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 Software & System Engineering
 Secretariat: CANADA (SCC)

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Title CD 12119: Requirement for quality of COTS products and instructions for testing
Source JTC1/SC7 Secretariat
Project ISO 12119
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Note ‘**’ besides a country name indicates that the country should re-send to the secretary a copy of its record of its ballot

TABLE OF VOTING AND COMMENTS RECEIVED

“P” members	Approve	Disapprove	Abstain	Comments	Not voting
Australia	X				
Belgium					X
Brazil	X			X	
Canada		X		X	
China					X
Czech Republic	X				
Denmark	X				
Finland					X
France	X			X	
Germany		X		X	
Hungary					X
Ireland					X
Israel					X
Italy	X			X	
Japan	X				
Korea	X				
Netherlands	X				
Portugal					X
Romania					X
Singapore					X
South Africa					X
Spain	X				
Sweden	X				
Switzerland			X		
UK	X				
Ukraine					X
USA		X		X	
Thailand					X
TOTAL	12	3	1	6	12

LETTER BALLOT SUMMARY

“O” and “L” members commenting:

Country / Liaison				Comments	
Russia	X				
IEEE-CS				X	

Country	Comments

			Balloted	document:	ISO/IEC JTC 1/SC 7 N2724 CD 12119	
				Vote:	Approve	
National Body ID	ID	Category (TH, TL, E, G)	Clause, Sub-clause	Paragraph, Figure, Table	Comment and rationale	Proposed new text
BRA	1	E			Use the correct title: Software and system engineering - Software product evaluation - Requirements for quality of Commercial Off-The-Shelf software product (COTS) and instructions for testing	
BRA	2	E	all		Check for the proper format for "Note" and "Example", following Directives Part 3.	
BRA	3	E	all		check for the correct spelling for "organisation" and "standardisation". Check the misuse of space before ";", "." and ":"	
BRA	4	E	all		Consider using "purpose" or "scope" instead of	
BRA	5	E	Introduction	5th paragraph	"That last point means that their use will not be sufficient to improve them by discovering internal errors, inconsistency with some applications, lack of performance, ..."	That last point means that their use will not be sufficient to improve them by discovering, for example, internal errors, inconsistency with some applications or lack of performance.
BRA	6	E	Introduction	8th paragraph	" requirement for testing and"	requirements for testing
BRA	7	E	Introduction	9th paragraph	"This document is then a revision of ISO/IEC 12119:1994, which retains the following needs" This construction is strange. The following needs are not retained from 12119:1994.	This document is then a revision of ISO/IEC 12119:1994, with the following additional needs:
	8	E	Introduction	Last paragraph, 3rd bullet	"take into account the new normative context" Which normative context?	
	9	E	1	EXAMPLE	"human resources management, sales management, ..."	human resources management software , sales management software
	10	E	1	2nd bullet	"test file requirement" Check the use of capital letters in "test file" as seen in the next Note.	(test file requirements)
	11	E	1	2nd Note	"some software needs ..."	some software need
	12	E	1	last sentence	"4) users who may profit from better products"	f) users who may profit from better products
	13	E	2	1st sentence	"... clauses 5.2 - 5.4"	... clauses 5.2 to 5.4
	14	E	2	bullets	correct the position of "or" between the bullets	
	15	E	2	last NOTE	"... can serve as the guide"	... can serve as a guide
	16	E	3		Use the proper title of ISO/IEC 25010, ISO/IEC 25000 and ISO/IEC 9127	Software and system engineering

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	17	E	4.4		Use the proper reference to ISO/IEC 25000	[ISO/IEC 25000]
	18	E	4.9		" 4.9 requirements document: A document containing any combination of recommendations, requirements or regulations to be met by a COTS." Use a sequence according the level of stringency.	4.9 requirements document: A document containing any combination of requirements, regulations or recommendations to be met by a COTS.
	19	E	4.9	EXAMPLE	be met by a COTS.	these documents may be technical reports or standards , a requirements list (or requirements specification model) for specific users, or even a law
	20	E	5.1	2nd paragraph	"Clauses 5.2 - 5.4 include:" "Requirements applicable to the programs and to the data, if there is, ..."	Clauses 5.2 to 5.4 include: Requirements applicable to the programs and to the data, if there are ...
	21	E	5.2	all	The format for the clause and subclauses is not standardised. For example: General requirements on availability; General requirements on contents; identification and indication (without the word "requirements"; Statements on Functionality, etc. A possible solution could be use in 5.2 "Requirements for product description" and withdraw "requirements" in all the other subclauses, such as in 5.22. Another point is why to use "General requirements on availability "and "General requirements on contents". What are the specific requirements in contrast to general? Suggested delete "general"	5.2 Requirements for product description 5.2.1 Availability 5.2.2 Contents 5.2.3 Identification and indications 5.2.4 Statements on functionality etc
	22	E	5.2.3.6	last 2 sentences	"The statement may appear in a product description if previously a particular hardware or software product has been identified. The statement may appear if previously a version of a product has been identified." These 2 sentences are not clear.	

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	23	TH	5.2.4.1		"The product should, if applicable, contain statements on functionality, ..." Is it possible for a COTS not to be applicable statements on functionality? Suggested change "should" by "shall". The "shall " in 5.2.4.2 also reinforce this suggestion.	
	24	TL	5.2.4.2	NOTE	"Not every user-callabe function need be mentioned, and not every detail on how a function is called need be given" Which one need to be mentioned? Notice that there is a "shall" in 5.2.4.2	
	25	E	5.2.4.5		"The product description shall include information for preventing unauthorized access, whether accidental or deliberate, ..." This sentence is strange, since it indicates the product description can prevent unauthorized access.	The product description shall include information regarding to the prevention of unauthorized access, whether accidental or deliberate, ...
	26	TH	5.2.5.1		"The product description should contain, if applicable, statements on reliability, ..." The use of "should" is not consistent with "shall" in 5.2.5.2. Suggested change "should" by "shall".	
	27	TL	5.2.5.2		"The product documentation" change to "product description".	
	28	TH	5.2.6.1		Change "should" by "shall" see comment #26	
	29	E	5.2.6.2	EXAMPLE	add "web browser"as a type of interface, for its relevance nowadays.	
	30	E	5.2.6.4	EXAMPLE	add "interface customisation" as an additional	

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	31	TH	5.2.7		"The product description should include, if applicable, data on time behavior of the product such as response times and throughput rates for given functions under stated conditions. The product description should also contain, if applicable, statements on resource utilization, based on SQuaRE quality model and guide (ISO/IEC 25010 - Quality Model and Guide)" Use the same format as in 5.2.4 to 5.2.6.	The product description shall include, if applicable, statements on efficiency, taking into account time behaviour and resource utilization, based on SQuaRE quality model and guide (ISO/IEC 25010 - Quality Model and Guide).
	32	TH	5.2.8		Change "should" by "shall" If applicable then "shall" is proper.	
	33	TH	5.2.9		see #32 - Esse número precisa ser trocado (parece ser o comentário do item 5.2.8)	
	34	E	5.2.9		"The product description should contain, if applicable, statements on portability, taking into account adaptability, installability and replaceability and co-existence, based on SQuaRE ..."	The product description shall contain, if applicable, statements on portability, taking into account adaptability, installability, replaceability and co-existence, based on SQuaRE ..."
	35	TH	5.2.10		see #32 - Esse número precisa ser trocado (parece ser o comentário do item 5.2.8)	
	36	E	5.2.10		"The product description should contain, if applicable, statements about quality in use, taking into account effectiveness, productivity, safety or satisfaction in a specified context of use, based on SQuaRE quality model and guide (ISO/IEC 25010 – Quality Model and Guide). Statements about quality in use should be based on a test that can be reported in the format given in SQuaRE (ISO/IEC 25010 - Quality Model and Guide)." ISO/IEC 25010 will provide a test report format? Or it will be in ISO/IEC 25024 - Metrics for quality in use?	The product description shall contain, if applicable, statements on quality in use, taking into account effectiveness, productivity, safety and satisfaction in specified contexts of use, based on SQuaRE quality model and guide (ISO/IEC 25010 – Quality Model and Guide). Statements on quality in use should be based on a test that can be reported in the format given in SQuaRE (ISO/IEC 25024 - Metrics for quality in use).
	37	TL	5.3.1.2		The others itens are not using "completely". It is not clear how to describe "completely".	All the functions stated in the product description and all user-callable functions in the program shall be described in the user's documentation.

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	38	TL	5.3.1.5	NOTE	"The installation documentation should state the minimum and maximum sizes of the files once installed." Would be the "required disk space for installation"?	The installation documentation should state the minimum and maximum required disk space for installation.
	39	E	5.3.5.1		"Apprehension of the user`s documentaion should be facilitate by an adequate organization of documents." Use "understanting" instead of "apprehension"	Understanding of the user`s documentaion should be facilitate by an adequate organization of documents.
	40	TL	5.4.1.1 and 5.4.1.2		These itens are related to the quality characteristic of Portability. They should be moved to item 5.4.6	
	41	E	6.5.1		Misuse of bold letters.	

			Balloted	document:	ISO/IEC JTC 1/SC 7 N2724 CD 12119	
				Vote:	Disapprove with comments	
National Body ID	ID	Category (TH, TL, E, G)	Clause, Sub-clause	Paragraph, Figure, Table	Comment and rationale	Proposed new text
CAN	1	G	whole document		Document even if considerably improved still does not comply to ISO Directives Part 3.	The whole document has to be revised clause by clause and corrected following requirements expressed in Part 3
CAN	2	E	whole document		the document requires improvement of English. Existing text bears too many influences from latin languages	The text should be either co-edited or revised by English native speaker.

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				Vote:	Approve	
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FRA	1	TH			<p>This standard defines requirements (see title, part 5, part 6, ...). Requirements are indicated by the form "shall". This standard is used by two categories of organisations : certification bodies (and laboratories, accreditation bodies, ...) and others (suppliers, buyers, ...).</p> <p>Certification bodies can not deal with sentence like "sth should do sth" : there is no requirement. All other organisations using the the standard are free to use and interpret the standard as they want.</p> <p>Also : subclause 7.3, Test report, use the sentence "...observed non-conformities to recommendations" : this is a nonsense, a non-conformity to a recommendation can not exist. According this, replace all forms "should be" by "shall be" and make the necessary change in clauses 2, Conformance, and 7, Instructions, for testing by removing all sentences containing the word "recommandation".</p> <p>- Additional remarque : the ISO 9001 standard, Requirements for Quality Systems, does not contain any "should be"</p>	
FRA	2	E	1	3	typo	requirements for test (test requirement)
FRA	3	TH	2	5	according comment FRA 14, simplify the paragraph	<p>The conformity of the programs and data to the requirements of the clause 5.4 is demonstrated by:</p> <ul style="list-style-type: none"> · tests of the programs and data according to the clause 7.2.4 ; or · the evaluation of the conformity of the test's file to the requirements of the clause 6 according to the clause 7.2.5, which has for consequence to establish the conformity of the programs and data to the requirements of

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FRA	4	E	3	2	ISO/CEI Directives, Part 3 does not longer exist	make reference to ISO/CEI Directives, Part 2
FRA	5	TL	5.1	1	Second sentence "ISO/IEC 9127...documentaion." is an advice. Put in a note	
FRA	6	TL	5.2.3.4		This clause has the same meaning as clause 5.2.4.2 , the two clauses are redundant, remove	
FRA	7	TL	5.2.3.6	1	Sentence "Different requirements." is a advice. Put it in a note.	
FRA	8	TL	5.2.3.6,	end of clause 4,5 ?	The two sentences "The statement ... previously ... identified" have non sense : twice the same sentence, what mean "previously" in the context of this standard defining requirements that are	
FRA	9	TL	5.3.2.2		comment dispo 07N2723 FRA 20 is not taken into account : not be self standing, to rewrite	The presentation of the user documentation information shall be free from ambiguities and errors.
FRA	10	TL	5.4.1.4		- make also reference to product description (as in version 1995 of ISO/CEI 12119) and - remove redundant text	All functions mentioned in the user's documentation and the product description shall be executable with the corresponding facilities, properties and data, and within the boundary values given there.
FRA	11	TL	5.4.1.5		rewrite in one sentence	The functions of the program shall be executed according to all the statements in the product description and the user
FRA	12	TL	5.4.3.1		There are two sub clause 5.4.3.1. Because the first one is ann advice, transform it in a note.	
FRA	13	TL	6.2.2.2	2	The sentence "The identifiers should identify each document in a single way" is redundant with the part of sentence "... a single identifier (reference, number of version, date)". Remove the last sentence.	

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FRA	14	TH	6.3.1		<p>All the requirements (6.3.1.1 to 6.3.1.11) for test specifications require only testing of the functions of the product, nothing is required for the quality characteristics (reliability, usability, efficiency, ...). Adding new requirements (6.3.1.1 and 6.3.1.2) concerning quality characteristics will bring the following:</p> <ul style="list-style-type: none"> - completeness of the test file, - simplification of the requirements for conformance (clause 2) - simplification of the requirements for testing of programs and data (clause 7.2.4) 	<p>6.3.1.1 <new> The test specification shall take into account all the quality characteristics mentioned in the product description.</p> <p>6.3.1.2 <new> All quality characteristics mentioned in the product description shall be the object of test cases.</p>
FRA	15	E	6.3.1.4		<p>This clause is not on the right place, it shall be numbered 6.3.1.7, see comment dispo 07N2723 FRA 35. According this , the clauses 6.3.1.5, 6.3.1.6 and 6.3.1.7 shall be renumbered 6.3.1.4, 6.3.1.5 and 6.3.1.6</p>	
FRA	16	TL	6.3.1.7 (new 6.3.1.6)		<p>rewrite in one sentence</p>	<p>The criteria used to decide if the test result demonstrate the conformity of the program and data to the product description and user documentation shall be indicated</p>
FRA	17	TL	6.3.1.9, 6.1.3.10		<p>According comment dispo 07N2723 FRA 38 : 6.3.1.9 is the rewriting of 6.1.3.10 : delete 6.1.3.10 and renumber 6.3.1.9 to 6.3.1.10</p>	
FRA	18	TL	new 6.3.1.9		<p>The result of comment dispo 07N2723 FRA 37 is not included</p>	<p>6.3.1.9 All the operational limits indicated in the product description and the user documentation shall be subject to test cases.</p>

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FRA	19	TH	6.3.1.1 to 6.3.1.11		For clarity, the whole clause 6.3.1 is put here : this comment is the same as the 4 previous	<p>6.3.1 Test specification</p> <p>6.3.1.1 The test specification shall take into account all the functions described in the product description and the user's documentation, as well as the combinations of functions representative of the task to be achieved.</p> <p>6.3.1.2 All the functions described in the product description and the user's documentation shall be the object of at least one test case.</p> <p>6.3.1.3 The test cases shall demonstrate the conformity of the program and data to the statements in the product description and the user's documentation.</p> <p>6.3.1.4 The design method of test cases shall be indicated.</p> <p>6.3.1.5 The level of functional decomposition selected as base for the test case design shall be indicated.</p> <p>EXAMPLE : a function can be :</p> <ul style="list-style-type: none"> • a paragraph of the user's documentation; • an item of a shell ; • a button of man-machine interface ; • a language command. <p>6.3.1.6 The criteria used to decide if the test result demonstrate the conformity of the program and data to the product description and user documentation shall be indicated.</p>

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	20		6.3.1.1 to 6.3.1.11 continue		For clarity, the whole clause 6.3.1 is put here : this comment is the same as the 4 previous >>>due to limitation of Excel, this comment is on two lines <<<<<	6.3.1.7 The test cases shall be free from contradiction within themselves and with the product description and the user documentation. 6.3.1.8 All the installation procedures shall be subject to test cases. 6.3.1.9 All the operational limits indicated in the product description and the user documentation shall be subject to test cases. 6.3.1.10 Well known violations of syntactic conditions for input shall be subject to test cases. 6.3.1.11 If examples are indicated in the user's documentation, they shall be used as test cases but the whole test shall not be limited to these examples
FRA	21		6.4.1, 6.4.2, 6.4.3		The test case description, as stated in the standard, impose a structure of the description of the tests. This is not acceptable in standard that has to give objectives and not solutions. The practical experience of a certification body show also that a multitude of possibilities exist to describe test cases. Rewrite these 3 clauses in one, "Test case", by keeping all the elements, but by removing the structure. Maintain the definitions of "test scenario" and "elementary test" for explanation purpose.	6.4.1 Test case 6.4.1.1 The description of each test case shall include : - its test objective ; - a unique identifier ; - environment and other test conditions (detailed configuration and preliminary works) if it is necessary to bring additional information compared to those provided in the test plan ; - the description of the test scenario; - input data of test ; - the description of the elementary tests ; - the expected behaviour of the system; - the criterion of the result interpretation; - the criteria used to decide on positive or negative result of the test case.

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FRA	22	TH	6.4.4 (new:6.4.2)		The requirements for test procedures don't really include requirements, just one on reproductibility of the tests. Add the following clause.	6.4.2 (old : 6.4.4) Test procedures 6.4.2.1 The test procedure shall include : - the test preparation, - the actions necessary to begin and to execute the test, - the actions necessary to record the test results, - the conditions and actions to stop and eventually restart the tests.
FRA	23	E	6.4.4.1		English grammar ?? according previous comment, renumber	6.4.2.2 Test procedures shall permit to reproduce the tests.
FRA	24	TL	6.5.1.1		The result of comment dispo 07N2723 FRA 42 is not included : The end of the sub-clause gives recommendations and not objectives : rewrite by removing the end of sentence	The traceability between the user's documentation or the product description and the test cases shall be demonstrated.
FRA	25	TH	6.6.2.2	2	according comment FRA 21 change "elementary test" to "test case" and remove second bullet	6.6.2.2 The execution reports shall include: - the identifier of the test case ; - the name and the function of the person having carried out the test ; -
FRA	26	E	7.2.3		typo	... clause 5.3
FRA	27	TH	7.2.4		- according comment FRA 14, simplify the paragraph - paragraph 2 of 7.2.4.1 is wrong stated	7.2.4 Programs and data The conformity of programs and data to the requirements of the clauses 5.4 shall be tested. A test file conforming with the requirements of clause 6 shall be made.

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FRA	28	TH	7.3	4	according comment FRA 14, remove the end of the last sentence	<p>Clause 5 of the test report (results of the tests) shall contain the results of the test of the product description and the user's documentation. According to the supplied elements, it shall contain one of the two following points :</p> <ul style="list-style-type: none"> - the results of the test of conformity of programs and data to the requirement of the clause 5.4 ; - the results of the evaluation of the

		Balloted		document:	ISO/IEC JTC 1/SC 7 N2724 CD 12119	
				Vote:	Disapprove	
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DEU	1	G	Various		The German comments on the previous ballot made it into the ballot summary N2628 but not into the comment disposition N2723.	Please dispose of the German comments listed here as X1 thru X31 this time around.
DEU	2	G	Various		There are numerous sentences which are too long and/or difficult to understand, or even not intellegible, e.g.: DEU Comment to Clause 2 Para 5	Establish an adhoc to review the whole CD for readability
DEU	3	TH	Intro	1	The present wording infers that the standard is applicable to critical or even safety applications, areas for which specific standards are applicable, and SC7 is even not responsible.	Computers are used in an increasingly wide variety of applications and their correct operation is often vital for business or private needs.
DEU	4	TL	Intro	2	Why consumer? This is first not defined and usually synonymous with private consumer. Also, the difference between package information and the user documentation within the package has to be made as the packages are usually sealed.	Commercial software packages are ready-made packages sold off-the-shelf to the customer who had no influence on its features and other qualities. Typically the software is sold plastic-sealed. The information provided on the cover of the package is often the only means whereby the manufacturer or marketing organization communicates to the purchaser the capability of the software. It is therefore important that essential information is given to enable the purchaser of a sealed package to make his decision. In most cases the software itself is sealed and non-returnable when the seal is broken. Therefore, in many instances a test of the software is not possible and the user can resort at best to a product description usually obtained prior to the purchase e.g., via a web-site of the manufacturer. It is therefore is mandatory that this documentation provides complete and correct information to allow the purchaser an informed decision.

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DEU	5	TL	Intro	3	The precise definition of COTS is redundant at this introductory place in the document and shall be removed here.	This document deals with "Commercial-off-the-shelf" software packages for which the acronym "COTS" has become customary. This Acronym will be more closely defined in this document, and used henceforth throughout this International
DEU	6	TL	Intro	4	While partially true, this paragraph mixes a number of issues which are not addressable by the clauses of this standard, such as "high quality" vs. "time to market" vs. "error correction". Additional points are certainly "competitive pressure" to develop additional "new features", resulting in even more complexity with lack of testing time, or even the possibility to evaluate and certify in a context of ever changing product versions.	COTS is generally characterized by high competitiveness and resulting short "time-to-market" leading to frequent revisions and new versions of a COTS package. The resulting low cost leads purchasers to quick decisions and short evaluation times. This International Standard is intended to allow a relatively quick-and-easy evaluation of COTS. Throughout this International Standard, references
DEU	7	TL	Intro	5 through last	These paragraphs deal with the history of the standard which has no pertinent impact on its use.	

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DEU	8	TL	Scope	All	<p>This clause is confuse and needs to be rewritten, in particular:</p> <ul style="list-style-type: none"> - the notes contain additional "definition" text - the references to the ISO Guides do not belong in the scope, or should be preceeded by "e.g." - human resource management programs require security features for privacy 	<p>This International Standard may be applied to COTS, such as text processors, spreadsheets, data base programs, graphics packages, programs for technical or scientific functions, financial utility programs, sales management programs, web design software.</p> <p>It establishes quality requirements and gives instructions on how to test these requirements. It deals with COTS only as offered and sold. It does not deal with the life cycle process of the individual COTS not with the processes of its supplier.</p> <p>The intended users of this International Standard include</p> <ul style="list-style-type: none"> a) suppliers when <ul style="list-style-type: none"> 1) specifying requirements for a COTS; 2) assessing a COTS; 4) declaring conformity to this International Stabdard 5) applying for certificates or marks of conformity for COTS b) prospective and actual purchasers of COTS <ul style="list-style-type: none"> 1) to evaluate COTS for a specific purpose; 2) to compare various COTS for a specific purpose; 3) to compare COTS with presently used COTS in
DEU	9	TH	Scope	2nd Note	The reference to safety requirements is out of place and shall be expressly excluded	c
DEU	10					
DEU	11					
DEU	12	E	2	5	the evaluation of the conformity of the test's dossier to the requirements of the clause 6 according to the clause 7.2.5, which has for consequence to establish the conformity of the programs and data to the requirements of clauses 5.4.1 and 5.4.2 and the tests of programs and data according the clause	(please explain the meaning of this sentence)

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DEU	13	TH	2	1 and 3	"A COTS compliant with the present international standard shall satisfy all the prescriptions of clauses 5.2 - 5.4. Recommendations (indicated by the verbal forms "Should") are optional. The conformity of the product's description to the requirements of the clause 5.2 is demonstrated by tests according to the clause 7.2.2." Shalls are found in clauses 5.1 thru 7.4. What does compliance to 5.2 - 5.4 mean, together with the remark of the third paragraph referring to 7.2.2? What do the other shalls means?"	(please explain the meaning of these sentences)
DEU	14	TH	2	2	The remark concerning the meaning of "should" is redundant because of its meaning in standards	remove
DEU	X1	G			As the document is intended as a stand-alone document, references to "SQUARE quality model and architecture" (and evaluation!) shall be made up-front and <u>as an alternative</u> to 12119 and not as a complement.	- make references to "SQUARE quality model and architecture" (and evaluation!) up-front - suppress all references to "SQUARE quality model and architecture" in the body of the standard.
DEU	X2	G			The clauses do not contain enough explanatory text and/or guidance	
DEU	X3	G			The document seems to be not mature enough to move to PDTR. Germany proposes a CD distribution to receive more comments.	
DEU	X4	G			If not already done, Germany requests comments by other relevant WGs, in particular WG18 (Software Quality) which is covering the same domain with a great overlap	
DEU	X5	G	Intro		It should be noted that Organizations may use the standard also for evaluating their in-house products. Add note in this sence in Introduction and Scope.	Note: Organizations may use this standard also for evaluating their products for in-house use.

National Body ID	ID	Category (TH, TL, E, G)	Clause, Sub-clause	Paragraph, Figure, Table	Comment and rationale	Proposed new text
DEU	X6	E	3		COTS may not be a known term to a non-native speaker. Add definition of COTS	Commercial Off The Shelf software (COTS) Software product developed for the purpose of commercial distribution. Note: The final user is in most of the cases unknown before the Software product is specified and developed.
DEU	X7	TH	3	Many	Pertinent definitions do not conform to ISO 9000 and e.g., 15288 definitions. The SC7 goals of a unified product range is not achieved. Check definitions and adjust, e.g., as suggested below.	Check definitions and adjust, e.g., as suggested below.
DEU	X8	TH	3.1		"document of prescription" shall be related to "requirement" according to ISO 9000. "document of prescription" is not used in the body of the standard. However, requirement is used all over in the standard. The Term conflicts with 3.7 "requirements document"	Adjust or remove.
DEU	X9	TH	3.2		The text is confusing and inappropriate as a definition as it refers to itself. Also, verification has a specific meaning according to ISO 9000 and should be avoided.	elementary test Test specifying the of a particular function without any relation with an to other functions of the COTS.
DEU	X10	TH	3.3		For consistency, program shall be replaced by COTS	The implementation of an algorithm in the COTS
DEU	X11	E	3.4		The term "maintenance" is used only in one sentence of the body (4.2.3.10)	remove
DEU	X12	E	3.5		No occurrence of "package documentation" was found in the document	remove
DEU	X13	E	3.7		The definition is unusual and confusing (refer also to 3.2). Clarify, e.g. as shown.	Requirements Specification A document containing the requirements to be met by the COTS, including professional recommendations or legal regulations.
DEU	X14	TH	3.8		Use ISO 9000 definition which shall not be questioned; it may, however be amended if required. What is "consistent control"?	test determination of one or more characteristics according to a procedure Note: The procedure shall be reproducible and make sure, e.g., by means of execution of a program, that the COTS is in conformity with relevant parts of the requirements specification.

National Body ID	ID	Category (TH, TL, E, G)	Clause, Sub-clause	Paragraph, Figure, Table	Comment and rationale	Proposed new text
DEU	X15	E	3.09 thru 3.16		The test hierarchy seems to be terribly complex and confusing. Furthermore, the different test definitions 3.09 thru 3.16 are incoherent as shown below.	Remove definitions where dictionary meaning and explain in text
DEU	X16	E	3.09		This definition is more explicit and prescriptive ("shall or should") than the body of the standard. Move the "issues" to the body and keep a short definition.	test case A documented instruction for the tester that specifies how to test a function or a combination of functions.
DEU	X17	E	3.10		Test description is dictionary meaning and used only as a header in the body of the standard	
DEU	X18	E	3.11		Test environment is dictionary meaning and used only as a header in the body of the standard	Remove definition
DEU	X19	E	3.12		Test objective is dictionary meaning and used only as a header in the body of the standard	Remove definition
DEU	X20	E	3.13		Test plan is dictionary meaning.	Remove definition
DEU	X21	E	3.14		Test procedure is dictionary meaning and used only as a header in the body of the standard, and in the lines following the header	Remove definition
DEU	X22	E	3.15		Test scenario is dictionary meaning and used only as a header in the body of the standard, and in the lines close to the header	Remove definition and explain in body
DEU	X23	E	4.1	3rd bullet	To clarify	Requirements applicable to the program(s) and to the data that may be associated with the program(s).
DEU	X24	TH	4.1		Above all the physical parts of the COTS need to be known.	Every COTS shall include a packing list of its physical constitution. The minimum constitution is a single media containing the software, a product description and a user's documentation.
DEU	X25	TH	4.2.1.2		How does the tester check if "The product description shall be available for people interested in the product"? Is a description on the Internet part of the COTS?	Specify or remove.
DEU	X26	TH	4.2.2.3		How does the tester check for "The statements included in all the documents of the product description shall be testable" and then check if they are correct without testing?	Statements about the COTS characteristics included in all the documents of the product description shall be identified to be included in the requirements specification.

National Body ID	ID	Category (TH, TL, E, G)	Clause, Sub-clause	Paragraph, Figure, Table	Comment and rationale	Proposed new text
DEU	X27	TL	4.2.3.1		"The product description shall possess a unique identification." is not enough	The product description shall be identified by its title and by a version and/or a date.
DEU	X28	TH	4.2.3.3		Often only the manufacturer is listed.	The product description shall contain the name and address of the manufacturer or a supplier.
DEU	X29	TL	4.2.3.4		What is a "work task"?	The product description shall identify the intended work tasks and services that can be performed with the COTS product .
DEU	X30	TL	4.2.3.8		It seems that the installation requirement applies to any package. Also, expertise of the users vary!	The product description shall identify the expertise required for the installation of the COTS.
DEU	X31	TL	4.2.3.10		There are several possible after-sale interactions with the vendor.	The vendor policy on error reporting, maintenance and upgrade shall be stated.

			Balloted	document:	ISO/IEC JTC 1/SC 7 N2724 CD 12119	
				Vote:	Approve	
National Body ID	ID	Category (TH, TL, E, G)	Clause, Sub-clause	Paragraph, Figure, Table	Comment and rationale	Proposed new text
	1	E	3.		Misspelling	SquaRE => SQuaRE
	2	E	4.4		Misspelling	SquaRE =>SQuaRE
	3	E	4.7		Defined term is not used in the main text. The definition is described in place of the term.	Replace "product description and a user's documentation" with "package documentation" in the following clauses: - 5.1, 5.4.1.5, 5.4.1.7, 6.3.1.1 to 6.3.1.4, 6.3.1.7, 7.2 and 7.3. Or delete 4.7.
	4	E	4.9		Misspelling	mau => may
	5	E	5 and 6		Numbering to sentence by sentence is strange.	Delete sub-sub-sub-clause numbers or assign simple sequential numbers.
	6	E	5.2.7		Misspelling	ressources neededs => resources neededs
	7	E	5.2.9		Misspelling	SuaARE => SQuaRE
	8	TH	5.3.2.2		This sentence should be requirement. Correctness of user's documentation is highly requested by users.	should => shall
	9	E	5.3.3.2		Numbering of the clause is not correct.	5.3.2.2 => 5.3.3.2
	10	E	5.4.3		Unnecessary clause number	Delete "5.4.3.1" at the top of the first sentence.
	11	E	6.3.1.4		Unnecessary ".".	Delete ".".
	12	E	6.3.1.9		Misspelling	syntaxic -=>syntactic

				Vote:	Disapprove	
National Body ID	ID	Category (TH, TL, E, G)	Clause, Sub clause	Paragraph, Figure, Table	Comment and rationale	Proposed new text
USA	1				Comment cancelled; other numbers retained	N/A
USA	2	E	Introduction		Why is this section included? ISO/IEC standards generally do not have an introduction.	The first five paragraphs (through "given by the COTS to the user.") should be moved to the Scope clause. The remaining text (beginning with "ISO/IEC 12119") should be moved to the
USA	3	E	2	1	According to JTC1 directives "compliance" and "conformance" are not synonymous.	Change "compliant" to "conformant".
USA	4	E	2	2	This is not a correct explanation of a recommendation.	Use the text from the editing directives that explains the use of the words "shall", "should",
USA	5	E	2	3 through end	The current phrasing leaves one unsure whether testing is the only way to demonstrate conformity or if testing is merely one of a variety of ways for demonstrating conformance.	Please clarify.
USA	6	TH	3		Listing an excessive number of normative references discourages the application of international standards because it forces users to buy unneeded documents. Normative references to ISO Guides are inappropriate because guides are not normative. Similarly, a normative reference to the editing directives is inappropriate because the editing directives do not place requirements on the user of this standard. According to the ISO editing directives, normative references are provided only for documents that are "indispensable" for use of the current standard. In our opinion, from the listed items only 25010 and 9127 pass this test. Although four parts of 9241 are mentioned in the text, they are recommended only for "consideration" by the user. Therefore they are not	Move all of the current normative references to an informative bibliography, except for ISO/IEC 25010 and ISO/IEC 9127.
USA	7	TH	4.2		The definition lists four criteria for determining if a product is COTS. It is unclear whether the definition says that the product must satisfy ALL criteria to be regarded as COTS or whether it must satisfy only one	Please insert the word "and" or "or" as appropriate.
USA	8	E	4.11		Use of the normative verbs "shall" or "should" are inappropriate in a definition.	Replace "shall or should" by "can".
USA	9	TH	5.1		This clause includes the word "shall". However, the explanation of conformance in clause 2 omits any mention of this clause as normative.	Please clarify the conformance requirement or remove the word "shall" from this clause.

National Body ID	ID	Category (TH, TL, E, G)	Clause, Sub clause	Paragraph, Figure, Table	Comment and rationale	Proposed new text
USA	10	TL	Introduction	2	COTS software is often sold electronically, through download or by internet order. The acquirer may not see a physical product, or packaging information, until delivery after sale, if at all.	Replace the paragraph with the following: Commercial Off-The-Shelf (COTS) software products are produced without any control by the future users. Typically the software is sold pre-wrapped with its user documentation, or by download from the Internet. For the consumer, the information provided on the cover of the package, or on the supplier's web site, may be the only
USA	11	TL	Introduction	3 thru 5	The definition of COTS belongs in clause 4, not in the introduction	Remove text
USA	12	TL	Introduction		The rationale is unclear. If COTS become obsolete very quickly, high quality may not be a major consideration compared to low cost.	Replace the paragraph with the following: Therefore, consumers may benefit from third party assurances of the quality of software and its
USA	13	E	1,e)4)		Revise for parallel structure	4) Benefit from better products.
USA	14	TL	3		The standard should be harmonized with the overall software life cycle process standard, ISO/IEC 12207	Add a reference to ISO/IEC 12207
USA	15	TL	4,2	First bullet	The definition of COTS does not depend on the means of acquiring the software	Made available to the general public
USA	16	TL	4,2	Second bullet	The profit motive is not part of the definition of COTS	Delete the bullet
USA	17	TL	4,2	Third bullet	The term "evolved" is not part of the standard definition of software processes found in ISO/IEC 12207. COTS software is often provided without warranty other than the replacement of defective media, and with limited or no technical support from the supplier (retailer)	Change to: Provided without transfer of intellectual property rights from the supplier to the acquirer.
USA	18	TL	4,6		Definitions should not repeat the term being defined. Revise to use the definition in ISO/IEC 12207 clause 4.1.1.1.5)	Maintenance: the process of managing modifications to the software product to keep it current and in operational fitness.
USA	19	TL	5,2		The detailed requirements and guidance for the product description may impose a lengthy document that would not be readily usable by a software consumer.	Provide (in an annex) guidance with a sample of a complete software product description that conforms to 12119.
USA	20	TL	5.2.2.1		While this guidance is important, it is not testable. The variety of potential buyers makes it difficult to verify whether the description is "sufficiently understandable, complete and easy of overview"	The product description should contain information needed by potential buyers to evaluate the suitability of the product for their requirements.

National Body ID	ID	Category (TH, TL, E, G)	Clause, Sub clause	Paragraph, Figure, Table	Comment and rationale	Proposed new text
USA	21	TL	5.2.3.1		The guidance is ambiguous. Should the product description itself have a unique identifier? Is this separate from the part numbers of the packaging material or the software media or software license?	The COTS package shall display a unique identifier.
USA	22	TL	5.2.4.1		Why does the guidance on functionality include the words "if applicable"? When would there be a software product that does not have functionality?	Delete the words "if applicable."
USA	23	TL	5.2.4.1		Users of this standard may not have the SQuaRE standards at hand.	Provide an example of an acceptable statement on functionality as guidance.
USA	24	TH	5.2.4.1 and 5.2.4.2		This guidance is not stated as mandatory, but the next subclause is mandatory. The guidance for 5.2.4.2 indicates that not every user-callable function need be mentioned, as indeed would be proper in an overview. Yet 5.2.4.3 says that every option and variant shall be indicated. This is contradictory.	Change shall to should in 5.2.4.2
USA	25	TL	5.2.4.5		The product description will not have room for the detailed guidance on how to prevent unauthorized access. This belongs in the user documentation.	Revise to read, The product description shall indicate whether the product has functions to prevent unauthorized access, whether accidental or deliberate, to programs and data.
USA	26	TL	5.2.5.1		Users of this standard may not have the SQuaRE standards at hand.	Provide an example of an acceptable statement on reliability as guidance.
USA	27	TL	5.2.6.1		Why does the guidance on usability include the words "if applicable"? When would there be a COTS software product that does not have usability?	Delete the words "if applicable."
USA	28	TL	5.2.6.1		Users of this standard may not have the SQuaRE standards at hand. Does this guidance mean that the supplier must have conducted usability tests on the COTS? The requirement seems to be superseded by the guidance in 5.4.3.1.	Provide an example of an acceptable statement on usability as guidance.

National Body ID	ID	Category (TH, TL, E, G)	Clause, Sub clause	Paragraph, Figure, Table	Comment and rationale	Proposed new text
USA	29	E	5.2.6.5	First bullet	The phrase "technical protection against" is incomplete	Delete
USA	30	TL	5.3.1.2		User documentation shall not be required to describe all user-callable functions. Ideally, the GUI would be so well designed and all reference material would be embedded in the software, so that the user would know what to do without ever needing to consult the documentation. The following recommended revision is from IEEE 1063-2001, Standard on Software user documentation.	Documentation shall provide complete instructional and reference information for all critical software functions (software whose failure could have an impact on safety, or could cause large financial or social loss).
USA	31	E	5.3.1.3		This statement is unclear, as the standard does not define what is a "supplied element" in the product. Does this refer to physical media, programs, functions, database tables, or what, and why is this necessary to	If the user documentation is provided in several parts, at least one item in the set shall identify all the parts.
USA	32	E	5.3.2.2		This statement is an expansion and repetition of subclause 5.3.2.2	Combine 5.3.2.2 into 5.3.2.1.
USA	33	TL	5.3.4.1		The guidance that user documentation should be understandable is good, but how should it be tested?	Include references to appropriate usability standards, or indicate how to test.
USA	34	TL	5.3.5.2		The requirement for a table of contents and an index is not appropriate for small documentation items such as quick reference cards and packaging.	Every document of more than 40 pages shall have a table of contents and an index.
USA	35	TL	5.3.5.3		Embedded user documentation in the form of pop-up "bubble help", reference lists, or wizards cannot be printed. Documentation (help) may be provided within small hand-held devices not intended to be connected	If user documentation is not provided in printed form, the documentation should indicate whether it can be printed and if so, how to obtain a printed copy.
USA	36	TL	5.4.1.1, 5.3.1.5		As worded, the 5.4.1.1 requirement says the user has to install the programs. The user may decide not to install. This is really a requirement for the documentation and not for the programs and data.	Delete 5.4.1.1. Revise 5.3.1.5 to read, If the user can install the COTS, the user documentation shall provide the installation procedure.
USA	37	TL	5.4.1.2		It is not technically practicable to expect each of the required systems in the product description to be individually sufficient for product installation. Perhaps what is meant is that the product description needs to specify the complete systems environment, so there are no other required infrastructure components. If so, this is a requirement of the product description, not of the programs and data.	Delete 5.4.1.2. The requirement is covered by 5.2.3.6.

National Body ID	ID	Category (TH, TL, E, G)	Clause, Sub clause	Paragraph, Figure, Table	Comment and rationale	Proposed new text
USA	38	TL	5.4, 5.4.1.6, 5.4.1.7, 5.4.1.8,		The standard cannot impose requirements on data. Data is input by the user and may or may not conform to the expectations of the software supplier.	Change "Data" to "databases"
USA	39	TL	5.4.2.1		The statement that "data shall be maintained in control by the user" is not true of many software products. To maintain an audit trail, the user may not be able to control or alter data once it has been entered. Further, the program may remove control from the user while performing batch operations or processing	Change to read, The program and databases shall neither corrupt nor lose data.
USA	40	E	5.4.3.2		The error message and user documentation should explain both the cause and the correction of the error.	Change to read, Error messages, with the applicable user documentation, shall explain the cause and the correction for usage errors.
USA	41	TL	5.4.3.4		Why is it a requirement that the user always be able to find out what function is being executed? This requires that the software return a response message for each function. Is this necessary and how does it benefit the user? How about when the user is looking at an hourglass (system busy response)?	Delete the requirement
USA	42	TL	5.4.3.7		"Clear and easy to overview" are not testable.	Each input screen and output report shall have a legible text identifier (a title).
USA	43	E	6.3.1.3		It may not be possible to develop one test case that covers all the functions in the user documentation	Change "All the functions" to "Each of the functions"
USA	44	TL	7,3	6th paragraph	The test report may be an electronic file rather than a printed document with pages.	Add, "For test reports in printed format, ..."

		Balloted		document:	ISO/IEC JTC 1/SC 7 N2724 CD 12119	
				Vote:	No vote but IEEE CS recommends another CD ballot	
National Body ID	ID	Category (TH, TL, E, G)	Clause, Sub-clause	Paragraph, Figure, Table	Comment and rationale	Proposed new text
IEEE CS	1	G			As a Category A liaison to SC7, IEEE Computer Society welcomes the opportunity to provide comments on this CD ballot. IEEE CS has a particular interest in this standard. In 1998, IEEE adopted ISO/IEC 12116:1994 as IEEE Std 1465-1998. As a result of its balloting process, IEEE CS made several corrections and improvements to the text. Several of the following comments map these changes into the CD draft as suggestions for improvement; these comments are prefixed by "From IEEE 1465". A few additional comments respond simply to the new draft.	
IEEE CS	2	E	Foreword		In the Foreword, it would be appropriate to mention the contribution of the IEEE standard.	We suggest adding a new fourth paragraph: "The IEEE Computer Society participated as a liaison organization in the revision of this standard. Some suggestions from the IEEE adoption of the 1994 edition of this standard have been incorporated in this revision."
IEEE CS	4	TL	1		From IEEE 1465: When IEEE adopted the standard, they added an Overview that reads in part: "IEEE Std 1465-1998 may be employed to: (a) specify quality requirements for software, and provide instructions on how to test against these requirements; (b) manage and improve the organization's quality processes and personnel; (c) establish management and engineering environments based on the quality requirements and methods in ISO/IEC 12119: 1994(E); (d) foster improved understanding between customers and vendors, and among other parties involved in the software product life cycle; (e) facilitate world trade in software." Items (b) and (c) are not addressed in the current text of the revision draft.	Add new text to the end of clause 1: "(f) organizations (1) establishing management and engineering environments based on the quality requirements and methods of this international standard and (2) managing and improving their quality processes and personnel."
IEEE CS	9	G	4.1		Thank you for the acknowledgement of the IEEE standard.	

National Body ID	ID	Category (TH, TL, E, G)	Clause, Sub-clause	Paragraph, Figure, Table	Comment and rationale	Proposed new text
IEEE CS	11	G	4.4		Thank you for the acknowledgement of the IEEE standard.	
IEEE CS	13	E	4.11		From IEEE 1465: There may be more than one objective of a test case.	Change "objective" to "objectives" or "objective(s)".
IEEE CS	14	E	5.1	Title of clause	From IEEE 1465: Change "object" to "objective".	Change "object" to "objective".
IEEE CS	16	E	5.2.2.1		From IEEE 1465: We don't understand the meaning of the phrase "easy of overview".	Replace with "organized".
IEEE CS	17	E	5.2.7 and 5.4.4		From IEEE 1465: In our adoption, we changed "efficiency" to "performance". However, we understand that the term "efficiency" is the one used in 9126-1. We agree with the use of this word as long as the appropriate quality model is referenced, as it is	We agree with the current text but would disagree if the reference to the SQUARE quality model were to be removed. We also recommend adding an informative note mentioning that this term is sometimes called "performance" in other standards.
IEEE CS	18	E	6.1	Clause title and second paragraph.	From IEEE 1465: Change "object" to "objective".	Change "object" to "objective" in both places.
IEEE CS	19	TH	6.3		From IEEE 1465: As currently described, the test plan does not list the test objectives to be accomplished.	Add a requirement that the test plan should contain "a detailed list of test objectives to be covered in the test cases."
IEEE CS	20	E	6.3.1.2		From IEEE 1465: Change "object" to "objective".	Change "object" to "objective".
IEEE CS	21	TL	7.3	Next to last paragraph	From IEEE 1465: This standard descends to an inappropriate level of detail when it requires each page of the test report to list the total number of pages in the report.	Delete the phrase "and the total number of its pages". Alternatively, allow alternative means of conformance by stating that the test report should be published in a form that permits a user to verify receipt of the complete report.