these non-technical requirements may comprise, but are not restricted to, obligations of the manufacturer to inform the customer in the manual accompanying the product about special conditions for connection to the LV AC mains grid, particular installation practices or additional mitigation measures which may have to be applied at installation level in order to avoid radio interference.

4 Evolution of EMC limits and measurement methods in CISPR standards

- *Established EMC requirements - Basis of standards development*

CISPR owns a well approved and established set of methods of measurement and associated sets of emission limits which form, in their combination of method and limit, essential EMC requirements to be reflected in CISPR and IEC generic emission standards. These requirements are the basis for the development of new or amendment of existing methods of measurement and/or adapting the associated limits to the new or modified method. They have been established decades of years ago and practice proved that adherence of products to these requirements provides for satisfactory protection of radio reception in the electromagnetic environment. Furthermore industry indicated that newly emerging modern technology could meet these limits.

- *Alternative methods of measurement in CISPR standards - Equivalence of alternative methods in respect of established EMC requirements*

When alternative methods of measurement together with the associated limits are introduced in the normative part of CISPR standards, they should give the same global result (pass or fail) with an acceptable degree of confidence. Methods of measurement and associated limits for which this evidence does not exist must not be incorporated into CISPR standards or IEC generic emission standards. For verification purposes, CISPR has provided publications with guidelines to evaluate alternative test methods (i.e. publication CISPR 16-4-5) and to determine suitable protection limits for the frequency range not yet covered in CISPR or IEC generic emission standards. For the latter see also CISPR 16-4-4.

- *Evolution of established EMC requirements of CISPR and collaboration with the ITU*

Long experience has proved the effectiveness of the established EMC requirements to protect the radio frequency spectrum . However, if modification of these requirements is intended, then the following principles shall apply:

Any intention to relax the established EMC requirements of CISPR shall be communicated to the ITU in such a form and manner that the ITU is in the position to investigate the impact on radio services and applications. In practice this means that the established CISPR coupling and disturbance model(s) shall be used in order to assess the impact of proposed modifications in the methods of measurement and associated limits on the radio interference potential observed from fixed installations where products complying with the amended provisions are intended to be operated. If such investigation reveals relaxations in the established EMC requirements, then the ITU shall be informed.

- *Technology neutrality*

Sources of disturbances in the radio frequency range

CISPR adheres, in developing its standards, to the principle of strict technology neutrality. The EMC requirements in CISPR standards apply to all types of products in the scope of the given CISPR standard, independently of the evolving technology actually used. Through maintenance of existing CISPR standards, CISPR continues to replace any technology-specific EMC requirements by technology-neutral ones, with the intention of extending the stability periods for upcoming new editions of CISPR standards.

Victims of disturbances emitted in the radio frequency range

The same principle applies in respect of possible victims of interference. For the latter, CISPR uses as reference the protection needs of analogue modulated broadcast radio services and radio appliances, in the range up to 1 GHz. Lacking such services in the range above 1 GHz, CISPR uses as a reference mass-applied radio services such as mobile cellular telephone services and cordless telephone appliances, wireless LAN appliances etc.