Draft change request for similar entries in IEV 7## parts – sixth set (en)

In the following table 10 concepts are presented which appear in IEV part 702, but have similar entries in other IEV 700 parts except for part 701. This is the sixth set of a series.

The proposals are based on Decision 6/2015 b) of the TC1 plenary meeting in Prague. Meanwhile, in many cases the provision of 6/2015 b) “retain all entries” was not followed to the letter although it has been followed in intent.

In such cases, a single entry comprising elements of the similar entries is proposed and in the duplicate entries the definition is replaced by a hyperlink to the proposed entry.

Those parts of the text which are proposed to be retained (and thus are included in the proposal) are marked in yellow.

The French versions of the entries are presented in a separate document for purposes of practicality.

VT60050 members are invited to comment on each proposal individually.

term	entry in 702	similar entries	proposal
phase delay (phase delay (of a wave); phase propagation time (of a wave) in 705-02-11)	**702-02-16** the time taken by a moving point, associated with a sinusoidal travelling wave and defined by a fixed phase of a field quantity, to travel between two given points in a propagation medium	**705-02-11** the time duration between the instants that a wavefront of a sinusoidal travelling wave, defined by a specified phase, passes two given points in space	**702-02-16** **phase delay** **phase propagation time** time taken by a moving point, associated with a sinusoidal travelling wave (IEV 705-01-38) and defined by a fixed phase of a field quantity (IEV 102-05-17), to travel between two given points in a propagation medium Remarks: 1) The specific use "(of a wave)" / "(d'une onde)" has been omitted for alignment with the entries for “group delay” and “envelope delay”. **705-02-11**: replace the definition by "See IEV 702-02-16"

group delay (group delay; group propagation time in 705-02-22)	**702-02-20** the propagation time between two points of a signal which may be ideally represented by two superimposed sinusoidal waves of equal amplitude and slightly different frequencies approaching a common limiting value NOTE: In a homogeneous medium, or on a uniform line, the group delay is equal to the derivative with respect to the angular frequency of the difference, at the same time, of the phases, at the two points, of the common limit wave.	**705-02-22** the propagation time between two points on a ray path defined in terms of the group velocity vector by the line integral taken along the ray path: $\oint \frac{1}{v_g} \mathrm{d}s$ where v_g is the algebraic value of the projection of the group velocity vector onto the tangent to the ray path, and ds is the corresponding curve element NOTE: In practice, if the medium is not too absorbent, nor too anisotropic, nor too dispersive, the group delay is equal to the propagation time of the signal element used to define the group velocity. **726-05-16** tThe rate of change with angular frequency of the total phase shift of a given component of an electromagnetic wave at a given frequency between two points in a transmission system. NOTE: Slightly different terms and definitions may be given in Chapter 705.	**702-02-20** **group delay** **group propagation time** propagation time of a signal between two points defined in terms of the group velocity (IEV 103-10-15) by the line integral (IEV 102-05-03) taken along the propagation path: $\oint \frac{1}{v_g} \mathrm{d}s$ where v_g is the algebraic value of the projection of the group velocity onto the tangent to the path, and ds is the corresponding curve element Note 1 to entry: In a homogeneous (IEV 113-02-01) medium, or on a uniform transmission line, the group delay is equal to the derivative with respect to the angular frequency (IEV 103-07-03) of the difference, at the same time, of the phases (IEV 103-07-04), at the two points, of the signal used to define the group velocity. Note 2 to entry: In practice, if the medium is not too absorbent, nor too anisotropic, nor too dispersive, the group delay is equal to the propagation time of the signal used to define the group velocity. Editorial notes: 1) "may" replaced by "can" for conformity with the ISO/IEC Directives, Part 2. 2) To be user friendly, cross-references have been added. Remarks: The following changes have been made to the definition for the reasons specified: 1) "group velocity vector" / "vecteur vitesse de groupe" has been replaced by " group velocity" / "vitesse de groupe". According to IEV 113-01-32, velocity is always a vector. 2) "ray path" has been replaced by "propogation path". “Ray path” is a special case of a propagation

			path. Additionally, “propagation path” fits better to the second term. 3) "uniform line" / "ligne uniforme" has been replaced by " uniform transmission line"./ "ligne de transmission uniforme" in accordance with IEV 704-02-02. “Line” alone can also be an overhead line for heavy current. “Transmission line” is more appropriate, it is one of the concepts to be dealt with by WG100 (see IEV 131-12-86). 4) "common limit wave" / " l'onde limite commune" has been replaced by "signal used to define the group velocity" / "signal qui sert à définir la vitesse de groupe". “Signal used to define …” is more precise than the undefined “common limit wave”. 5) "signal element" / "signal élémentaire" has been replaced by "signal" / "élément de signal" in accordance with IEV 702-05-01. “Signal element” is only part of a signal. In this entry always “signal” is used for conformity. **705-02-22** and **726-05-16**: replace the definition by "See IEV 702-02-20"
envelope delay	**702-02-21** the group delay of the significant spectral components of a signal assuming that this delay is substantially the same for all these significant components NOTE: The concept of envelope delay is meaningful only if the envelope of the signal is relatively undistorted by the transmission medium.	**726-05-14** the time of propagation between two points of a wave envelope representing a signal in a transmission system NOTE 1: The envelope delay is significant only if the envelope is relatively undistorted by the transmission system. NOTE 2: The envelope delay is equal to the group delay if the latter is approximately constant for all the significant spectral components of the signal. NOTE 3: Slightly different terms and definitions may be given in Chapter 705.	**702-02-21** **envelope delay** propagation time between two points of the amplitude (IEV 702-04-54) representing a signal Note 1 to entry: The envelope delay is meaningful only if the group delay (IEV 702-02-20) of the significant spectral components (IEV 702-04-41) is substantially the same for all these components and if the signal is relatively undistorted by the transmission system (IEV 704-04-19). Editorial notes: 1) To be user friendly, cross-references have been added. 2) notes 1 and 2 in 726-05-14 have been combined into one note 3) “time of propagation” has been replaced by

			“propagation time” in accordance with IEV 702-02-20 Remarks: The following changes have been made to the definition for the reasons specified: 1) The term “wave envelope” / "enveloppe d'une onde" has been replaced by “amplitude” as defined in IEV 702-04-54. 2) "in a transmission system" / "d'un milieu de propagation" has been deleted from the definition. The definition applies for signals in general, not only for signals in transmission systems. 3) "approximately constant" has been replaced by "substantially the same" for alignment with the French. 4) The term "transmission system" has two meanings as defined in the current entry IEV 704-04-10. In accordance with C00027, reference has been given to the new entry IEV 704-04-19. In French the term "milieu de propagation" has been corrected to "système de transmission (IEV 704-04-19)". **726-05-14**: replace the definition by “See IEV 702-02-21”
quantizing (quantization (of a quantity) in 721-02-05) (quantizing; quantization in 723-10-30)	**702-04-07** a process in which the continuous range of values that a quantity may assume is divided into a number of predetermined adjacent intervals and in which any value within a given interval is represented by a single predetermined value within the interval	**704-24-01** a process in which a continuous range of values that a quantity may assume is divided into a number of predetermined adjacent intervals, and in which any value within a given interval is represented by a single predetermined value within the interval NOTE: Associated terms are “to quantize”; “quantizer”. [702-04-07] **721-02-05** a process in which a continuous range of possible values of a quantity is divided into a number of predetermined adjacent intervals and any value within a given interval is represented by a single predetermined value within the interval	**702-04-07** **quantization** **quantizing** process in which the continuous range of values that a quantity (IEV 112-01-01) can assume is divided into a number of predetermined adjacent intervals (IEV 103-01-12) and in which any value within one of these intervals is represented by a single predetermined value within the interval Editorial notes: 1) "may" replaced by "can" for conformity with the ISO/IEC Directives, Part 2. 2) To be user friendly, cross-references have been added.

		[702-04-07] **723-10-30** quantizing; quantization a process in which the continuous range of values that a quantity may assume is divided into a number of predetermined adjacent intervals and in which any value within one of these intervals is represented by a single predetermined value within the interval [702-04-07 MOD]	Maintenance action: 1) Correct the source reference in 351-41-13 "quantize, verb " as shown below: SOURCE: IEC 60050-702, 702-04-07, modified – The term and definition have been changed to describe an action rather than a process. **704-24-01, 721-02-05 and 723-10-30**: replace the definition by "See IEV 702-04-07"
cyclic time-scale cyclic time scale in 721-16-17	**702-04-12** a time-scale consisting of a periodic repetition of cycles each of which is a succession of time intervals NOTE: The individual time intervals comprising a single cycle need not all have the same duration, but, ideally, all the cycles are identical.	**704-13-02** a time-scale consisting of a periodic repetition of cycles, each of which is a succession of time intervals NOTE: The individual time intervals comprising a single cycle need not all have the same duration, but, ideally, all the cycles are identical. [702-04-12] **721-16-17** a time scale consisting of a periodic repetition of cycles each of which is a succession of time intervals NOTE: The individual time intervals comprising a single cycle need not all have the same duration, but, ideally, all the cycles are identical, any variations being constrained within specified limits. [702-04-12 MOD]	**702-04-12** **cyclic timescale** timescale (IEV 702-04-11) consisting of a periodic repetition of cycles (IEV 103-05-08) each of which is a succession of time intervals (IEV 113-01-10) Note 1 to entry: The individual time intervals comprising a single cycle need not all have the same duration (IEV 113-01-13), but, ideally, all the cycles are identical, any variations being constrained within specified limits. Editorial notes: 1) To be user friendly, cross-references have been added. 2) Spelling of “time scale” and “time-scale” replaced by “timescale”. Maintenance action: 1) In the Electropedia, a search (including in the definitions) gives: “time scale” = 13 hits “time-scale” = 18 hits “timescale” = 0 hits In the Oxford and Merriam-Webster dictionaries, this term is written without a hyphen: "timescale". Harmonize the spelling in the IEV to the form without a hyphen.. **704-13-02** and **721-16-17**: replace the definition by

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			"See IEV 702-04-12"
error control (error control; error protection synonym in 723-10-94)	**702-07-40** any technique used to reduce the incidence of errors in the recording, processing or transfer of information	**721-08-14** any method used to reduce the incidence of errors in the recording, processing or transfer of information [702-07-40] **723-10-94** techniques used to reduce the effects of errors occurring in a digital signal in recording, processing and transmission NOTE: Error control may use the techniques of error detection, error correction and error concealment either separately or in combination. [702-07-40 MOD]	**702-07-40** **error control** **error protection** reduction in the effects of errors (IEV 192-03-02) occurring in a digital signal (IEV 702-04-05) in recording, processing and transmission Note 1 to entry: Error control can use the techniques of error detection (IEV 702-07-41), error correction (IEV 702-07-42) and error concealment (IEV 723-10-97) either separately or in combination. Editorial notes: 1) "may" replaced by "can" for conformity with the ISO/IEC Directives, Part 2. 2) To be user friendly, cross-references have been added. Remarks: 1) "techniques used to reduce" / "méthode employée pour réduire" replaced by "reduction in" for alignment with the way in which this term is used in context. **721-08-14** and **723-10-94**: replace the definition by "See IEV 702-07-40"
error correction	**702-07-42** any technique for correcting some of the elements recognized as erroneous in a message	**721-08-20** error control with a view to correcting a significant proportion of errors, making use of either an error correcting code or an error detecting code or a loop-checking with, in the last two cases, automatic repetition of the signals recognized as being erroneous **723-10-96** method of error control making use of an appropriate code in order to correct a part of the elements recognized as erroneous in a received signal [702-07-42 MOD]	**702-07-42** **error correction** error control (IEV 702-07-40) with a view to correcting some of the errors when the signal (IEV 101-12-02) is recognized as erroneous Note 1 to entry: Error correction makes use of either an error correcting code (IEV 702-05-20) or an error detecting code (IEV 702-05-19) or a loop checking (IEV 721-08-18) with, in the last two cases, automatic repetition of the signals recognized as being erroneous. Editorial notes: 1) It is not necessary to restrict to a "significant

			proportion of errors" / "une proportion importante des erreurs"; instead the presence of errors has to be recognized. 2) To be user friendly, cross-references have been added. 3) The term "loop-checking" has been corrected to "loop checking" in accordance with (IEV 721-08-18). 4) The various methods of error correction have been transferred to a note to entry. Their presence in the definition is misleading because it gives the impression that errors could be corrected by other methods not called “error correction”. **721-08-20** and **723-10-96**: replace the definition by "See IEV 702-07-42"
intermodulation	**702-07-64** a process occurring in a non-linear device or transmission medium whereby the spectral components of the input signal or signals interact to produce new components having frequencies equal to linear combinations with integral coefficients of the frequencies of the input components NOTE: Intermodulation may result from a single non-sinusoidal input signal or from several sinusoidal or non-sinusoidal signals applied to the same or to different inputs.	**161-06-20** a process occurring in a non-linear device or transmission medium whereby the spectral components of the input signal or signals interact to produce new components having frequencies equal to linear combinations with integral coefficients of the frequencies of the input components NOTE Intermodulation may result from a single non-sinusoidal input signal or from several sinusoidal or non-sinusoidal signals applied to the same or to different inputs. [702-07-64] **713-09-08** process occurring in a non-linear device or transmission medium whereby the spectral components of the input signal or signals interact to produce new components having frequencies equal to linear combinations with integral coefficients of the frequencies of the input components NOTE: Intermodulation may result from a single non-sinusoidal input signal or from several sinusoidal or non-sinusoidal signals applied to the same or to different inputs.	**161-06-20** **intermodulation** interaction in a non-linear (IEV 131-11-19) device or transmission medium between the spectral components (IEV 702-04-41) of the input (IEV 151-15-13) signal or signals producing new spectral components having frequencies equal to linear combinations with integral coefficients of the frequencies of the input spectral components Note 1 to entry: Intermodulation can result from a single non-sinusoidal input signal or from several sinusoidal or non-sinusoidal input signals applied to the same or to different inputs. Editorial notes: 1) “process” has been replaced by “interaction” and "to produce" by "producing" for alignment with the French text. 2) "new components" / "nouvelles composantes" has been corrected to "new spectral components" / "nouvelles composantes spectrales"; the term "component" alone has a different meaning. 3) To be user friendly, cross-references have been added.

		[702-07-64]	**702-07-64** and **713-09-08**: replace the definition by "See IEV 161-06-20"
crossmodulation cross-modulation in 713-10-64	**702-08-35** modulation of the carrier of a wanted signal by an unwanted signal produced by interaction of the signals in non-linear equipment, electrical networks or transmission media	**161-06-19** modulation of the carrier of a wanted signal by an unwanted signal, produced by interaction of the signals in non-linear equipment, electrical networks or transmission media [702-08-35] **713-10-64** modulation of the carrier of a wanted signal by an unwanted signal produced by interaction of the signals in non-linear equipment or transmission media [161-06-19 MOD, 702-08-35 MOD]	**161-06-19** **cross-modulation** modulation (IEV 701-03-08) of the carrier (IEV 702-06-03) of a wanted signal (IEV 702-08-01) by an unwanted signal (IEV 161-01-03) produced by interaction of the signals in non-linear (IEV 131-11-19) apparatus, electric networks (IEV 151-12-02) or transmission media (IEV 704-02-01) Editorial notes: 1). "cross-modulation", with a hyphen, is the more usual spelling and so is the version retained. 2) "electrical networks" has been corrected to "electric networks" in accordance with IEV 151-12-02. 3) “equipment” has been replaced by “apparatus” for alignment with the French text. 4) To be user friendly, cross-references have been added Maintenance actions: 1) Harmonize the spelling of "cross-modulation" in the IEV to the form with a hyphen. **702-08-35** and **713-10-64**: replace the definition by "See IEV 161-06-19"
electromagnetic compatibility; EMC (abbreviation)	**702-08-66** the ability of an equipment or system to function satisfactorily in its electromagnetic environment without introducing intolerable electromagnetic disturbances to anything in that environment	**161-01-07** the ability of an equipment or system to function satisfactorily in its electromagnetic environment without introducing intolerable electromagnetic disturbances to anything in that environment [702-08-66]	**161-01-07** **electromagnetic compatibility** **EMC** ability of an apparatus or system (IEV 151-11-27) to function satisfactorily in its electromagnetic environment (IEV 161-01-01) without introducing intolerable electromagnetic disturbances (IEV 161-01-05) to anything in that environment Editorial notes:

			1) The term attribute "(abbreviation)" has been deleted in accordance with the IEC Supplement, 2015, SK.3.1.3.5.7. 2) “equipment” has been replaced by “apparatus” in accordance with the French text. 3) To be user friendly, cross-references have been added. **702-08-66**: replace the definition by "See IEV 161-01-07"