Template for comments and secretariat observations

Date:	Document:

1	2	(3)	4	5	(6)	(7)
MB[1]	Clause No./ Subclause No./ Annex (e.g. 3.1)	Paragraph/ Figure/Table/ Note (e.g. Table 1)	Type of com-ment[2]	Comment (justification for change) by the MB	Proposed change by the MB	Resolution
JP01	Foreword		ed	This foreword seems to be non-conforming to the standard template of forewords for JTC1 standards. The standard template begins with the paragraph like "ISO (...) and IEC (...) form the specialized system ... ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.". In contrast to this, this foreword speaks about ISO only. There are slight differences also in the third paragraph: "technical committees" -> "the joint technical committee", "member body" -> "national body".		Will use the current ISO/IEC template.
JP02	2		ed	ISO/IEC 10646-1:2000, Information technology --- Universal Multiple-Octet Coded Character Set (UCS) --- Part 1: Architecture and Basic Multilingual Plane There are newer versions of ISO/IEC 10646-1. The latest version should be cited.		Will cite newer document.
JP03	3.33		ed	<<EBNF>> name of a non-terminal symbol [ISO/IEC 14977] The notation "<<EBNF>>" is used without any explanations.		Will explain the << >> notation, which is ISO 10241 presentation on terminology.
JP04	3.50		ed	NOTE In this context, the term "sign" is used in its terminological sense (e.g., a symbol) and not in its mathematical sense (e.g., positive of negative).	"positive of negative" -> "positive or negative".	Will make change.
JP05	3.60		ed	value U such that, for all values s in the value space in a datatype which is bounded below, s <= U	"bounded below" -> "bounded above	Will make change.
JP06	5.1		ed	( ) left parentheses, right parenthesis start/end group symbols	"parentheses" -> "parenthesis".	Will make change.
JP07	5.2		ed	A reference to a non-terminal symbol syntactic object consists of the non-terminal-symbol in fix width italic	"fix width" -> "fixed width"	Will make change.

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				courier, e.g. type-declaration.		
JP08	6.2			There are two Notes in this section. They should be numbered.		Will make change.
JP09	6.2			NOTE A numeric datatype, which includes characterizing operations such as IsEqual and InOrder, may include The operation "IsEqual" has been renamed to "Equal".		Will make change.
JP10	6.3.5			Let M be the mathematical datatype and C be the corresponding computational datatype, and let P be We think that the term "mathematical datatype" is not appropriate here. It is nothing other than the type of real or complex numbers, so should be rephrased more explicitly.		Will attempt rewording.
JP11	6.3.5			NOTE The computational model described above allows a mathematically dense datatype to be mapped to a datatype with fixed-length representations and onetheless evince intuitively acceptable mathematical behavior. The form of the verb "evince" seems incorrect. Should it be changed to "to evince", or "evinces"?		Will reword.
JP12	6.6			NOTE 5 IsEqual is always a characterizing operation on datatypes with the equality property. The operation "IsEqual" has been renamed to "Equal". According to 6.3.1, every value space has a notion of equality. Is there any type without the equality property?		Will make change. All data has the equality property.
JP13	6.8.8			conceptually semi-structured, have either the component datatypes or the access method specified, but	The word "have" should be changed to "having" which is used in the first and the third bullets.	Will reword.
JP14	6.9			That is, a normative datatype does not have a specific value space, but it may specify properties that any	The double-quote character at the end of the	Will make change.

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				conforming value space must have. Similarly, a normative datatype may specify operations that must be supported by a conforming datatype, without that set of operations itself being sufficient to characterize any one datatype. For example, the normative datatype Any can be satisfied by any GPD datatype, with any value space. The only requirement is that Equal is defined on the value space." We cannot understand these two paragraphs at all. They may be misplaced or some pieces of text may be missing.	second paragraph should be deleted.	
JP15	6.9			This International Standard contains many provisions. Some provisions apply to datatypes in general, e.g., a datatype consists of a value space, properties, and characterizing operations --- a "statement" provision. Some provisions apply to specific datatypes, e.g., a mapping to the GPD integer datatype shall be a datatype that is numeric --- a "requirement" provision. We cannot understand why the terms "statement provision" and "requirement provision" are mentioned here. Their definitions are given in 3.46, 3.51 and 3.56. It would be better to remove them. Declarations may contain provisions describe via annotations (outside the scope of this International Standard).	The form of the verb "describe" seems incorrect.	Will reword.
JP16	7.1			non-quote-character = letter | digit | underscore | special | apostrophe | space ;		Will make change.

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				The order of "underscore" and "special" is not consistent with the order of their syntax definitions. The same comment also applies to 8.1.4 and 10.1.5.		
JP17	7.3.1			pseudo-letter-like = letter | digit | underscore ; The first two alternatives seem incorrect. "letter" should be changed to "letter-like" and "digit" to "digit-like". According to the current syntax, extended characters are allowed only as the first character of identifiers. This is curious. The non-terminal "digit-like" is not referred to.		Will fix.
JP18	7.6			program-statement = type-specifier | declaration | normative-datatype-definition ; "normative-datatype-definition" is not a correct non-terminal name.	It should be "normative-datatype-declaration" according to 9.4.	Will fix.
JP19	8.1.2			EXAMPLE 2 Enumerated types {short, medium, tall} and {light, medium, heavy} are distinct types of the family "enumerated", even though they have exactly the same number of elements, and the same characterizing operations: IsEqual and InOrder. Enumerated types {short, medium, tall} and {short, moderate, medium, tall} are distinct types. It is outside the scope of this International Standard whether or not the value medium is the same in both enumerated types. This whole example is misplaced. It is an example of "enumerated type" and thus should be moved to 8.1.3.	The operation "IsEqual" has been renamed to "Equal".	Will fix.
JP20	8.1.3			enumerated-value = enumerated-value-list | URI-to-value-space ;		Will add.

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				There is no syntax rule for "URI-to-value-space".		
JP21	8.1.3			these values is given by the sequence of their occurrence in the enumerated-value-list, designated the naming sequence. The phrase "designated the naming sequence" was hard to understand for us. We think that the phrase should be made more explict, such as "in the enumerated-value-list, which shall be referred to as the naming sequence of the enumerated datatype".		Will reword.
JP22	8.1.3			NOTE 2 The ordering on enumeration types imposed by programming languages is a convenience that allows programs to reference all the values via for-loops and enables the compiler to use integer encodings to simplify implementation. Properly, the Enumeration type should be chosen over the State type only when the ordering has The term "enumeration type" is not correct. It should be changed to "enumerated type" (two places).		Will fix.
JP23	8.1.4			type Latin1 = character({ iso standard 8859 1 });	The word "part" should be inserted between "8859" and "1", in order to conform to the preceding example.	Will fix.
JP24	8.1.6			the resolution is to one radix(-factor) of the specified time-unit. time-unit, and radix and The formula is misformatted. It should be "radix raised to the power (-factor)". InOrder(x, y: time(time-unit, radix, factor)): boolean is true if the point in time designated by x precedes that designated by y; else false. "InOrder" is a "less-than-or-equal-to" operation. According to this definition, it looks like a "less-than" operation.		Will fix.

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JP25	8.1.7			NonNegative(x: integer): boolean is true if x = 0 or x can be developed by one or more iterations of adding 1, "adding to what" is not mentioned. "to 0" should be inserted after "adding 1". Quotient(x, y: integer): integer, where 0 < y, is the upperbound of the set of all integers z such that The notation of operation definitions given in 8.1 does not allow the insertion of "where" condition just after the operation signature (just before "is" or "="). Probably, the definition in 8.1 should be made more precise.		Will reword.
JP26	8.1.8			value 0. The rational value denoted by the form signed-number is: Promote(signed-number), and the rational value denoted by the form signed-number/number is: The fonts of "form signed-number" and of "form signed-number/number" are not consistent. Operations: Equal, NonNegative, InOrder, Negate, Add, Multiply, Reciprocal, Promote. The order of operation names is not consistent with the order of the following operation definitions.		Will reword.
JP27	8.1.9			InOrder(x,y: scaled (r,f)): boolean = rational.InOrder(x,y) Here, x and y are values of a scaled type. Is it possible to apply operations of the rational type to them? The value space of a scaled type is a subset of the rational type, but nevertheless they are different types.		Will investigate.
JP28	8.1.9			NOTE 2 Any reasonable rounding algorithm is equally acceptable. What is required is that any rational value v which is not a value of the scaled datatype is mapped into one of the two scaled values n.r^(-f) and (n+1).r^(-f), such that in the Rational value space, n.r^(-f) < v <		Will reword.

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				$(n+1).r^{(-f)}$. We suspect that this Note is not correct. According to the definition of "Round" given in this section, rounding should be toward zero for positive values.		
JP29	8.1.10			Let . .denote the mathematical real value space and for v in ., let | v | denote the absolute value of v. Let V The real value space is denoted by a strange symbol, looking like a vertical stroke. It should be given an appropriate name, probably "R" in a special font.		Will fix.
JP30	8.1.10			for each r in . . such that | r | < epsilon, there exists at least one r' in V such that | r - r' | <= epsilon2;. The sequence "semicolon-period" is strange. The semicolon should be deleted.		Will fix.
JP31	8.1.11			for each v in C such that | v | < epsilon, there exists at least one v in V such that | v - v | _ _ _;. The formula is obviously incomplete. Three boxes appear at the end of the formula. "v-v" should be changed to "v-v'". The semicolon should be deleted.		Will fix.
JP32	8.2.2			Properties: The subtype is bounded (above, below, both) if the base datatype is so bounded or if no selectrange appears in the select-list or if all select-ranges in the select-list specify the corresponding bounds. The condition is not well-stated, and we cannot understand what is the intended condition. Probably, "or if" should be changed to "and".		Will reword.
JP33	8.2.4			maximum-size = value-expression | "*" ; minimum-size = value-expression ; The definition of "minimum-size" should be given before that of "maximum-size".		Will fix.

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				Subtypes: Any size subtype of the same base datatype, such that base-minimum-size <= subtypeminimum-size, and subtype-maximum-size <= base-maximum-size There is an inappropriate line break in this sentence. The sentence is not terminated properly. The header "Subtypes" is not mentioned in the template definitions in 8.2.		
JP34	8.2.6			NOTE The value space of a datatype is the set of values specified in the definition of the datatype. Sentinel This section contains two more Notes at the end of the section. This Note should also be given a number. IsEqual from values in the value space. Sentinel values must be The operation "IsEqual" has been renamed to "Equal".		Will fix.
JP35	8.3.3			alternative-list = alternative, { ",", alternative }, [default-alternative] ; Is this syntax definition correct? We suspect that there should be a comma just before "default-alternative". alternative = tag-value-list, [field-identifier], ":", alternative-type ; The second line of this definition should be indented appropriately. value-expression. A select-item which is a select-range specifies all values v of the tag datatype such The font of "select-item" is obviously inappropriate (too thin). if Discriminant(x) and Discrminant(y) select the same alternative, then type.Equal(Cast.type(x), Cast.type(y)),		Will fix/reword.

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				"Discrminant" -> "Discriminant".		
JP36	8.3.3			A_j = E1j x E2j x ... x Emjj, "Emjj" -> "Emj". p: I1 x I2 x ... x In _ ST x (A0 | A1 | A2 | ... | AN). The formula is incomplete. There is a box symbol in the formula. datatype many contain many distinct values which differ in their "many" -> "may" (first occurrence).		Will fix/reword.
JP37	8.3.3			the tag datatype is the unspecified state datatype and each alternative, including "normal", has the form: Shouldn't this "normal" be changed to "*normal"?		Will fix.
JP38	8.4.1			Operations: Equal, FieldSelect, Aggregate. There is no "Aggregate" operation for this type. It should be replaced by "FieldReplace". FieldReplace.field-identifier(x: record (field-list), y: field-type): record (field-list) is that value z: record(field-list) such that FieldSelect.field-identifier(z) = y, and for all other fields f in record(fieldlist), FieldSelect.f(x) = FieldSelect.f(z) The first line should not be indented.		Will fix.
JP39	8.4.2			Syntax rules should be aligned properly at the position of equality symbols. attribute = { override-qualifier }, attribute-identifier, ":", attribute-type ; Is this syntax rule intended? It allows repeated appearances of the word "override", which makes no sense, we think.		Will fix.

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				Description: .		
				Syntax:		
				override-qualifier = "override" ;		
				These three lines should be deleted.		
				Components: override may be used with a class attribute definition.		
				Components: A list of attributes, each of which associates a attribute-identifier with a single		
				There are two "Components" header in this section.		
				"a attribute" -> "an attribute".		
				of attributes in the attribute-list shall be distinct. The keyword override shall not		
				The font of "override" is not correct.		
				following the keyword override shall be the identifier for a attribute of the base datatype for the explicit		
				The font of "override" is not correct.		
				A class-value denotes a value of a class datatype. When the class-value is a attribute-value-list, each attribute-identifier in the attribute-list of the class datatype		
				to which the class-value belongs shall occur exactly once in the attribute-value-list, each attribute-identifier in the classvalue shall be one of the attribute-identifiers in the attribute-list of the class-type, and the corresponding independent-value shall designate a value of the corresponding attribute datatype. When the class-value is a value-list, the number of independent-values in the value-list shall be equal to the number of attributes in the attribute-list of the class datatype to which the value belongs, each independent-value shall be associated		

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				with the attribute in the corresponding position, and each independent-value shall designate a value of the attribute datatype of the associated attribute.		
				This whole paragraph is misleading and thus should be deleted. It assumes the existence of a syntax for class-values. In the current version, it is clear that there is no syntax for class-values.		
				Operations: Equal, AttributeSelect.		
				"AttributeReplace" should be added to the list.		
				Equal(x, y: class (attribute-list)): boolean If there exists an Equal method procedure for the class, then is Equal(x,y). Otherwise if there are no method procedures then is true if for every attribute-identifier f of the class datatype,		
				The term "method procedure" is not defined anywhere.		
				attribute-type.Equal(AttributeSelect.f(x), AttributeSelect.f(y)), else false		
				The font of "false" is not correct.		
				There is one AttributeSelect and one AttributeReplace operation for each attribute in the class datatype that is not a attribute procedure, of the forms:		
				"a attribute" -> "an attribute".		
				There is one AttributeSelect and one AttributeReplace operation for each attribute in the class datatype that is a attribute procedure, of the forms:		
				"a attribute" -> "an attribute".		
				notion of "subtype" or "subclass". A subtype of a Class datatype can have additional attributes (attributes); a subtype of a		
				We cannot understand why the word "attributes" is		

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				repeated in parentheses. The second one "(attributes)" should be deleted. NOTE 3 An operation is represented by a attribute whose attribute-type "a attribute" -> "an attribute".		
JP40	8.4.3			datatype (true, false), i.e., if s is a value of datatype set of (E), then s: E . B, and for any value e in the value The mathematical definition of "s" is incomplete. Probably, the dot should be replaced by an arrow. The set "B" (set of Boolean values) is used here without a definition. We think such universal names should be defined somewhere in the document. Or(Not(IsIn(v,x)), IsIn(v,y)) = true, else false; i.e. true if and only if every member of x is a member of y; This line should be indented. Setof(y: element-type): set of (element-type) is the function s such that s(y) = true and for all values v /= y, s(v) = false; i.e. the set consisting of the single value y; There is an unnecessary line break. Select(x: set of (element-type)): element-type, where Not(Equal(x, Empty())), is some one value from the A right parenthesis should be inserted at the end of the formula "Not(Equal(x, Empty())".		Will fix.
JP41	8.4.4			(E), then b: E . Z, and for any value e in the value space of E, b(e) = The mathematical definition of "b" is incomplete. Probably, the dot should be replaced by an arrow.		Will fix, will add words.

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				The set "Z" (set of integer values) is used here without a definition. We think such universal names should be defined somewhere in the document.		
JP42	8.4.5			Head(x: sequence of (element-type)): element-type, where Not(IsEmpty(x)), is the first value in the sequence x; The font of "where" is not correct.		Will fix.
JP43	8.4.6			Operations: Equal, Select, Replace. The order of operation names is not consistent with the order of the following operation definitions. Replace(x: array (index1, ..., indexn) of (element-type), y1: index1, ..., yn: indexn, z: element-type): array (index1, ..., indexn) of (element-type) is that value w of the array datatype such that w: (y1, ..., yn) -> z, and for all values p of the index product space except (y1, ..., yn), w: p -> x(p); i.e. Replace yields the function which associates z with the value (y1, ..., yn) and is otherwise identical to x. There are unnecessary line breaks. type arrayB = array (1..m) of (array [1..n] of (integer)); The syntax of the inner array definition is not correct. Brackets should be replaced by parentheses. Let A be a value of datatype array(array (index1, ..., indexn) of (element-type). For each index datatype "array(array" should be changed to "array". Ord(x1: index1, ..., xn: indexn): ordinal is the ordinal value corresponding to the integer value: The definition lacks the precise formula for the result value.		Will fix/reword.

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JP44	8.6.1.2			value: the provision is associated the instantiation of a datatype8		Will fix.
				The word "with" should be inserted after "associated".		
				access: the provision is associated the access methods of a datatype		
				The word "with" should be inserted after "associated".		
JP45	8.6.1.3			scope-kind-value = "identifier" | "allidentifier" ; "recursiveidentifier" | "size" | "allsize" | "recursivesize" ;		Will fix.
				The semicolon at the end of the second line should be changed to a vertical stroke.		
				recursiveidentier: the provision is associated the all identifiers in all aggregate types, recursively		
				"recursiveidentier" -> "recursiveidentifier".		
				The word "with" should be inserted after "associated".		
				recursivesize: the provision is associated the sizing parameters in all aggregate types, recursively		
				The word "with" should be inserted after "associated".		
JP46	8.6.1.4			subset-kind-value = "defined" | "undefined" | "*" | selecting-expr | value-expr ;		Will fix.
				There is no syntax definition for "selecting-expr" nor for "value-expr".		
JP47	8.6.1.5			value-spec-value = "nil" |		Will fix.

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ISO electronic balloting commenting template/version 2001-10

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				range-expr | selecting-expr | value-expr ; There is no syntax definition for "range-expr", "selecting-expr", nor "value-expr". -- selecting-expr: a selecting expression that limits the selection -- value-expr: a value expression that describes a pattern for the selection The fonts of "selecting-expr" and "value-expr" are not consistent.		
JP48	8.6.1.6			-- range-expr: a range of values -- selecting-expr: a selecting expression that limits the range -- value-expr: a value expression that specifies the value The fonts of "range-expr", "selecting-expr" and "value-expr" are not consistent.		Will fix.
JP49	8.6.4.1			Description: Specifies that the components of record or class type are ordered, unordered, or unspecified. This description is misplaced. It is not an explanation of usage triggers.		Will fix/reword.
JP50	9.1			to rename an existing datatype or name an existing datatype which has a complex syntax, or A "to" should be inserted before "name". type-declaration = "type", type-identifier, ["(" formal-type-parameter-list, ")"], "=", ["new"], type-definition | normative-datatype-definition ;		Will fix/reword.

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				The indentation of the last line should be corrected. "normative-datatype-definition" is not a correct non-terminal name. It should be "normative-datatype-declaration" according to 9.4.		
JP51	9.1.2			The type-definition defines the value space of the new datatype (family) --- there is a one-to-one correspondence between values of the new datatype and values of the datatype described by the typedefinition. In many cases, "one-to-one" is written as "1-to-1". Please be consistent. characterizing operations is possible. For example, acceleration and velocity may have identical computational value spaces and operations (datatype real) but quite different physical ones. We do not understand what is meant by "ones" at the end of the sentence.		Will make consistent, will reword.
JP52	9.3			parameter-type = type-specifier ; parameter-name = identifier ; Syntax rules should be aligned properly at the position of equality symbols. The position of equality symbol in these rules are not the same as that of "parameter".		Will fix.
JP53	9.5.1			URI-or-type-identifier = URI | identifier ; There is no syntax definition for "URI". tag-type = type-specifier ; discriminant = value-expression ; These two syntax rules are not referred to. In 8.3.1, there are references to "tag-type" and "discriminant", but 8.3.1		Will fix/reword.

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				has its own definitions for these non-terminals.		
				Components: The source value identifies a resource that contains a program-text. Each declaration in that		
				The term "sources value" appears without any explanation.		
JP54	9.5.2			macro-definition = "macro", identifier, "(" param-list ")" , "{", text, "}";		Will fix/reword.
				There is no syntax rule for "param-list".		
JP55	10.1.5			type editcharacter = character({iso standard 646}) selecting ('0'..'9', '.', ',', '+', '-', '$', '#', '*'),		Will investigate.
				The type "character" is unordered. Is it possible to write a range notation "0".."9" for this type?		
JP56	10.1.9			type private(length: NaturalNumber) = new array (1..length) of (bit)		Will fix.
				"NaturalNumber" -> "naturalnumber".		
JP57	10.1.10			provisions of ISO 7350:1991 whose registration-number is the value of registry-index. The form of the "ISO 7350" should be changed to "ISO/IEC 7350" according to Annex A.		Will fix.
				provisions of ISO 10036:1991 whose registration-number is the value of registry-index. The form of the		
				"ISO 10036" should be changed to "ISO/IEC 10036" according to Annex A.		
				NOTE 2 ObjectIdentifier is treated as a primitive type by many applications, but the mechanism of definition of its value		
				"ObjectIdentifier" -> "Objectidentifier".		
JP58	10.2.1			Components: element shall any datatype.		Will fix/reword.

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				A verb should be inserted after "shall".		
JP59	10.2.3			if And(IsPresent(x), IsPresent(y)), then Binary-op(Cast.base(x), Cast.base(y)), else undefined. There is an unnecessary line break in this definition.		Will fix.
JP60	11.1			datatype generator to the mapped parametric datatypes. In this way, property (i) above may be satisfied for internal generated datatypes. What is meant by "(i)"?		Will investigate.
JP61	12			12 Annex A (informative): Character-set standards In this document, annexes have two section numbers. We think that only the alphabetical form "Annex A, B, ..." suffices. codes defined by the repertoire is outside of the scope of this International Standard . "outside of" -> "outside". ISO/IEC 4873:1991 Information technology --- ISO 8-bit code for information interchange --- Structure and rules for implementation There is an unnecessary line break in the name of the standard. The same error is found in many standard references in the succeeding text. ISO 6861: --- Information and documentation --- Cyrillic alphabet coded character sets for historic Slavonic languages and European non-Slavonic languages written in a Cyrillic		Will fix/reword.

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				script, for bibliographic information interchange The number of the standard is incomplete. The published year should be given after the colon. The same error is found in many standard references in the succeeding text. The following are International Standards for character-set registration. Character sets registered under the This line should not be indented.		
JP62	13			13 Annex B: (informative) Recommendation placement of annotations The title seems to be grammatically incorrect.		Will fix/reword.
JP63	14.3			$v = S . M . RE$ The formula is not correct. "R" should be raised to the power "E". M is the mantissa, either zero or a value of the datatype scaled(radix, precision) range(radix $^$ - precision, 1) excluding(1). The operator "$^$" is undefined. denorm, with the requirement that denorm = false implies d = R-1 and denorm = true implies d = Rprecision. The symbol "d" is defined here, but where is it used? The power "precision" should not be placed in a separate line. $v = S x M x R-P$ The formula is not correct". "R" should be raised to the power "-E". Why do you use a symbol for multiplication different from that in 14.3?		Will fix/reword.

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JP64	14.5			Tag is a type-attribute which specifies whether and how the tag-value of a value of a value of a choice One of two "a value of"s should be deleted.		Will fix.

JP65	15			<< 15.1.9 >>
				
				has the value -maxint.r(-f) and maxrf has the value maxint.r(-f). A scaled datatype with the corresponding
				
				The formula is not correct. "r" should be raised to the power "(-f)" (two places).
				
				minimum and maximum values (and any sub-type thereof) is mapped to the Pascaltype integer, with each
				
				"Pascaltype" -> "Pascal type".
				
				scaled value N.r(-f) being mapped into the Pascal integer value N. In order for the characterizing operations
				
				The formula is not correct. "r" should be raised to the power "(-f)".
				
				<< 15.1.10 >>
				
				The LI datatypes real range(rmin..rmax) and real(radix, precision) range(rmin..rmax) map to the Pascal type
				
				"LI datatypes" is an old terminology.
				
				<< 15.1.11 >>
				
				procedure Squareroot(x: complex; var t: complex);
				
				The name of the function should be "SquareRoot" ("R" capitalized) which is the name defined in 8.1.11.
				
				<< 15.2.7 >>
				
				function IsEmpty(var s: sequenceoftype): Boolean; begin IsEmpty := eof(s) end;
				
				"reset(s);" should be inserted as the first statement of this
						Unsure of resolution: should we move these annexes to an N document?

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				function. If you insist that the file is always reset after an operation, it is not consistent with the following definition: procedure Head(var s: sequenceoftype; var t: mapped-type); begin reset(s); read(s, t); reset(s); end; "reset(s);" as the first statement of this function would be unnecessary. continue := mapped-typeEqual(s^, t^); "mapped-typeEqual" -> "mapped-type.Equal". Because a Pascal file-type, however, cannot be the component-type of another file-type, LI datatypes of the "LI datatypes" is an old terminology. << 15.3.4 >> sequence datatype implementation in D.2.7, and certain size-subtypes are mapped to specific Pascal types in E.4. The section reference "E.4" is not correct. "E" is the section for MUMPS, and Pascal types are not given there. << 15.4.2 >> The LI datatype modulo(modulus) maps to the Pascal subrange type 0..modulus-1, according to the mapping "LI datatype" is an old terminology. << 15.4.4 >> type bitstringsizek = packed array [1..k] of Boolean; In the printed text, there is no space between "type" and "bitstringsizek". << 15.4.5 >>		

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				type charstringsizek = packed array [1..k] of char;		
				In the printed text, there is no space between "type" and "charstringsizek".		
				<< 15.4.6 >>		
				datatypes (see E.1.9). The scalarMultiply operation is mapped to		
				The section reference "E.1.9" is not correct. "E" is the section for MUMPS, and Pascal types are not given there.		
				<< 15.4.8 >>		
				type octetstringsizek = packed array [1..k] of octet;		
				In the printed text, there is no space between "type" and "octetstringsizek".		
				<< 15.5.4 >>		
				An GPD datatype of the form optional(T) can only be mapped to Pascal if the type T can be mapped to		
				"An GPD" -> "A GPD".		
				NOTE Alternatively, optional(T) can be mapped to ^mappedT, where mappedT is the mapping of LI datatype T into		
				"LI datatype" is an old terminology.		
				<< 15.6.2 >>		
				An GPD datatype declaration which declares a single datatype (no parameters) can be mapped to Pascal as		
				"An GPD" -> "A GPD".		
				An GPD datatype declaration which declares a family of datatypes, using one or more parameters, cannot, in		

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				"An GPD" -> "A GPD". << 15.6.3 >> An GPD generator declaration cannot, in general, be mapped into Pascal. In many cases, however, each "An GPD" -> "A GPD".		
JP66	16			NOTE An alternative is to map date and time values to a character string in $H[OROLOG] format, which has the form What is meant by "$H[OROLOG]"?		Unsure of resolution: should we move these annexes to an N document?
JP67	17			<< 17.1 >> the interface specification. For example, Sequence is a native datatype in GPDSP, and Set is a native The term "GPDSP" is not defined. << 17.4 >> Tree, or the GPDSP-characteristic indefinite-list datatype. The term "GPDSP" is not defined. << 17.5.5 >> datatypes as a choice datatype one of whose alternatives is the true datatype of the column and and the other One of two consecutive "and"s should be deleted. modelled as having choice datatypes. "Void" was originally called "Null", but has been renamed to avoid The word "modelled" should be spelled as "modeled" to be consistent with other uses of this word in this document. There is consensus that Undefined is not a datatype.		Unsure of resolution: should we move these annexes to an N document?

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				Undefined is a part of the behaviour of entities which		
				The word "behaviour" should be spelled as "behavior" to be consistent with other uses of this word in the document.		
				<< 17.5.7 >>		
				applications. "Pure" pointer datatypes can be modelled as: pointer to (T) excluding (null).		
				The word "modelled" should be spelled as "modeled" to be consistent with other uses of this word in this document.		
				<< 17.5.11 >>		
				Array-types whose values have different numbers of elements (Ada[1:?n]). Such types are designated		
				Ada syntax does not allow the use of a question-mark.		
				<< 17.7.1 >>		
				Issue 35. Should NaturalNumber or Unsigned be GPD datatypes?		
				It would be better to change "NaturalNumber" to "Naturalnumber".		
				<< 17.7.4 >>		
				Issue 2. Should Character-string types be ordered?		
				This issue number is not correct. It is not ascending, and the same number has already been used.		
				<< 17.7.5 >>		
				mathematical operations. Thus Tensor is outside the scope of the LI datatypes.		
				"LI datatypes" is an old terminology.		

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Template for comments and secretariat observations

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				state, position, etc., attributes, goes beyond the scope of this standard. The datatype, its attributes and The position of "attributes" looks strange. << 17.8 >> Issue 41. How much of the concept "mapping onto the LI datatypes" should be standardized? "LI datatypes" is an old terminology. values of all "parameters" of the LI datatypes, and a discussion of the distinction between "logical "LI datatypes" is an old terminology. constructions which equate to various LI datatypes might be quite complicated. "LI datatypes" is an old terminology.		
JP68				<< typographical error throughout the draft >> A hyphen is often inserted in a word which should normally have no hyphens in it. These hyphens should be deleted. 8.2, "sub-type" relationship between the value spaces of the base datatype and the sub-type. 8.2, "sub-type" informal name for the sub-type generator, and the subtype generator is 8.3.3, Note 5, "out-side" distinctions relate to the methods of moving values between program elements, which are out-side the scope		Will fix.

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				of this		
				8.4.1, Note 3, "sub-type"		
				record datatype) is not a sub-type of the base record datatype: none of		
				8.5, "there-by"		
				datatype or datatype generator there-by defined. The actual-type-parameters, if any, shall correspond in		
				12, "in-terpreted"		
				purposes. Whether "character(repertoire)" is in-terpreted as requiring the characters to be represented by the		
				12, "order-ings"		
				values used in a particular implementation of the language. Such order-ings have no semantics with respect		
				13.3, "procedure-at-tributes"		
				procedure-at-tributes should be distinguishable from type- or component- attributes by their text.		
				15.1.9, "sub-type"		
				minimum and maximum values (and any sub-type thereof) is mapped to the Pascaltype integer, with each		
				15.2.1, "other-wise"		
				and is not other-wise required. Each select-item in the select-list which is a single value is mapped to the		
				15.2.3, "Pas-cal"		
				Terminations other than normal are not supported by Pascal, and no procedure datatype involving them can be mapped into Pas-cal.		

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				15.4.4, "effi-cient"		
				although more effi-cient structures for bitstring can be developed.		
				15.5.2, "in-tended"		
				implementation choices, depending on the in-tended searching		
				strategies, i.e. the true "characterizing operations" of the type.		
				16, "re-verse-inward-mapping"		
				otherwise stated the re-verse-inward-mapping is the inverse of the inward-mapping, using the necessary		
				16, "con-versions"		
				operations, requires the programmer to perform the appropriate		
				con-versions. The GPD datatypes involved		
				17.1, "pro-vides"		
				procedure calling, pro-vides the procedure call model, the requirements		
				for interface specifications and the		
				17.2, "map-ping"		
				Such a map-ping violates the notion of semantic equivalence of the		
				datatypes.		
				17.3, "mathe-matical"		
				consensus that mathe-matical datatypes should be defined by appeal to		

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				standard mathematical references.		
				17.5.3, "pro-grams"		
				these semantics, is the most frequently occurring datatype in COBOL		
				pro-grams, and also appears in other		
				17.5.6, "ma-chines"		
				"Excluding" subtypes, the same GPD datatype as implemented by two		
				ma-chines might actually have nonisomorphic		
				17.5.7, "sup-ported"		
				which the handle refers is intentionally not sup-ported, while		
				accessing the object to which a pointer refers is a		
				17.5.8, "There-fore"		
				position. There-fore, the ordering of fields in a Record is not a		
				property of the conceptual datatype itself.		
				17.5.11, "sub-scripting"		
				passed is either a caller-defined sub-scripting function or a set of		
				parameters by which the called subprogram		
				17.7.4, "de-fine"		
				Some programming languages make the character-string primitive in order		
				to de-fine useful operations that		

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JP69				<< typographical error throughout the draft >> The formatting of the header "Syntax:" is often inappropriate. For example, in 7.5.2, it should be separated from the preceding text. In 7.6, it becomes a part of the preceding line, and should of course be separated. Many sections do not have this header, for example in 8, 8.1, ... We like to have a consistent usage of the header.		Will fix.
JP70				<< typographical error throughout the draft >> The character "s" at the end of a noun, meaning plural, should be in the normal font, even when the noun itself is a technical term and is typeset in some special font. 8.1, "parameter-names" The operation-name is an identifier unique only within the datatype being defined. The parameter-names 9.1, "actual-type-parameters" actual-type-parameters which must appear in a type-reference which references this type-identifier. 9.1.2, "formal-type-parameters" parameter-list is present, then the type-identifier is declared to identify a family of datatypes parameterized by the formal-type-parameters. 9.3, "parameter-names" The parameter-names of the parameters in a termination-parameter-list shall be distinct. No 10.1.4, "bit-literals" there are no bit-literals in the bitstring-literal, then the value denoted is the sequence of length zero.		Will fix.

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JP71				<< typographical error throughout the draft >> In syntax rules, syntactic items should be separated by a comma, but this comma is often missing. 8.1.4, after "," repertoire-list = repertoire-identifier, { "," repertoire-identifier } ; 8.4.4, after "independent-value" value-list = "(", independent-value { ",", independent-value }, ")" ; 8.6, after "actual-parameter" actual-parameter-list = actual-parameter { ",", actual-parameter } ; 9.2, after "value" and after "=" value-declaration = "value" value-identifier, ":", type-specifier, "=" independent-value ; 9.5.1, after "including", after "(", after "select-list" import-type = "import", URI-or-type-identifier, { "including" "(" select-list ")" | 9.5.1, after "excluding", after "(", after "select-list" "excluding" "(" select-list ")" } ; 9.5.2, after "(", after "param-list" macro-definition = "macro", identifier, "(" param-list ")" , "{", text, "}"; 10.1.5, after " " character-name = identifier, { " " identifier } ;		Will fix.

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				10.1.10, after "identifier", after "(", after "numberform" nameandnumberform = identifier "(" numberform ")" ; 10.1.10, after "registry-name" collection-identifier = registry-name registry-index ;		
NL01			ge	Sometimes multiple notes in a (sub)section are numbered (as in 6.4) sometimes not (as in 6.2).	Unify throughout the document.	Will make consistent.
NL02	Introduction	First bullet	ed	the text seems to exclude the use of 11404 in programming language context	Suggestion: "... this I.S. is also used for formal ..." and "(see for instance ISO/IEC 11179-3)"	Will reword.
NL03	Introduction	Fourth bullet	ed	Usage of "thus" (twice)	Replace "thus" by "so that" (or "thus it is possible" by "thereby making it possible")	Will reword.
NL04	Introduction	Fifth bullet	ed	The usage of "(1)", "#1" and then (in the last sentence) "(1)" again is confusing		Will reword.
NL05	3		ed	To have two definitions for parametric value in 3.41 and 3.42 is strange	Merge the definitions into one definition with a clear indication when either of them is to be used.	Will investigate for consistency with ISO 10241 and ISO 1087-1.
NL06	3.45		te	primitive internal datatype is defined in relationship with programming languages, and used in the mapping section; are mappings limited to programming languages? If not, the definition should be changed		Will investigate.
NL07	3.50		ed	Awkward use of the notion "sign"; why not use the original "image"?		Will investigate concerning harmonization of other ISO standards (1087-1, 5127, etc.)
NL08	3.53		ed	It might be useful to consider to add a note similar to the last note of 6.2 to the definition of sentinel value in 3.53.		Will reword.
NL09	3.60		ed	Error in defin ition.	"bounded below" must be replaced by "bounded above".	Will fix.
NL10	4.4		te	This section uses "GDP program text conformance" in		Will reword.

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				the header, "program" in the 1st sentence and "program text" in the Note. Is this about "Conformance of a GDP program text", or "Text conformance of a GDP program"? Should the 1st sentence be "A GDP program text that conforms ..."?		
NL11	4.4		te	This clause requires that a conforming GDP program text implements ALL of the requirements in clauses 5-10, whereas direct conformance (4.1) 'only' requires a subset to be conforming (no conformance requirements for unused features).	Some more explanation, in the form of a Note is required	Will investigate and reword.
NL12	5.2		ed	Mixing the various fonts gives sometimes a messy look	Consider to increase the fontsize of the special fonts	Will try to improve.
NL13	6.1		te	LID had "In this I.S., characterizing operations are purely informative and have no normative impact."; this sentence and the subsequent note are removed. There used to be much confusion about the normativeness of the characterizing operations, and hence the original sentence.	Suggest to reinsert the old text	Will reword and add text.
NL14	6.1	para 2	ed	Last sentence is grammatically incorrect.	Reformulate: "refers to datatypes" or "is used to mean datatypes"	Will reword.
NL15	6.2	2nd para after 1st note	ed	Readability.	Replace (twice) "(elements of a value space" by "(those elements of the value space ..."	Will reword.
NL16	6.2	last note	ed	Readability.	Reformulate last sentence: "For those sentinel values the mentioned characterizing operations are not defined."	Will reword.
NL17	6.3		te	The mentioned properties only apply to regular values from the value space; this should be mentioned (example: adding the sentinel value NaN to the real values does not make the real value space unordered).		Will reword.
NL18	6.4	Note 1	ed	Seems to be a left over of earlier text; it has now no	Either add context or remove the note.	Will fix.

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				relation with its context.		
NL19	6.6	Note 1	te	Why is "designations" better that "symbols"? If it is better, should "designations" not be added to the terminology section?		Designations is the proper term in ISO 1087-1 and ISO 704 (TC37 standards)
NL20	Clause 6.8.4		te	Where is this used? Only in 8.6.3? The name "identifier uniqueness" is dangerous: 8.1 has "The operation-name is an identifier unique only within the datatype being defined"; this is probably not what is being specified in 6.8.4.		Will investigate.
NL21	Clause 6.8.9		ed	Wording	Replace "to have values in a valid value" by "to have a valid value"	Will reword.
NL22	6.9	1st and 2nd para	ed	Old text?	Remove	Will fix.
NL23	7.3.1		te	Explain the notion "ISO/IEC-10176-extended letter"		Will add words.
NL24	8.1.2, 8.1.3		te	The Operations section lists the Equal operation, defined on part of the value space: not on the value-space-source part of the value space. Does this make these latter values sentinel values? If so, should this be mentioned? Also applies to clause 8.1.3.		Will add words.
NL25	8.1.2		ed	Example 2 belongs in clause 8.1.3	Move example.	Will fix.
NL26	8.1.3		ed	In the operations section: enum-value-list is the wrong non-terminal name (5 times).	Replace "enumerated(enum-value-list)" by "enumerated(enumerated-value-list)" (5 times)	Will fix.
NL27	8.1.10	Parametric values	te	The value of "factor" must be greater than 0.	Reword to read: "… and factor shall have an integer value greater than 0".	Will fix.
NL28	8.1.10		ed?	Wrong symbol for R		Will fix.
NL29	8.1.11	Parametric values	te	The value of "factor" must be greater than 0.	Reword to read: "… and factor shall have an integer value greater than 0".	Will fix.
NL30	8.2.6		te	"plus" and "sentinel" should go together.	Change the syntax for the extended-type to:	Will fix.

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					extended-type = base, ["plus", "sentinel"]	
NL31	8.4.1 and others		ed	Forward reference.	add forward reference for the provision statement	Will fix.
NL32	8.4.2		ed	Layout muddled.	Alignment of sytax rules, empty Description section, 2 Components sections	Will fix.
NL33	8.4.2		ed	Check the text in the Operations section.	Indentation and use of empty lines can be improved; spelling should be checked ("of the forms" in stead of "of the form")	Will fix.
NL34	8.4.2		ed	Text Operations section, equal operator.	Reformulate "... no method procedures then is true if for ...".	Will fix.
NL35	8.4.3		ed	Wrong symbol	values: the "->" symbol	Will fix.
NL36	9.4		ed	Explanation needed on the use of the concept normative-datatype-defin ition.		Will add words.
NL37	9.5.1		ed	What is "the source value"?		Will fix/reword.
NL38	9.5.2		te	There is no usage or mentioning in the document of the macro concept		Will investigate.
UK01	p 70		ed	The line 'Let A be a value of datatype array(array (index1, ..., indexn) of (element-type)' has an unbalanced left parenthesis.		Will fix.
UK02	passim		ed	There are a few word processor-induced errors. Page 133 has 'pro-gram' (reminiscent of Chick's Own, for those old enough to remember it). There are things like 'single valued' (p 18), 'digit- string' (p 38), 'null valued' (p 133). It would be easier to search for them from scratch than for me to give a full list.		Will fix.
UK03	p 71		ed	Fortran standard reference should be ISO/IEC 1539-1:2004 (but see below).		Will fix.
UK04	p 70-71	Note 6	ed	is confusing rather than enlightening. It semi-formally defines a sample mapping of array indices to value	Note 6 lines 2-3: replace 'There are many such functions' by 'There are various possible such	Will fix.

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				location (as one of 'many such' mappings), gives a bit of unnatural Fortran code and then weakly says that 'The Fortran standard ..., however, requires a mapping function which gives a different sequence representation from that given in Note 6'. A reader who does not know about Fortran array indexing will be left wondering what the point of the example was; so will a reader who does know about it, since the point could be made more succinctly in far fewer words. However, if the point is to be made at length, I would offer these edits.	functions, some of which are explicitly defined in the standards for particular languages". line 14: replace 'The Fortran declaration:' by 'In Fortran the standard specifies that multidimensional arrays are stored with the left-most varying most rapidly. Thus in the following declaration:' line 16: before 'declares' insert 'which' line 17+: Insert new text 'In order that the elements of a single row be contiguous for possible use in a language which uses the mapping above, it is necessary to write the Fortran code in a counter-intuitive manner.'. line 18: Replace 'And the' by 'The' lines 26-27: Delete: 'The Fortran standard ... Note 6." If the reference to the Fortran standard is required, add it at the edit above.	
UK05	p 133			'also appears in other standard languages, such as PL/I' This is the only mention of PL/I (latest standard dated 1979) in the document. Is it a good exemplar?		Do we need these annexes?
UK06	5.1	(page number 10 of the document, PDF page 22) heading of Table 1		The document includes ISO/IEC 10646-1:2000 in its Normative References, and here refers to ISO/IEC 10646, and possibly elsewhere. The most recent edition of ISO/IEC 10646 was published in 2003 as a single-part standard.	The references should be checked for continued applicability and updated as appropriate.	Will check references.
UK07	6.5.1			This states that the concept of equality is defined for all datatypes. This may be true within the the scope of this standard, but in ISO/IEC 9075, Database language SQL, there are some datatypes, specifically user-defined types, for which equality is not defined. The same may be true in some object-oriented languages. This situation may merit the inclusion of an informative Note.		Will investigate.
UK08	6.3			The definition of Bound in 3 defines the bound to be a member of the datatype. Whilst this is likely to be the		Will investigate.

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				case for types with finite cardinality, it may not necessarily be true for types with non-finite cardinality. Consider the datatype consisting the reciprocals of positive integers. The set is bounded below by zero, which is not a member of the set.		
UK09	6.4	unnumbered Note		Is this correct? Consider the rational numbers. They can be mapped onto the integers in at least one well-known way, and given any n, I can find mappings such that each integer of length not greater than n digits is associated with a rational number, and still have rational numbers left over.		Will investigate.
UK10	Passim			The document contains informative references to several standard programming languages (including FORTRAN, C, Ada, Pascal) and to other standards (e.g.PHIGS). It would be useful if the full references to these standards could be collected into an informative annex, similar in style to the Normative References clause.		Do we need these annexes?

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