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JP	5.1.6	Paragraph 1	ed	The phrase "string grammars" is not clear. What is the string grammar other than numeric string grammar?		
JP	5.1.6	Paragraph 5	ed	The <i>DecimalDigit</i> production uses " <b>one of</b> " which is not defined yet.	Move the description of " <b>one of</b> " above the production.	
JP	5.1.6	Paragraph 10	ed	Some usages of "but not" are confusing, in which phrases following "but not" appear nonterminals while they are neither terminals nor non-terminals. For instance, in Section 7.4: <i>MultiLineNotAsteriskChar</i> :: <i>SourceCharacter</i> <b>but not</b> <i>asterisk</i> * " <i>asterisk</i> " appears to be nonterminal here.	Describe the explanation of the notation.	
JP	6	Paragraph 1	ed	"UAX #15: Unicode Normalization Forms" defines Normalization Form C (NFC). (See <u>http://unicode.org/reports/tr15/</u> ) The specification refers to it using the different name "Normalised Form C".	Use "Normalization Form C" for clarification instead of the word "Normalised Form C".	
JP	6	Paragraph 1	ed	There is no "Syntax" heading before the <i>SourceCharacter</i> production.	Add "Syntax" heading.	
JP	6	SourceCharac ter	te	The treatment of control characters has some ambiguities and implementation incompatibilities. In fact, current implementations do not uniquely treat control characters in <i>SourceCharacter</i> , so has incompatibility problems. JSON definition excludes from U+0000 to U+001F only as control characters. However, we believe that it should exclude more control characters. Moreover, control characters are assumed to be excluded in the followings: <i>PatternCharacter</i> <i>IdentityEscape</i> <i>ClassAtomNoDash</i>	Define SourceCharacter to initially exclude control characters, and add them when necessary. SourceCharacter :: any Unicode code unit except U+0000 through U+001F but include WhiteSpace and LineTerminator	
JP	6	Paragraph 3	ed	It says "any characters (code unit) may also be expressed	It is good to note that a supplementary character	

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				as a Unicode escape sequence consisting of six characters, namely \u plus four hexadecimal", but supplementary characters cannot be represented by a Unicode escape sequence.	can be represented by a surrogate pair, such as \uxxxx\uxxxx.	
JP	7.6	Syntax	ed	The following five productions don't have colons: UnicodeLetter UnicodeCombiningMark UnicodeDigit UnicodeConnectorPunctuation UnicodeEscapeSequence	Add colons appropriately.	
JP	7.6	Syntax	ed	The production for UnicodeEscapeSequence defined in 7.6 is not listed in Annex A.		
JP	7.8.3	Syntax	te	For the production "DecimalIntegerLiteral :: NonZeroDigit DecimalDigitsopt", only the semantics for "the MV of DecimalIntegerLiteral :: NonZeroDigit DecimalDigits" (without opt) is given.	Define the semantics for "the MV of DecimalIntegerLiteral :: NonZeroDigit".	
JP	7.8.3 9.3.1	Syntax	ed	The following nonterminals are multiply defined in 7.8.3 and 9.3.1: DecimalDigit DecimalDigits ExponentPart ExponentIndicator SignedInteger HexIntegerLiteral HexDigit They are identical except that 7.8.3 uses double colon (::) and 9.3.1 uses triple colon (:::).	They should be shared.	
JP	7.8.4	Semantics	te	No semantics is defined for "the SV of DoubleStringCharacters :: LineContinuation" and "the SV of SingleEscapeCharacter :: LineContinuation". Defining a rule in NOTE is not acceptable.	Define them.	

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JP	7.8.5	Syntax	ed	The production rule of <i>RegularExpressionBackslashSequence</i> is different between 7.8.5 and Annex A. The production ends with <i>RegularExpressionNonTerminator</i> in 7.8.5, but <i>NonTerminator</i> in Annex A.	NonTerminator should be RegularExpressionNonTerminator in Annex A.	
JP	7.8.5	Syntax	ed	Most production rules don't use the [empty] notation. Those which use [empty] notation should be rewritten with using opt for uniformity throughout the specification.	For example, the productions using [empty] in 7.8.5 can be written as follows: RegularExpressionLiteral :: / RegularExpressionBody / RegularExpressionFlagsopt RegularExpressionBody :: RegularExpressionChars :: RegularExpressionChars :: RegularExpressionChars RegularExpressionCharsopt RegularExpressionClass :: [ RegularExpressionClass :: RegularExpressionClass Charsopt ] RegularExpressionClassChars :: RegularExpressionClassChar RegularExpressionClassCharsopt RegularExpressionClassChar RegularExpressionClassCharsopt RegularExpressionClassChar RegularExpressionClassCharsopt RegularExpressionClassChar RegularExpressionClassCharsopt RegularExpressionFlags :: IdentifierPart RegularExpressionFlagsopt	
JP	7.9.1	Syntax	te	The rule of automatic semicolon insertion doesn't reflect the behaviours of major ECMAScript implementations well. For example, JScript, SpiderMonkey and Chrome v8 accept the following code: while(1)if(1)break ;else; But the specification doesn't permit it. <i>BreakStatement</i> is defined as follows: <i>BreakStatement</i> :		

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				<pre>break [no LineTerminator here] Identifieropt; This is the same as follows: BreakStatement: break [no LineTerminator here]; break [no LineTerminator here] Identifier; The first semicolon in the above code is a restricted token which is separated from the previous token by a LineTerminator. So a semicolon is inserted as follows: while(1) if(1) break;;else; But this causes a syntax error. Note that the inserted semicolon is parsed as a part of the break statement. So the rule "a semicolon is never inserted automatically if the semicolon would then be parsed as an empty statement" is not applicable. Note also that REPL (read eval print loop) of ECMAScript implementations such as JavaScript console doesn't accept the code. This is inconsistent. It is desirable that consideration for REPL is described.</pre>		
JP	7.9.1	Note	ed	"throw" in the production "ThrowStatement: throw [no LineTerminator here] Expression;" is in Italic.	Change the typeface of the word to fixed width font.	
JP	7.9.1	Paragraph	ed	The text after "The practical effect of these restricted productions is as follows:" should be indented or itemized.		
JP	7.9.1	Paragraph	ed	The text after "The resulting practical advice to ECMAScript programmers is:" should be indented or itemized.		
JP	8.7.1	Semantics	ed	The dot notation is used as desc.[[Value]] in the step 4 of		

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				[[Get]] internal method. But the notation is not defined before that. Note that the notation is defined for Property Descriptor in 8.10.		
JP	8.9	Paragraph 1	ed	The Completion type is defined as triples, that is, records in which each member is identified by its position. However, members of the type are retrieved by names, instead of positions, e.g. <i>s</i> .target in the last step of 12.1.	Describe that each member of the Completion type is accessed by its name and define the notation to do that.	
JP	9.3.1	Syntax	ed	There is no "Syntax" heading before the <i>StringNumericLiteral</i> production.		
JP	9.8.1	Semantics	ed	The font of "e", "+" and "-" in "lowercase character `e', followed by a plus sign `+' or minus sign `-" in step 10 should be bold face. (In step 9, "e" is in bold face correctly.)		
JP	10.2.1.1.2	Semantics	te	Step 2 uses "Assert:" notation but it is not defined.	Explain the notation somewhere else.	
JP	10.2.2.3	Paragraph	ed	Misspelling: " NewObjectEnvironmentis" in "operation NewObjectEnvironmentis called"	"NewObjectEnvironment is"	
JP	11.1.4	Syntax	ed	The font of the comma "," in the production for <i>ArrayLiteral</i> is different from the comma in <i>ElementList</i> and <i>Elision</i> .		
JP	11.1.5	Syntax	ed	The spacing is inconsistent in the production for <i>PropertyAssignment.</i> The spacing between ")" and "{" is different between "get" and "set". The spacing around "(" in "set" is different between 11.1.5 and Annex A. The spacing around ")" in "set" is different between 11.1.5 and Annex A.		
JP	11.1.5	Semantics	ed	The font of the comma "," in the production for "PropertyNameAndValueList : PropertyNameAndValueList , PropertyAssignment" is different from the comma in the Syntax.		

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JP	11.2		ed	No evaluation rule is defined for " <i>MemberExpression</i> : <i>PrimaryExpression</i> ". There are similar problems such as " <i>PostfixExpression</i> : <i>LeftHandSideExpression</i> " in 11.3, " <i>UnaryExpression</i> : <i>PostfixExpression</i> " in 11.4, etc.	Define a general evaluation rule for " <i>LHS</i> : <i>RHS</i> " where <i>RHS</i> consists of a single symbol.	
JP	11.5.3		te	The 5th item, "If the dividend is a zero and the divisor is finite, the result is the same as the dividend." is unclear, because finite also includes zero.	"If the dividend is a zero and the divisor is non- zero finite, the result is the same as the dividend."	
JP	11.5.3		te	The result, r, needs to be rounded to be representable in IEEE 754 but its rule is not defined.		
JP	11.6.2	Step 7	ed	The font of "r" in the "r <i>num</i> " in the step 7 is different from " <i>num</i> ".	Change the font of "rnum" to "rnum".	
JP	11.9.3	NOTE 3	ed	NOTE 3 is hard to understand because no concrete example is given.	Add a concrete example such as: new String("a") == "a" and "a" == new String("a") are true, but new String("a") == new String("a") is false.	
JP	11.12	Syntax	te	The RHS of <i>ConditionalExpressionNoIn</i> is different between 11.12 and Annex A.3. The second operand is <i>AssignmentExpression</i> in 11.2 but <i>AssignmentExpressionNoIn</i> in A.3.		
JP	11.13		ed	"=" should be separated from <i>AssignmentOperator</i> to make the correspondence between the syntax and the semantics clear. Currently the productions used in 11.13.1 and 11.13.2 are not listed literally in 11.13.	11.13 Change the productions as follows. AssignmentExpression : ConditionalExpression LeftHandSideExpression = AssignmentExpression LeftHandSideExpression AssignmentOperator AssignmentExpression AssignmentExpressionNoIn :	
					ConditionalExpressionNoIn ConditionalExpressionNoIn LeftHandSideExpressionNoIn LeftHandSideExpression AssignmentOperator AssignmentExpressionNoIn	

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					AssignmentOperator : one of *= /= $%= += -= <<= >>= &=$ ^= $ =$ 11.13.2 Change: The production AssignmentExpression : LeftHandSideExpression @ = AssignmentExpression, where @ represents one of the operators indicated above to The production AssignmentExpression : LeftHandSideExpression AssignmentOperator AssignmentExpression, where AssignmentOperator is @= and @ represents one of the operators indicated above Annex A.3 Change the productions for AssignmentExpression, AssignmentExpressionNoIn and AssignmentOperator as above.	
JP	12	Semantics	ed	The return type of evaluation rule for statements is not clearly defined.	Make reference to the Completion type in 8.9. That will be great help for readers.	
JP	12.1	Algorithm	ed	It is difficult to find out a underlying reason to combine s.type, s.target and s1.value in step 5 of " <i>StatementList</i> : <i>StatementList Statement</i> " of which the reason is considered that {1;;;;}, {1; {}}, {1; var a}, etc. should return 1.	Such additional explanation with concrete examples is preferred.	
JP	12.6.2	Algorithm	ed	The typeface of "n" in " <i>Expression</i> " in step 2.a is Roman.	Change the typeface of the word " <i>Expression</i> " to Italic.	
JP	12.6.3	Algorithm	ed	The step 1.b describes "Call GetValue( <i>exprRef</i> ). (This value is not used.)". Meaning of the annotation is considered to be similar to the NOTEs in 11.4.2 and 11.14, but the annotation should have additional explanation for	Add the following note: "NOTE: GetValue must be called even though its value is not used because it may have observable side-effects."	

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				clarification.		
JP	12.6.3	Algorithm	ed	The typeface of "n" in " <i>Expressio</i> n" in step 3.a.i is Roman.	Change the typeface of the word " <i>Expression</i> " to Italic.	
JP	12.6.3	Algorithm	te	The step 3.a.ii for the productions for "IterationStatement: for (ExpressionNoInopt; Expressionopt; Expressionopt) Statement" and "IterationStatement: for (var VariableDeclarationListNoIn; Expressionopt; Expressionopt) Statement" test the condition by "GetValue(testExprRef) is false". It is inconsistent to evaluation rule for the if statement (12.5) and the while statement (12.6.1).	Change " GetValue( <i>testExprRef</i> )" to "ToBoolean(GetValue( <i>testExprRef</i> ))".	
JP	12.11	Algorithm 3	ed	The typeface of "CaseClause" and "CaseClauses" is not Italic in the step 3 in the evaluation rule of the production "CaseBlock: { CaseClausesopt DefaultClause CaseClausesopt }".	Change the typeface of the two words to Italic.	
JP	12.13	Semantics	ed	The last part of the sentence "The production is evaluated as:" should be "is evaluated as follows:".		
JP	12.14	Syntax	ed	In Syntax description, the typeface of " <i>finally</i> " in the production " <i>Finally</i> : <i>finally Block</i> " is Italic.	Change the typeface of the word to fixed width font.	
JP	12.14	Semantics	te	<ul> <li>The result of try block, whose type is the Completion specification type, is visible from user code. It should be internal to this specification.</li> <li>The production TryStatement : try Block Catch is evaluated as follows: <ol> <li>Let B be the result of evaluating Block.</li> <li>Return the result of evaluating Catch with parameter B.</li> </ol> </li> <li>And, the production Catch : catch ( Identifier ) Block is evaluated as follows: <ol> <li>Let C be the parameter that has been passed to this production.</li> </ol> </li> </ul>	Change "evaluating <i>Catch</i> with parameter <i>B</i> " to "evaluating <i>Catch</i> with parameter <i>B</i> .value"	

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				5. Call the SetMutableBinding concrete method of <i>catchEnv</i> passing the <i>Identifier</i> , <i>C</i> , and <b>false</b> as arguments. A value of the Completion type is bound to <i>B</i> , <i>C</i> and finally used as the 2nd argument of SetMutableBinding. <i>catchEnv</i> is used to evaluate catch Block later. The code in the catch block can access to the Completion type value.		
JP	12.15	Syntax	ed	In Syntax description, " <i>debugger</i> " in the production " <i>DebuggerStatement</i> : <i>debugger</i> ;" is in Italic.	Change the typeface of the word "debugger" to fixed width font.	
JP	13.2	Algorithm	te	The step 10 is not clear when <i>FormalParameterList</i> is omitted.	Add "Let <i>names</i> be an empty list if <i>FormalParameterList</i> is omitted."	
JP	13.2.3	Algorithm	ed	The step 1 is not a part of the algorithm.	Move it to a usual paragraph.	
JP	15.1.2.2	Algorithm	te	The step 2 doesn't specify the behaviour when <i>inputString</i> doesn't contain a character that is not a <i>StrWhiteSpaceChar</i> . Example: "", " ", "\t\n", etc.	Append "Let <i>S</i> be an empty string if <i>inputString</i> does not contain any such character." to the step 2.	
JP	15.1.2.3	Algorithm	te	The step 2 doesn't specify the behaviour when <i>inputString</i> doesn't contain a character that is not a <i>StrWhiteSpaceChar</i> . Example: "", " ", "\t\n", etc.	Append "Let <i>S</i> be an empty string if <i>inputString</i> does not contain any such character." to the step 2.	
JP	15.1.3	NOTE	te	The text doesn't refer to the recent RFC for URI, RFC 3986. The text refers to RFC 1738 and RFC 2396 but they are updated and obsoleted by RFC 3986.		
JP	15.1.3	Syntax	ed	There is no "Syntax" heading before the <i>uri</i> production.		
JP	15.1.3	Syntax	ed	The font of the apostrophe character (') in <i>uriMark</i> is different between 15.1.3 and Annex A.6. It is slanted in Annex A.6 but not in 15.1.3.		
JP	15.1.3	Syntax	te	The characters in <i>uriReserved</i> are the reserved characters in RFC 2396. But reserved characters are updated by RFC 3986.	Update <i>uriReserved</i> according to RFC 3986 or declare it is based on RFC 2396.	
JP	15.1.3	Syntax	te	The characters in <i>uriUnescaped</i> are the unreserved characters in RFC 2396. But unreserved characters are updated by RFC 3986. (Some unreserved characters, "!",	Update <i>uriUnescaped</i> according to RFC 3986 or declare it is based on RFC 2396.	

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				"*", etc, are changed to reserved.)		
JP	15.1.3	Algorithm 2	ed	The step 4.d.vii.10.a of the abstract operation Decode tests V <= $0x10FFFF$ . However, the step 4.d.vii.8 tests Octets are valid UTF-8. The valid UTF-8 doesn't have any code points bigger than $0x10FFFF$ . (RFC 3629) So V <= $0x10FFFF$ is always true in the step 4.d.vii.10.a.	Change "into a 32-bit value" to "into a value up to 21-bits" in the step 4.d.vii.8, and then remove the step 4.d.vii.10.a.	
JP	15.1.3.1		te	<pre>decodeURI doesn't preserve URI semantics. For example, decodeURI convert "%25" to "%". So, decodeURI ("http://example.org/%2531") returns "http://example.org/%31". The result refers to a different resource from the argument. The concept of decoding whole URI is wrong. URI should be decoded for each component.</pre>	Describe a proper use case for decodeURI or move decodeURI to Annex B.	
				Note that the new reserved characters in RFC 3986 may cause a similar problem. So it is very difficult to find a proper use case for decodeURI.		
JP	15.1.3.3		te	encodeURI doesn't preserve URI semantics. For example, encodeURI convert "%" to "%25". So, encodeURI ("http://example.org/%31") returns "http://example.org/%2531". The result refers to a different resource from the argument. The concept of encoding whole URI is wrong. URI should be composed after components are encoded. So it is very difficult to find a proper use case for encodeURI.	Describe a proper use case for encodeURI or move encodeURI to Annex B.	
JP	15.1.3.3.	Paragraph	te	UTF-8 needs up to four bytes for each character.	Change "one, two or three escape sequences" to "one, two, three or four escape sequences".	
JP	15.1.3.4		te	Some characters, "!", "*", etc., are unreserved in RFC	Update <i>uriUnescaped</i> according to RFC 3986.	
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				2396 but reserved in RFC 3986. encodeURIComponent doesn't escape them because <i>uriUnescaped</i> is defined according to unreserved in RFC 2396. The characters may break URI structure as a result of		
				that encodeURIComponent embeds them as-is into a URI, which uses them as delimiters.		
JP	15.1.3.4.	Paragraph	te	UTF-8 needs up to four bytes for each character.	Change "one, two or three escape sequences" to "one, two, three or four escape sequences".	
JP	15.2.2.1	Algorithm	ed	"Asset:" in the step 2 is a misspelling.	"Assert:"	
JP	15.2.2.1	Algorithm	ed	There's an extra "t" in "obj t to" in the step 4.	" <i>obj</i> to"	
JP	15.2.3.9	Algorithm	te	It seems that Object.freeze doesn't forbid the [[Put]] internal method for accessors.		
				Is it intentional?		
JP	15.3.2.1	Algorithm	te	When there is no parameter, P is an empty string. But the empty string doesn't match to <i>FormalParameterList</i> because <i>FormalParameterList</i> must have one or more identifiers. Thus, the description in the step 11, "passing P as the <i>FormalParameterList</i> " is not correct.	<b>Change</b> "Return a new Function object created as specified in 13.2 passing <i>P</i> as the <i>FormalParameterList</i> and <i>body</i> as the <i>FunctionBody</i> ." To "Return a new Function object created as specified in 13.2 passing <i>P</i> as the <i>FormalParameterList</i> <sub>opt</sub> and <i>body</i> as the <i>FunctionBody</i> ."	
JP	15.4.4.3	Algorithm	ed	The step 1 defines " <i>O</i> " but it is not used. The step 2 uses " <i>array</i> " but it is not defined.	Change " <i>O</i> " to " <i>array</i> " in the step 1.	
JP	15.4.4.4	Algorithm	ed	"n" in the step 5.c.ii is not in Italic.	Make it Italic.	
JP	15.4.4.15	Paragraph 2	te	The following text is unclear whether the element searched first is <i>O</i> [ <i>fromIndex</i> ] or <i>O</i> [ <i>fromIndex</i> -1]: "The optional second argument <i>fromIndex</i> defaults to the array's length (i.e. the whole array is searched)."	Change "The optional second argument <i>fromIndex</i> defaults to the array's length (i.e. the whole array is searched)" to "The optional second argument <i>fromIndex</i> defaults to the array's length minus one (i.e. the whole array is searched)".	
					And, change the step 5 to "If argument <i>fromIndex</i> was passed let <i>n</i> be ToInteger( <i>fromIndex</i> ); else let <i>n</i> be	

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					<i>len-</i> 1".	
JP	15.4.4.15	Algorithm	ed	"Comparision" in "the Strict Equality Comparision" in the step 8.b.ii is a misspelling.	"the Strict Equality Comparison"	
JP	15.4.4.21	Paragraph 4	ed	The following text describes "filter" method in the clause of "reduce" method: "elements that are deleted after the call to filter begins and before being visited are not visited".	Change "filter" to "reduce".	
JP	15.4.4.21	Algorithm	ed	"ToUint32( <i>lenValue</i> )" in the step 3 seems to have an extra space after " <i>lenValue</i> ".	Remove the extra space.	
JP	15.4.4.22	Paragraph 4	ed	The following text describes "filter" method in the clause of "reduceRight" method: "elements that are deleted after the call to filter begins and before being visited are not visited".	Change "filter" to "reduceRight".	
JP	15.4.4.22	Algorithm	ed	"ToUint32( <i>lenValue</i> )" in the step 3 seems to have an extra space after " <i>lenValue</i> ".	Remove the extra space.	
JP	15.4.4.22	Algorithm	ed	<ul> <li>this value for <i>callbackfn</i> call is inconsistent between reduce and reduceRight.</li> <li>15.4.4.21 step 9.c.ii: "calling the [[Call]] internal method of <i>callbackfn</i> with <b>undefined</b> as the <b>this</b> value"</li> </ul>		
				<b>15.4.4.22 step 9.c.ii:</b> "calling the [[Call]] internal method of <i>callbackfn</i> with <b>null</b> as the <b>this</b> value"		
JP	15.4.5.1	Algorithm	ed	The step 3.b, "Let <i>newLenDesc</i> be a copy of <i>Desc</i> " seems to have extra spaces before " <i>newLenDesc</i> " and "copy".		
JP	15.5.4.7	Paragraph 1	ed	"-1" should be a single word; line break should be prohibited in between.		
JP	15.5.4.7	Algorithm	ed	The font of the step number "8" is wrong.		
JP	15.5.4.7	Algorithm	ed	In the description of the step 8, there seems to be an extra ")" character.		

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JP	15.5.4.8	Algorithm	ed	"-1" should be a single word; line break should be prohibited in between.		
JP	15.5.4.9	Paragraph 3, 5	te	The description "Furthermore, $localeCompare$ returns 0 or $-0$ when comparing two Strings that are considered canonically equivalent by the Unicode standard" and "If no language-sensitive comparison at all is available from the host environment, this function may perform a bitwise comparison" seems contradictory.	It will be desirable to drop the former description because NOTE 2 says the same thing.	
JP	15.5.4.13	Algorithm	ed	In the step 6, "max( <i>len</i> + <i>intStart</i> ,0)" has an extra space before " <i>intStart</i> ".		
JP	15.5.4.14	Algorithm	ed	"A.length" in step 13.c.iii.7.d should be " <i>lengthA</i> ".		
JP	15.7.4.5	Algorithm	ed	"a" in "Let a be" in the step 8.c.iii is not in Italic.		
JP	15.7.4.6	Paragraph 1	ed	"decmal" in "decmal exponential notation" is a misspelling.	"decimal"	
JP	15.9.1.1	Paragraph 2	te	Leap seconds should be permitted. The description "In time values leap seconds are ignored" forbids an implementation of ECMAScript with leap seconds. But it is difficult to implement Date if the host environment provides leap seconds. The popular timezone database, Olson's tzdata, provides leap seconds and it is used by various platforms including GNU/Linux, BSDs and Solaris. If a system is configured to use leap seconds, an application (ECMAScript implementation) on the system is difficult to ignore leap seconds.		
JP	15.9.1.1	Paragraph 2	ed	ECMAScript Number values can represent 9007199254740992 exactly.	Change "-9,007,199,254,740,991 to 9,007,199,254,740,991" to "-9,007,199,254,740,992 to 9,007,199,254,740,992".	
JP	15.9.1.8	Item (3)	ed	"WeekDay(TimeFromYear(YearFromTime(t))" in (3) lacks the last closing parenthesis.	Add a closing parenthesis.	
JP	15.9.1.9	Paragraph	te	UTC(t) cannot work well when $t$ is ambiguous.	Add the following note: "NOTE: When UTC( <i>t</i> ) is ambiguous, it returns a standard time".	

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				For example, UTC( $1289122200000$ ) in Los Angeles (PST8PDT) is ambiguous. $1289122200000$ is 2010-11- 07 01:30:00. 2010-11-07 01:30:00 PST and 2010-11-07 01:30:00 PDT are both valid. They are 2010-11-07 09:30:00 UTC and 2010-11-07 08:30:00 UTC respectively. The argument of UTC( $t$ ) doesn't have enough information to choose one of them. Actually, UTC( $t$ ) returns the former.		
JP	15.9.1.12	Algorithm	ed	There is an extra closing parenthesis after " $mn$ " in "YearFromTime( $t$ ) == $ym$ and MonthFromTime( $t$ ) == $mn$ )".	Remove the extra parenthesis.	
JP	15.9.1.15	Table	ed	The definition of YYYY doesn't specify explicitly how to format the years less than four digits. It should add leading zeros to make the format four digits.	Change "the decimal digits of the year in the Gregorian calendar" to "the decimal digits of the year 0000 to 9999 in the Gregorian calendar".	
JP	15.9.1.15	Table	ed	":" in the definition of "-" seems wrong. And "hyphon" is a misspelling of "hyphen".	Change "":" (hyphon) appears literally twice in the string" to ""–" (hyphen) appears literally twice in the string".	
JP	15.9.1.15	Table	te	The format is not clear. For example, the description, "Also included are "date- times" which may be any combination of the above" seems to permit "2010T12:00". "2010" is permitted as the date-only form, YYYY. "T12:00" is permitted as the time-only form, THH:mm. So the combination of them, "2010T12:00" is permitted. But the meaning of "2010T12:00" is not clear. It doesn't contain month and day. 2010-01-01T12:00 or 12:00 in every day in 2010 or another?	Define the format formally using BNF as follows: DateFormat ::: Year - Month - Day <b>T</b> Hour : Minute : Second . SubSecond Zoneopt Year - Month - Day <b>T</b> Hour : Minute : Second Zoneopt Year - Month - Day <b>T</b> Hour : Minute Zoneopt Year - Month - Day <b>T</b> Hour Zoneopt Year - Month - Day <b>T</b> Hour Zoneopt Year - Month - Day Zoneopt Year - Month Zoneopt Year Zoneopt Year ::: DecimalDigit DecimalDigit DecimalDigit DecimalDigit	

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				What happons when a time only form is given for	<ul> <li>DecimalDigit DecimalDigit DecimalDigit DecimalDigit DecimalDigit DecimalDigit + DecimalDigit DecimalDigit DecimalDigit DecimalDigit DecimalDigit DecimalDigit</li> <li>Month ::: DecimalDigit DecimalDigit</li> <li>Day ::: DecimalDigit DecimalDigit</li> <li>Hour ::: DecimalDigit DecimalDigit</li> <li>Minute ::: DecimalDigit DecimalDigit</li> <li>Second ::: DecimalDigit DecimalDigit</li> <li>SubSecond ::: DecimalDigit DecimalDigit DecimalDigit</li> <li>Zone ::: Z + Hour : Minute</li> <li>- Hour : Minute</li> </ul>	
JP	15.9.1.15	Paragraph 4	te	What happens when a time-only form is given for Date.parse? The format permits time-only forms, but the result of Date.parse( <i>time-only-form</i> ), such as Date.parse("T12:30"), is not clear.	Remove time-only forms.	
JP	15.9.1.15.1	Paragraph	ed	The year range should be 285,426 years.	Change "285,616 years" to "285,426 years".	

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				The ECMAScript Date can represent 9007199254740992[ms] before/after 1970-01-01T00:00:00Z. The number of days in 400 years is 400 * 365 + 97. (The Gregorian calendar has 97 leap days in 400 years cycle.) 9007199254740.992 / ((400 * 365 + 97) * 24 * 60 * 60) * 400 = 285426.78 It seems that "285,616 years" in the text ignores leap years: 9007199254740.992 / (365 * 24 * 60 * 60) = 285616.41		
JP	15.9.1.15.1	Paragraph	ed	Several examples make it easier to understand the format.	Add several examples. For example:-283457-03-21T15:00:59.008Z283458 B.C000001-01-01T00:00:00Z2 B.C.+000000-01-01T00:00:00Z1 B.C.+000001-01-01T00:00:00Z1 A.D.+001970-01-01T00:00:00Z1970 A.D.+002009-12-15T00:00:00Z2009 A.D.+287396-10-12T08:59:00.992Z287396 A.D.	
JP	15.9.3.1	Algorithm	te	The algorithm uses $UTC(t)$ . So, some ambiguous times, such as 2010-11-07 01:30:00 PDT at Los Angeles, are not generatable.	Add a note about the problem as follows: "NOTE: Some ambiguous times, such as 2010-11- 07 01:30:00 PDT at Los Angeles, are not generatable because UTC( <i>finalDate</i> ) is used."	
JP	15.9.4.2	Paragraph	te	When some components of the date-time are not given, the behaviour of Date.parse is not clear. Additionally, the time zone selection rule should be described.	Describe the behaviour as follows: If <i>Month</i> is not given, Date.parse interprets it as one.	

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					<ul> <li>If Day is not given, Date.parse interprets it as one.</li> <li>If Hour is not given, Date.parse interprets it as zero.</li> <li>If Minute is not given, Date.parse interprets it as zero.</li> <li>If Second is not given, Date.parse interprets it as zero.</li> <li>If SubSecond is not given, Date.parse interprets it as zero.</li> <li>If the timezone is not given, Date.parse interpreted as a local time.</li> <li>If the timezone is z, the string is interpreted as a UTC.</li> <li>If the timezone is +hh:mm or -hh:mm, the string is interpreted as the specified time zone.</li> </ul>	
JP	15.9.5.28	Algorithm	te	The algorithm doesn't work well when UTC( <i>t</i> ) is ambiguous. Consider the following program with the timezone PST8PDT (Los Angeles): // 2010-11-07 00:30:00 -07:00 (PDT) dt = new Date(2010,11-1,7,0,30) t = dt.getTime()+3600*1000 dt.setTime(t) // dt is 2010-11-07 01:30:00 -07:00 (PDT) dt.setMilliseconds(500) // dt should be // 2010-11-07 01:30:00.5 -07:00 (PDT) // but actually be 2010-11-07 01:30:00.5 -08:00 (PST) This is because the algorithm uses UTC( <i>t</i> ) and UTC( <i>t</i> ) chooses the PST time, not PDT time. So the time is advanced by 500 milliseconds and 1 hour.	Declare setMilliseconds in the same way as setUTCMilliseconds. This is possible because no timezone changes the offset to UTC not by a multiple of a second.	

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JP	15.9.5.30	Algorithm	te	The algorithm doesn't work well when UTC( <i>t</i> ) is ambiguous. Consider the following program with the timezone PST8PDT (Los Angeles): // 2010-11-07 00:30:00 -07:00 (PDT) dt = new Date(2010,11-1,7,0,30) t = dt.getTime()+3600*1000 dt.setTime(t) // dt is 2010-11-07 01:30:00 -07:00 (PDT) dt.setSeconds(10) // dt should be // 2010-11-07 01:30:10 -07:00 (PDT) // but actually be 2010-11-07 01:30:10 - 08:00 (PST) This is because the algorithm uses UTC( <i>t</i> ) and UTC( <i>t</i> )	Declare setSeconds in the same way as setUTCSeconds. This is possible because no timezone changes the offset to UTC not by a multiple of a second.					
								chooses the PST time, not PDT time. So the time is advanced by 10 seconds and 1 hour.		
JP	15.9.5.32	Algorithm	te	The algorithm doesn't work well when UTC( <i>t</i> ) is ambiguous like Date.prototype.setMilliseconds and Date.prototype.setSeconds. Note that there were historical timezones whose offsets to UTC are not a multiple of a minute. An example is Europe/Lisbon until 1911 in Olson's tzdata. This fact can be ignored because ECMAScript always uses the current timezone rule (15.9.1.8).	Declare setMilliseconds in the same way as setUTCMinutes, or add a note to describe this problem.					
JP	15.9.5.34	Algorithm	te	The algorithm doesn't work well when UTC( <i>t</i> ) is ambiguous like Date.prototype.setMilliseconds and Date.prototype.setSeconds. Note that there are timezones whose offsets to UTC are not a multiple of an hour. An example is Australia/Adelaide in Olson's tzdata. So setUTCHours is not usable.	Add a note to describe this problem.					
JP	15.9.5.36	Algorithm	te	The algorithm uses UTC(t). Therefore, it may cause the problem like Date.prototype.setMilliseconds and	Add a note to describe the problem.					

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				Date.prototype.setSeconds.		
JP	15.9.5.38	Algorithm	te	The algorithm uses UTC( <i>t</i> ). Therefore, it may cause the problem like Date.prototype.setMilliseconds and Date.prototype.setSeconds.	Add a note to describe the problem.	
JP	15.9.5.40	Algorithm	te	The algorithm uses UTC(t). Therefore, it may cause the problem like Date.prototype.setMilliseconds and Date.prototype.setSeconds.	Add a note to describe the problem.	
JP	15.10.1	Syntax	ed	The production of PatternCharacter doesn't start a new line after "::". The symbol in RHS should be placed in a different line from LHS. The production of PatternCharacter in Annex A.7 has the same problem.	Change <i>PatternCharacter</i> :: <i>SourceCharacter</i> but not any of: to <i>PatternCharacter</i> ::	
JP	15.10.1	Syntax	ed	The font of the hyphens in the six productions "NonemptyClassRanges :: ClassAtom - ClassAtom ClassRanges", "NonemptyClassRangesNoDash :: ClassAtomNoDash - ClassAtom ClassRanges" and "ClassAtom :: -" in 15.10.1 and Annex A.7 is inconsistent. The hyphens in the production for NonemptyClassRanges and NonemptyClassRangesNoDash in Annex A.7 are longer than the others.	SourceCharacter but not any of:	
JP	15.10.1	Syntax	ed	The font of "\" in " <i>ClassAtomNoDash</i> :: \ <i>ClassEscape</i> " is not fixed width font such as "\".		
JP	15.10.2.5	NOTE 3	ed	The explanation of /(z) ((a+)?(b+)?(c))*/.exec("zaacbbbcac") describes "because each iteration of the outermost * clears all captured Strings contained in the quantified <i>Atom</i> , which in this case includes capture Strings numbered 2, 3, and 4". But, the quantified <i>Atom</i> also includes the capture String numbered 5.	"because each iteration of the outermost * clears all captured Strings contained in the quantified <i>Atom</i> , which in this case includes capture Strings numbered 2, 3, 4, and 5".	
JP	15.10.2.6	Algorithm 7	ed	The character list of the step 3 contains two "A"	The first character, "A", should be "a".	

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				redundantly.			
JP	15.10.2.7	Algorithm 1, 2	ed	<i>"min</i> , <i>max</i> , and" in the step 2 of evaluation rules for <i>"Quantifier :: QuantifierPrefix</i> " and <i>"Quantifier :: QuantifierPrefix</i> ?" seem to have an extra space after <i>"min</i> ".			
JP	15.10.2.10	10 Algorithm te	10.2.10 Algorithm t	te	The evaluation rule for " <i>CharacterEscape</i> :: c <i>ControlLetter</i> " returns a code unit, but it should return a character.	Change "Return the code unit numbered $j$ " to "Return the character whose code unit value is $j$ ".	
				The evaluation rules for other choices of <i>CharacterEscape</i> returns a character. The evaluation rule for " <i>AtomEscape</i> :: <i>CharacterEscape</i> " expects <i>CharacterEscape</i> to return a character.			
JP	15.10.4.1	Paragraph 6 te	The text describes "The characters / or <i>backslash</i> \ occurring in the pattern shall be escaped in <i>S</i> " but no example is shown for "\" escaped in S. Since "\" is used to introduce an escape sequence, escaping "\" would break the escape sequence.	Change "The characters / or <i>backslash</i> $\land$ occurring in the pattern shall be escaped in <i>S</i> " to "The character / occurring in the pattern shall be escaped in <i>S</i> ".			
				Also, it is inconsistent that the character name of "/" is not given whereas the character name of "\" is given.			
JP	15.10.6.2	15.10.6.2 Algorithm 1	15.10.6.2 Algorithm te	te	The variable " <i>i</i> " is advanced by 2 for each iteration of the loop of the step 9. When [[Match]] returned failure, the step 9.c.i increments " <i>i</i> ". The step 9.e also increments " <i>i</i> ". So " <i>i</i> " is incremented twice for each iteration.	Remove the step 9.e.	
				The step 18 refer to " $i$ " as "the matched substring (i.e. the portion of <i>S</i> between offset <i>i</i> inclusive and offset <i>e</i> exclusive)". But " $i$ " is changed by the step 9.e after [[Match]] succeeds. So " $i$ " is not the beginning of the matched substring at the step 18.			
JP	15.10.6.2	Algorithm	ed	The description "the position of the matched substring" in the step 14 is not clear. It can be interpreted as either the beginning of the matched substring, the end of the matched substring, or etc.	Change "the position of the matched substring" to " <i>i</i> ". This proposal assumes that the step 9.e is removed as in the previous comment.		

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JP	15.11.7.4	Title	ed	The word "New" in the section title " <b>New NativeError</b> (message)" is capitalised. The word "New" should not be capitalised.	"new"	
JP	15.12.1.1	Paragraph	ed	"test" in "the ECMAScript lexical grammar defines the tokens of an ECMAScript source test" is a typo of "text".		
JP	15.12.1.1	Syntax	ed	The spacing before <i>JSONStringCharacters</i> in the production " <i>JSONString</i> :: " <i>JSONStringCharacters</i> <sub>opt</sub> "" seems different between 15.12.1.1 and Annex A.8. 15.12.1.1 has less spacing and Annex A.8 has more spacing.		
JP	15.12.1.1	Syntax	te	<ul> <li>JSONStringCharacter doesn't include U+0009(TAB). The major JSON.parse implementations (json2.js and Opera, IE8, Firefox, Chrome v8) had allowed U+0009(TAB) in JSONString.</li> <li>But if new implementations (BESEN) are going to start disallowing U+0009(TAB), compatibility of existing JSON data can be a problem.</li> </ul>	<ol> <li>Clarify to either of the followings:</li> <li>Include U+0009(TAB) into <i>JSONStringCharacter</i>, or</li> <li>Add an explicit comment something like TAB is not allowed in <i>JSONStringCharacter</i>.</li> </ol>	
JP	15.12.1.1	Syntax	te	JSONStringCharacter excludes only C0 controls (U+0000 through U+001F). However, we believe that it should also exclude DEL and C1 controls (U+007F through U+009F). FYI: "RFC 2616: Hypertext Transfer Protocol HTTP/1.1" CTL = <any (octets="" -="" 0="" 31)<br="" character="" control="" us-ascii="">and DEL (127)&gt; LWS = [CRLF] 1*( SP   HT ) TEXT = <any but="" ctls,="" except="" including="" lws="" octet=""></any></any>	JSONStringCharacter :: SourceCharacter <b>except</b> double-quote " <b>or</b> backslash \ <b>or</b> U+0000 through U+001F <b>or</b> U+007F through U+009F <b>but include</b> WhiteSpace \ JSONEscapeSequence	
JP	15.12.1.1	Syntax	te	It is desirable that <i>JSONWhiteSpace</i> includes Byte Order Mark (BOM). BOM is generated by certain editors such as Windows Notepad. So adding BOM to <i>JSONWhiteSpace</i> makes us possible to edit JSON files in various editors.	Add <bom> to JSONWhiteSpace.</bom>	

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JP	15.12.1.1	Syntax	te	JSONStringCharacter doesn't exclude Unicode line separator U+2028 and Unicode paragraph separator U+2029. They are excluded from <i>DoubleStringCharacter</i> ( <i>DoubleStringCharacter</i> excludes <i>LineTerminator</i> from <i>SourceCharacter</i> and <i>LineTerminator</i> contains them). So, JSON is not a subset of ECMAScript here. If a JSON text which contains them is evaluated as ECMAScript, it causes an error. Is it intentional?		
JP	15.12.1.1	Syntax	te	JSON should have comment syntax. A comment syntax in data exchange format is useful to annotate data. Other formats, such as XML and YAML, have their comment syntax. Assume a configuration file is written in JSON. The comment syntax is useful for explanation in the configuration file.	Add MultiLineComment and JSONSingleLineComment to JSONWhiteSpace. JSONSingleLineComment can be defined as follows: JSONSingleLineComment :: // JSONSingleLineCommentCharsopt JSONSingleLineCommentChars :: JSONSingleLineCommentChar JSONSingleLineCommentCharsopt JSONSingleLineCommentChar :: SourceCharacter but not <cr> or <lf></lf></cr>	
JP	15.12.1.1	Syntax	ed	The production for <i>JSONStringCharacter</i> is different between 15.12.1.1 and Annex A.8.1. 15.12.1.1 : <i>SourceCharacter</i> but not Annex A.8.1: <i>JSONSourceCharacter</i> but not		
JP	15.12.1.1	Syntax	ed	The production for <i>JSONStringCharacter</i> in 15.12.1.1 and Annex A.8.1 uses the word "thru". Is there a reason not to use "through"?		
JP	15.12.1.2	Syntax	ed	The production for <i>JSONArray</i> contains too wide spaces between "[" and "]".		
JP	15.12.3	Algorithm	te	The algorithm doesn't test that space contains white space		

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MB <sup>1</sup>	Clause No./ Subclause No./ Annex (e.g. 3.1)	Paragraph/ Figure/Table/ Note (e.g. Table 1)	Type of com- ment <sup>2</sup>	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
				characters only, when Type( <i>space</i> ) is String. Is it intentional?		
JP	9.3.1 15.1.3 15.12.1.1 15.12.1.2		ed	Several nonterminals are not used in RHSs and not declared as goal symbols explicitly. <i>StringNumericLiteral</i> (9.3.1) <i>uri</i> (15.1.3) <i>JSONWhiteSpace</i> (15.12.1.1) <i>JSONText</i> (15.12.1.2)		
JP	Annex A.1	FutureReserv edWord	ed	The production rule is different from the one in 7.6.1.2. Whereas Annex A says "or in strict mode code <b>one of</b> …", <i>FutureReservedWord</i> must also contain words listed above. However, the literal meaning of the sentence seems not to contain them.	Fix the definition in Annex A according to 7.6.1.2.	
JP	Annex A.1	Literal	ed	The production for <i>Literal</i> have no <i>RegularExpressionLiteral</i> as an RHS in Annex A.1, but the production for <i>Literal</i> have <i>RegularExpressionLiteral</i> as an RHS in 7.8.		
JP	Annex A.1	NumericLite ral	ed	In the production for <i>NumericLiteral</i> , the font of "NumericLiteral" is not Italic.		
JP	Annex A.1	StringLiteral	ed	The font of double quotes (") and single quotes (') in the production for <i>StringLiteral</i> is different between 7.8.4 and Annex A.1. The quotes in Annex A.1 are thinner.		
JP	Annex A.2		ed	There is no <i>NonZeroDigit</i> production defined in 7.8.3.		
	Annex A.3	ArrayLiteral ElementList Elision	ed	The font of comma in the production "ArrayLiteral : [ ElementList, Elisionopt]", "ElementList : ElementList, Elisionopt AssignmentExpression", "Elision : ," and "Elision : Elision," are different from the comma in the production for Punctuator in Annex A.1.		
JP	Annex A.3	ObjectLiteral	ed	The font of comma in the production "ObjectLiteral:		

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2 **Type of comment: ge** = general **te** = technical **ed** = editorial

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				{ <i>PropertyNameAndValueList</i> , }" and " <i>PropertyNameAndValueList</i> : <i>PropertyNameAndValueList</i> , <i>PropertyAssignment</i> " are different from the comma in the production for <i>Punctuator</i> in Annex A.1.		
ра	Annex A.3	MemberExpre ssion	ed	The font of "Arguments" in the production "MemberExpression : new MemberExpression Arguments" is not Italic.		
JP	Annex A.7	Regular Expressions	ed	The font of "\" in the production " $ClassAtomNoDash :: \ ClassEscape$ " seems not fixed width font "\".		
JP	Annex A.8.1	JSONStringC haracter	ed	JSONStringCharacter refers to JSONSourceCharacter in the RHS, but JSONSourceCharacter is not defined.		
JP	Annex B.1.2	Syntax	ed	The font of "4 5 6 7" in the production " <i>FourToSeven</i> :: <b>one of</b> 4 5 6 7" is not fixed width font.		
JP	Bibliography		ed	Referenced documents are not the latest. ANSI/IEEE Std 754-1985 is referred to but there is 2008 version. The Unicode Standard Version 3.0 is referred to but there is Version 5.2. Unicode Technical Report #15: Unicode Normalization Forms seems to refer to 1998 version but there is revision 31 released at 2009-09-03. It seems that there is a reason to refer to the Unicode Standard Version 3.0, because 7.2 and 7.6 depend on the character categories in Unicode 3.0. But it is not clear that the other documents are not latest. Is that intentional?		
JP	Bibliography		ed	Several documents referred to in the text are not listed.	<ul> <li>Add the following references:</li> <li>ISO 8601 Data elements and interchange formats – Information interchange</li> </ul>	

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					<ul> <li>Representation of dates and times</li> <li>RFC 1738 "Uniform Resource Locators (URL)"</li> <li>RFC 2396 "Uniform Resource Identifiers (URI): Generic Syntax"</li> <li>RFC 3629 "UTF-8, a transformation format of ISO 10646"</li> <li>RFC 4627 "The application/json Media Type for JavaScript Object Notation (JSON)"</li> </ul>	
JP	Bibliography		ed	There are several documents which may be good to refer to. e.g. Character Model for the World Wide Web 1.0: Normalization http://www.w3.org/TR/charmod-norm/		
JP	4.2.1 4.3.4 11.1.4 11.1.5 10.2.1.1 10.2.1.1 10.2.1.1 10.2.1 10.2.1.1 etc.		ed	The specification uses the words "initialise", "initialisation", "initialize", "initialization" and "uninitialized" inconsistently. Some of occurrences: initialise: 4.2.1, 4.3.4, etc. initialisation: 11.1.4, 11.1.5 initialize: 10.2.1.1, 10.2.1.1.1, etc. initialization: 10.2.1.1 uninitialized: 10.2.1, 10.2.1.1, etc.		
JP	5.2		ed	The word "parameterized" is used in the second paragraph.	"parameterised"?	
JP	5.2 7.8.3 8.5 9.3.1 11.5.1 11.5.2 etc.		ed	"non-zero" and "nonzero" are used inconsistently. "non-zero" in 11.5.1, 11.5.2. "nonzero" in 5.2, 7.8.3, 8.5, 9.3.1, etc.		
JP	7.1 8.6.2		ed	The specification uses the words "summarized" and "summarises" inconsistently.		
				summarized 7.1		

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				summarises 8.6.2		
JP	4.2.2 7.2 7.4 7.6 15.9.4.2 15.10.4.1 15.12.1.1		ed	The specification uses the words "recognised", "recognize", "recognized" and "unrecognizable" inconsistently.recognised7.4, 15.10.4.1 recognizerecognize7.2, 7.2, 7.6 recognizes4.2.2, 15.12.1.1 unrecognizable15.9.4.2		
JP	9.8.1 11.6.3 9.8.1 11.9.6 15.7.4.5 15.7.4.6 15.7.4.7 B.2.2		ed	The specification uses the words "zeros" and "zeroes" inconsistently. zeros : 9.8.1, 11.6.3 zeroes: 9.8.1, 11.9.6, 15.7.4.5, 15.7.4.6, 15.7.4.7, B.2.2		
JP	15.7.4.2	Paragraph 2	ed	Is the word "generalization" OK? "generalisation"?		

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