Replaces

ISO/IEC JTC 1/SC 22
Programming Languages

Document Type:	**Summary of Voting/Table of Replies**
Document Title:	**Summary of Voting on FDIS Ballot for ISO/IEC 11404, Information technology – General Purpose Datatypes (GPD)**
Document Source:	**ITTF**
Project Number:	
Document Status:	**This document is circulated to SC 22 members for information. As per the results of this ballot, the FDIS has been approved. This text will go forward to publication. WG 11 is instructed to review the comments received, and consider them in a future revision of this standard.**
Action ID:	**FYI**
Due Date:	
No. of Pages:	**18**

English Title:	**Information technology -- General-Purpose Datatypes (GPD)**	
French Title:	**Technologies de l'information -- Types de données**	

Document reference:	**ISO/IEC FDIS 11404**	Committee:	**ISO/IEC/JTC 1/SC 22**
Start date:	2007-08-22	End date:	2007-10-22
Opened by ISO/CS on:	2007-08-16 09:54	Closed by ISO/CS on:	2007-10-24 04:30

		Voting stage:	Approval
Status:	Closed	Version:	1
Vote in parallel with:			
Role:	ContentOwner	Organization:	ANSI
Note:			

Result of voting

P-Members voting: 16 in favour out of 17 = 94.11% (requirement >= 66.66%)

(P-Members having abstained are not counted in this vote.)

Member bodies voting: 1 negative votes out of 22 = 4.54% (requirement <= 25%)

Approved

📁 **Ballot Content** ▾

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Type	Country ▲	Member	Participation	Voted	Functions	Modified
✎	Australia	SA	P Member	Abstention	▾	2007-08-21 06:58
✎	Azerbaijan	AZSTAND	P Member		▾	2007-10-24 04:30
✎	Belgium	NBN	P Member		▾	2007-10-24 04:30
✎	Canada	SCC	P Member	Abstention	▾	2007-10-01 15:13
✎	China	SAC	P Member	Approval	▾	2007-10-15 05:17
✎	Côte-d'Ivoire	CODINORM	P Member		▾	2007-10-24 04:30
✎	Cyprus	CYS	P Member		▾	2007-10-24 04:30
✎	Czech Republic	CNI	P Member	Approval	▾	2007-10-22 13:26
✎	Denmark	DS	P Member	Approval	▾	2007-09-28 12:30

	Country	Body	Membership	Vote		Date
	Ecuador	INEN	P Member	Abstention	▾	2007-10-23 21:48
	Egypt	EOS	O Member	Approval	▾	2007-10-21 08:51
	Finland	SFS	P Member	Abstention	▾	2007-08-22 13:14
	France	AFNOR	P Member	Abstention	▾	2007-10-19 09:44
	Germany	DIN	P Member	Approval	▾	2007-10-17 16:00
	India	BIS	P Member	Approval	▾	2007-10-15 06:49
	Indonesia	BSN	O Member	Approval	▾	2007-10-22 09:09
	Iran, Islamic Republic of	ISIRI	P Member	Approval	▾	2007-10-23 13:46
	Ireland	NSAI	P Member	Approval	▾	2007-09-26 13:49
	Italy	UNI	P Member	Approval	▾	2007-10-17 14:12
	Jamaica	JBS	P Member	Abstention	▾	2007-10-23 22:52
	Japan	JISC	P Member	Disapproval	▾	2007-10-18 12:20
	Kazakhstan	KAZMEMST	P Member	Approval	▾	2007-10-18 14:55
	Kenya	KEBS	P Member	Approval	▾	2007-10-01 13:38
	Korea, Republic of	KATS	P Member	Approval	▾	2007-10-19 07:09
	Luxembourg	SEE	O Member	Approval	▾	2007-10-16 14:23
	Malaysia	DSM	P Member	Abstention	▾	2007-08-16 11:18
	Malta	MSA	P Member	Abstention	▾	2007-09-28 08:48
	Netherlands	NEN	P Member	Approval	▾	2007-10-11 10:06
	New Zealand	SNZ	P Member	Abstention	▾	2007-10-09 04:46
	Nigeria	SON	P Member		▾	2007-10-24 04:30
	Norway	SN	P Member	Approval	▾	2007-10-09 16:30
	Pakistan	PSQCA	P Member		▾	2007-10-24 04:30
	Romania	ASRO	O Member	Approval	▾	2007-09-28 08:37
	Russian Federation	GOST R	O Member	Abstention	▾	2007-10-12 10:02
	Saudi Arabia	SASO	P Member	Abstention	▾	2007-10-03 14:02
	Singapore	SPRING SG	P Member	Abstention	▾	2007-08-17 10:26
	Slovenia	SIST	P Member	Abstention	▾	2007-10-19 14:34
	South Africa	SABS	P Member	Abstention	▾	2007-08-17 15:32
	Spain	AENOR	P Member	Abstention	▾	2007-10-22 13:49
	Switzerland	SNV	P Member	Abstention	▾	2007-10-15 08:21
	Trinidad and Tobago	TTBS	P Member	Approval	▾	2007-10-22 22:22
	Turkey	TSE	P Member		▾	2007-10-24 04:30

	Country	Body	Membership	Vote		Date
	Ukraine	DSSU	O Member	Approval	▾	2007-10-02 10:04
	United Kingdom	BSI	P Member	Approval	▾	2007-10-15 15:37
	Uruguay	UNIT	P Member	Abstention	▾	2007-10-16 18:34
	USA	ANSI	Secretariat	Approval	▾	2007-10-09 15:03
	Venezuela	FONDONORMA	P Member		▾	2007-10-24 04:30

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	Secretariat observations on each comment submitted
ES				Abstention due to the absence of national position		
JP01	2		ge	In this section, only a limited number of standards are referred to. However, in the main text of this standard, many other standards are referred to. We found the references to the following documents. ISO/IEC Guide 2 ISO/IEC 11179 ISO/IEC 13886 ISO/IEC 10176 ISO/IEC 11578 ISO/IEC 8859-1 ISO/IEC 10967 ISO/IEC 1539-1 ISO/IEC 2375 ISO/IEC 7350 ISO/IEC 10036 We agree that most references to these documents are in the informative parts of this standard, but at least the following three are referred to in the normative part, and should be considered as a part of the provision of this standard. ISO/IEC 2375 ISO/IEC 7350 ISO/IEC 10036 These standards should be referred to in this section.		
JP02	6.6	Note 5	te	> NOTE 5 Equal is always a characterizing operation on >datatypes with the equality property. According to 6.3.1, every value space has a notion of equality. We suggest to change "on datatypes with the equality property" to "on every datatype". If there are		

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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**	**Secretariat observations** on each comment submitted
				some types not having equality, it should be explicitly mentioned.		
JP03	7		ge	> This International Standard defines a datatype > specification language, in order to formalize the > identification and declaration of datatypes conforming to > this International Standard. The language is a subset of > the Interface Definition Notation defined in ISO/IEC > 13886:1996, Information technology. > LanguageIndependent Procedure Calling (LIPC).5) > This clause defines the basic syntactic objects used in > that language. We understand that the convention in this standard is not to mention the published year of standards referred to. If this is true, ":1996" for 13886 should be deleted.		
JP04	7.5	Syntax:	ed	The position of the header "Syntax:" is not correct.		
JP05	7.5.1	Syntax:	ed	The position of the header "Syntax:" is not correct.		
JP06	7.5.2	Syntax:	ed	There should be an empty line before the "Syntax:" header.		
JP07	7.6	Syntax:	ed	The position of the header "Syntax:" is not correct.		
JP08	8		ed	There should be a "Syntax:" header before the syntax rule.		
JP09	8.1		ed	There should be a "Syntax:" header before the syntax rule.		
JP10	8.1.1	Values:	ed	In the description of "Values:", each of "true" and "false" appears twice. Their fonts are different in these two appearances.		
JP11	8.1.2	Syntax:	te	> list-source-reference = identifier | > "", URI-text, "" ;		

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				> URI-text = '"', URI defined by IETF RFC2396, '"' ; According to this syntax, a list-source-reference must have two double-quotes before the URI, and also two double-quotes after the URI. This is quite strange. We suspect that this syntax does not reflect the intention of the author.		
JP1 3	8.1.2	Syntax:	te	> When the list-source is an objectidentifier-value, > it shall denote a valid value of the objectidentifier > datatype, as defined in 10.1.10. In either case, the list- > source value shall identify a document that explicitly > defines a set of code values and their denotations. The term "objectidentifier-value" does not appear in the syntax rule. Such a sentence should be written using syntax terms, but this sentence does not conform to this style.		
JP1 4	8.1.3	Operations:	ed	> Equal(x, y: enumerated(enumerated-value-list)): > boolean is true if x and y designate the same value in > the enum-value-list, and false otherwise. The term "enum-value-list" is a typo. It should be changed to "enumerated-value-list". Moreover, the font of this term is not correct.		
JP1 5	8.1.3	Note 2	ed	> NOTE 2 The ordering on enumerated 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 Enumerated type > should be chosen over the State type only when the > ordering has semantic value. However, it may be > necessary to declare the datatype of an object to be an > Enumerated GPD when the purpose is to ensure the > correct interpretation of an integer-based > implementation.		

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				The term "Enumerated type" should be changed to "enumerated type" (do not capitalize the first letter, two places).		
JP16	8.1.4	Example	te	> 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.		
JP17	8.1.7	Operations:	ed	> 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".		
JP18	8.1.7	Operations:	te	> InOrder(x, y: integer): boolean > = NonNegative(Add(x, Negate(y))). This definition is not correct. The meaning of the function "InOrder" is "less than or equal to", so the right hand side of this formula should be "NonNegative(Add(Negate(x), y))".		
JP19	8.1.8	Operations:	ge	> Operations: Equal, NonNegative, InOrder, Add, Negate, > Multiply, Reciprocal, Promote. The order of operation names is not consistent with the order of the following operation definitions. "Promote" should come before "Add".		
JP20	8.1.8	Operations:	te	> InOrder(x, y: integer): Boolean > = NonNegative(Add(x, Negate(y))). This definition is not correct. The meaning of the function "InOrder" is "less than or equal to", so the right hand side of this formula should be "NonNegative(Add(Negate(x), y))".		
JP21	8.1.9	Note 2	te	> 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		

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				> 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) ∨ (n+1).r^(-f). We suspect that this Note is not correct. According to the definition of "Round" given in this section, "Round" always returns a value less than or equal to the argument (maximum of such values). The choice among n.r^(-f) and (n+1).r^(-f) should not be arbitrary.		
JP22	8.1.10	Value- syntax:	ed	> A real-literal denotes a value of a real datatype. The > integer-literal is interpreted as a decimal integer value, > and the scale-factor, if present, is interpreted as number > raised to the power signed-number, where number and > signed-number are expressed as decimal integers. If > the scale-factor is not present, the value is > that denoted by integer-literal. If the scale-factor is > present, the value denoted is the rational value > Multiply(integer-literal, scale-factor). In this description, the font of the word "number" is not correct (two places).		
JP20	8.2		ed	There should be a "Syntax:" header before the syntax rule.		
JP23	8.2		ed	> relationship between the value spaces of the base > datatype and the sub-type. The hyphen in the word "sub-type" should be deleted.		
JP24	8.2		ed	> informal name for the sub-type generator, and the > subtype generator is The hyphen in the word "sub-type" should be deleted.		
JP25	8.2.4	Components :	ge	> Components: base shall designate a generated > datatype resulting from the sequence, set, bag, or table > generator, or from a new datatype generator whose > value space is constructed by such a generator (see > 9.1.3). minimum-size shall have an integer value		

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				> greater than or equal to zero, and maximum-size, if it is > a value-expression, shall have an integer value such > that minimum-size = maximum-size. If maximum-size is > omitted, the maximum size is taken to be equal to > the minimum-size, and if maximum-size is "*", the > maximum size is taken to be unlimited. minimum-size > and maximum-size shall not be formal-parametric- > values, except in some occurrences in declarations > (see 9.1). We cannot understand why "zero" is used instead of "0".		

JP2 6	8.2.4	Subtypes:	te	> Subtypes: Any size subtype of the same base datatype, > such that base-minimum-size = subtype-minimum-size, > and subtype-maximum-size = base-maximum-size.
				
				The template definition in 8.2 lists only the following items.
				
				  Description:
				  Syntax:
				  Components:
				  Values:
				  Properties:
				
				It does not say anything on "Subtypes:". Nonetheless, "Subtypes:"s appear here and there in these sections.
				
				"Subtypes:" should also be listed and be given its definition in 8.2.		

JP2 7	8.2.6	NOTE 1	ge	> NOTE 1 The value space of a datatype is the set of > values specified in the definition of the datatype. > Sentinel values are values that can occur wherever > values of the value space can occur; they can be > distinguished by Equal from values in the value space. > Sentinel values must be specified explicitly even for a > datatype that is defined axiomatically. For example, it > follows that {short, medium, tall} and {short, medium,		

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				> tall; sentinels = Unknown, Unspecified} > are two distinct datatypes with the same value space. We cannot understand the semicolon syntax in "{short, medium, tall; sentinels = Unknown, Unspecified}". We understand that there are no syntax definitions in this standard giving such a syntax.		
JP28	8.3		ed	There should be a "Syntax:" header before the syntax rule.		
JP29	8.3.1	Operations: Equal(...)	ed	> where type is the alternative datatype of the selected > alternative and type.Equal is the Equal operation on the > datatype type, This is the explanation of the function "Equal". The font of the word "type" at the end of this sentence is not correct.		
JP30	8.3.3	Values:	ge	> A_j = E_{1 j} x E_{2 j} x ... x E_{m j}, We understand that the number of terms may be different for each of the termination-lists, thus the number of terms "m" depends on "j". Since "m" is not a stand-alone constant, it should be changed to "m_j" ("m" suffixed by "j"). The last term should have two-level suffix.		
JP31	8.4		ed	There should be a "Syntax:" header before the syntax rule.		
JP32	8.4.1,	Note 3	ed	> record datatype) is not a sub-type of the base record > datatype: none of The hyphen in the word "sub-type" should be deleted.		
JP33	8.4.2	Operations:	te	> Equal(x, y: class (attribute-list)): boolean If there exists > an Equal procedure for the class, then is Equal(x,y). > Otherwise if there are no procedure definitions then is > true if for every attribute-identifier f of the class > datatype, attribute-type.Equal(AttributeSelect.f(x), > AttributeSelect.f(y)), else false (where attribute-		

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				> type.Equal is the equality relationship on the attribute > datatype corresponding to f). Otherwise is > indeterminate. This definition distinguishes classes having procedure definitions from those not having them. However, it is not clear what is the meaning of "there are no procedure definitions". According to the syntax rules, a class type can have attributes but not procedure definitions. We wonder that if there are attributes having procedure types, it is said that there are procedure definitions. However, if this is the case, we like to ask a few more questions. Why do you handle procedure types differently from other types? Procedure types have equality operations, so it would be unnecessary to handle procedure types differently.		
JP3 4	Operations:	8.4.2	ed	> There is one AttributeSelect and one AttributeReplace > operation for each attribute in the class datatype that is > an attribute procedure, of the forms: In this section, there are two sentences beginning with "There is one AttributeSelect ...". This is the second one. The functions given after this sentence are "AttributeFunctionInvoke" and "AttributeFunctionOverride". "AttributeSelect" and "AttributeReplace" seem to be typos.		
JP3 5	8.4.2	Operations:	te	> AttributeFunctionInvoke.attribute-identifier(x: class > (attribute-list)): attribute-type(parameter-list) is the value > of the attribute function of class x whose attribute- > identifier is attribute-identifier. Here, the term "attribute function" appears, but this term never appeared in the preceding part of this standard. Is it different from "attribute procedure"?		
JP3 6	8.4.3	Values:	ed	> Values: every set of distinct values from the value > space of the element datatype, including the set of no		

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				> values, called the empty-set. A value of a set datatype > can be modeled as a mathematical function whose > domain is the value space of the element datatype and > whose range is the value space of the boolean datatype > (true, false), i.e., if s is a value of datatype set of (E), > then s: E->B, where B is the set of Boolean values true > and false, and for any value e in the value space of E, > s(e) = true means e "is a member of" the set-value s, > and s(e) = false means e "is not a member of" the set- > value s. The value-space of the set datatype then > comprises all functions s which are distinct (different at > some value e of the element datatype). The font of the word "B" in "where B is the set of ..." is not correct.		
JP3 7	8.4.4	Values:	te	> Values: all finite collections of instances of values from > the element datatype, including the empty collection. > A value of a bag datatype can be modeled as a > mathematical function whose domain is the value > space of the element datatype and whose range is the > non-negative integers, i.e., if b is a value of datatype > bag of (E), then b: E-Z, where Z is the set of integers, > and for any value e in the value space of E, b(e) = 0 > means e "does not occur in" the bag-value b, and b(e) = > n, where n is a positive integer, means e "occurs n > times in" the bag-value b. The value-space of the bag > datatype then comprises all functions b which are > distinct. The direction of the arrow between "E" and "Z" is not correct. Since the function "b" is used in the form "b(e)", its domain is "E" and its range is "Z".		
JP3 8	8.4.4	Operations: delete(...)	te	> i.e. the collection formed by deleting one instance of the > value y, if any, from the collection e; The term "collection" is too vague in this context. It should be changed to "bag".		

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JP39	8.4.6	Note 6	te	> n n > 1+ Sigma Mapi(xi) (Pi sizej+1) > i=1 j=1 This expression seems incorrect. In order to compute the ordinal value of a set of index values, the lower bound of the Pi operation should not be "1", but "i+1" or something of that nature.		
JP40	8.4.6	Note 6	te	> SCREEN(COLUMN, ROW) = S > is equivalent to the characterizing operation: > Replace(screen, column, row, S) We suspect that this equivalence does not hold. The former operation includes the assignment to an array element, while the latter produces a fresh array. The element in the original array is not changed.		
JP41	8.5		ed	There should be a "Syntax:" header before the syntax rules.		
JP42	8.5		te	> The type-declaration identifies the type-identifier in the > type-reference with a single datatype, a family of > datatypes, or a datatype generator. If the type-identifier > designates a single datatype, then the type-reference > refers to that datatype. If the type-identifier designates > a datatype family, then the type-reference refers to that > member of the family whose value space is identified > by the type-definition after substitution of each actual- > type-parameter value for all occurrences of the > corresponding formal-parametric-value. If the type- > identifier designates a datatype generator, then the > type-reference designates the datatype resulting from > application of the datatype generator to the actual > parametric datatypes, that is, the datatype whose value > space is identified by the type-definition after > substitution of each actual-type-parameter datatype for		

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				> all occurrences of the corresponding formal-parametric- > type. In all cases, the defined datatype has the values, > properties and characterizing operations defined, > explicitly or implicitly, by the type-declaration. The last word "type-declaration" seems inappropriate here. This term does not appear in any syntax rules in this section. We think that it should be changed to "the type-declaration of the type-identifier" or something like that.		
JP4 3	8.6		ed	There should be a "Syntax:" header before the syntax rules.		
JP4 4	8.6.1.5	Syntax:	te	> value-spec-value = "nil" | > range-expr | > "(", select-list, ")" | > value-expression ; "range-expr" is an undefined notion in this standard. There is no syntax definition for "range-expr".		
JP4 5	8.6.4.1	Description:	ge	> 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.		
JP4 6	9		ed	There should be a "Syntax:" header before the syntax rule.		
JP4 7	9.2	Syntax:	ed	The position of the header "Syntax:" is not correct.		
JP4 8	9.3		ed	There should be a "Syntax:" header before the syntax rules.		
JP4 9	10.2.2	NOTE	te	> NOTE Tree is an aggregate datatype which is formally > an aggregate (sequence) of tree_members. > Conceptually, tree is an aggregate datatype whose > values are aggregates of leaf values. In either case, > it is proper to consider Tree a homogeneous aggregate.		

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NOTE   Columns 1, 2, 4, 5 are compulsory.

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				In this standard, an "aggregate type" is not a concrete type, and does not have its own syntax. The notation "aggregate (sequence) of ..." is not appropriate.		
JP50	B.3		ed	> procedure-at-tributes should be distinguishable from > type- or component- attributes by their text. The hyphen in the word "at-tributes" should be deleted. The space between "component-" and "attributes" should be deleted.		
JP51	C.3		ed	> scaled(radix, precision) range(radix- precision, 1) > excluding(1). The space between "-" and "precision" should be deleted.		
JP52	C.3		ge	> This representation can be characterized by five > parameters: radix and precision, from above; emin and > emax, with the requirement: emin = E = emax; and > denorm, with the requirement that denorm = false > implies d = R-1 and denorm = true implies > d = R-precision. The symbol "d" is defined here, but where is it used?		
JP53	C.4		ed	> v = S x M x R-P Why do you use a symbol for multiplication different from that in C.3?		
JP54			ed	typographical error throughout the standard >> In syntax rules, syntactic items should be separated by a comma,but this comma is often missing. Insert a comma at the following places. 8.1.4, Syntax: after "," > repertoire-list = repertoire-identifier,		

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				> { "," 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 "parameter-list" > macro-definition = "macro", identifier, "(" parameter-list ")" , > "{", text, "}"; 10.1.5, after " " > character-name = identifier, { " " identifier } ;		

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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 ;		
JP5 5			ed	typographical error throughout the standard Even if a term "xxx" is printed in a font different from usual one,its plural form "xxxs" should not be solely printed in that font. The last letter "s" should be printed in the usual font. This convention can be observed, for example, in the paragraph beginning with "When a termination-list is present, ..." in 8.3.3. The terms "parameter-types" and "parameters" are printed in this mixed-font style. However, this convention is not strictly enforced throughout the standard. For example, the last word of the first paragraph of 9.1.2, "formal-type-parameters" is printed in a single special font. We like to have a uniform usage of fonts.		

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