
AUSTRALIA

Australian Comments on Proposed Draft Technical Report 14759

The Australian National Committee have the following comments on the above document in support of a disapproval vote:

General Comment

The term -Mock-up- has no historical record of usage in English-language software engineering practice. Uses of the term -prototype- and -pilot- have been used in the past, with the differences between demonstration, functional and evolutionary prototypes generally understood. The term -mock-up- is in general restricted to other fields of engineering (e.g. aeronautical) and most commonly references physical entities with limited or no functionality. Introduction of a new term to cover an area will only cause confusion unless the terms can be clearly and obviously linked to existing software engineering practices. There is seems to be a tendency to relate the document only to HCIs when other cases may exist. In its current form the document complicates the area and uses terms which are imprecise, inconsistent and probably incorrect. What is called an -operational illustrative prototype- might just as well be a mock up as an illustrative system is unlikely to be reusable in a production system. The entire philosophy as to why one needs to change Z67-111 must be questioned. The proposed Technical report does not add value to Z67-111. It also causes confusion between a mock up and a prototype.

Recommendation

Provide clear linkages to existing practices and in a general sense. Use terms which clearly discriminate between valid categories of -mock up- and -prototype-. Explain how -mock ups- and -prototypes- fit into the overall development process e.g. they provide a specific focus for eliciting user requirements or proof-off-concept.

Pg Cover Ln 4 Comment

The title implies a 12207 compliant tailoring. However, the document does not comply with the intent of 12207 in regard to tailoring i.e. it is not obvious where the tailoring decisions and rationale are covered. The inclusion of tailoring examples seems at odds with the Purpose.

Recommendation

Re-title to Definitions for mock up and prototype or provide a more compliant tailoring
Provide more/better examples for the use of the defined terms instead of focusing so much on life cycle models.

AUS-3 Pg 5 Ln 1 Sec 1 Comment

Probably detracts from the intended tone.

Recommendation

Remove probably.

AUS-4 Pg 5 Sec 1 Comment

The aeronautical analogy causes confusion and some rejection in the software world.

Recommendation

Provide a software based analogy.

AUS-5 Pg 5 Sec 1 Comment

Why must a mock up be thrown away? Can't it be retained for verification, training and as a record?

Recommendation

Reconsider the first distinction. A mockup is an item which is not intended to evolve into a fully operational product. A prototype is an item which may (by agreement) evolve into an operational product. The disposition of both mock ups and prototypes needs to be stated as part of the agreement.

AUS-6 Pg 5 Sec 1 Comment

The additional distinctions are confusing e.g. refer to the following definitions taken from the Macquarie dictionary: 1. Demonstrative explanatory or illustrative; serving to demonstrate 2. Functional capable of operating 3. Illustrative serving to illustrate (illustrate - to make clear or intelligible, as by example) 4. Operational ready for use; in working order

Recommendation

Don't use terms for separate characteristics which mean the same thing e.g. demonstrative and illustrative. Consider terms such as usable versus throw-away, and fully- functional versus demonstrative. (It is unlikely that a mock up could be fully functional.) Consider that prototypes can be firstly demonstrative or functional. If they are functional, then they may be -throw-away- (non-evolving) or evolving i.e. for further development into the final system.

AUS-7 Pg 5 Sec 2 Comment

The term incremental is used.

Recommendation

Change to evolutionary.

AUS-8 Pg 5 Sec 2 Comment

Customers should also refer to the standard as the basis for clarifying requirements.

Recommendation

Add user representatives to the list.

AUS-9 Sec 4 Comment

The form of reference to Normative References is not in the required format.

Recommendation

Refer to the JTC1 Guidelines for Presentation of Standards and Technical Reports.

AUS-10 Pg 6 Sec 5.2 Comment

The examples seem contrived, unclear and difficult to relate to practical circumstance. It is doubtful if the detailed classification is valid. The distinction between -demonstrative illustrative mock up- and -operational illustrative mock up- has no obvious industrial application. Why does a slide show have to be thrown away? It could be used for training or marketing the product.

Recommendation

Explain why each example was chosen for that category. Provide other examples to provide more general coverage of software engineering.

AUS-11 Pg 7 Sec 6 Comment

Why is the software supporting the mock up (is) thrown away? Why would it not be kept along with the design as a quality record and for use in subsequent verification and validation.

Recommendation

What happens to the interim products should be agreed as part of the arrangement between the supplier and the customer. (This highlights a fundamental problem with the approach taken i.e. the scope of possibilities exceed those considered.)

AUS-12 Pg 7 Sec 6 Comment

Clarify scope

Recommendation

change to (e.g. machine, language, tools)

AUS-13 Sec 6 Comment

The linkage of documentation to a mock up or prototype seems irrelevant. Development of mock ups and prototypes is usually undertaken quite independently of the user documentation for example.

Recommendation

Remove the linkage to documentation.

AUS-14 Sec 6 Comment

A prototype will not necessarily use the final machine and operating environment.

Recommendation

Cater for this generalisation.

AUS-15 Pg 8 Comment

Table 1. Why is the mapping merely proposed

Recommendation

Move to an annex and present as an example if it is not definitive. (Applies to Tables 1, 2 and 3).

AUS-16 Pg 8 Comment

Table 1. New terms final, reduced and normal added.

Recommendation

Define new terms.

AUS-17 Pg 8 Comment

Table 1. Caption does not comply with ISO styles..

Recommendation

Move caption above the table for all tables.

AUS-18 Pg 8 Sec 7 Comment

Is it true that assessing HCIs is the sole aim of an illustrative deliverable.

Recommendation

Verify correctness of the statement.

AUS-19 Pg 9 Sec 7 Comment

Table 2. New term represented added.

Recommendation

Define new terms.

AUS-20 Sec 7 Comment

Tools used for illustrative representations can produce computer output responses to user inputs e.g. a CBT package used to verify user interaction with the system.

Recommendation

Allow some generalisation.

AUS-21 Pg 9 Sec 8 Comment

This states that the distinction is chronological whereas in 1.

Introduction the distinction is the level of quality.

The quality of a product when in development is not necessarily less than when the same product is in an operating environment.

Recommendation

The distinction is neither of these as it must be derived from the definitions of the two terms. Quality is about meeting a requirement. If the requirement in the initial stages of a project is for a throw-away mock up and this is produced, the quality is achieved. The inference is apparently to the functional richness of the product, which usually does build up progressively.

AUS-22 Pg 10 Sec 8 Comment

Table 3. Incorrect spelling in caption

Recommendation

Change to Demonstrative

AUS-23 Sec 9 Comment

The incorporation of prototype approaches into the SLCP of ISO/IEC 12207, which is supposed to be the primary focus of the Standard, is not done in a manner which is readily understandable. There are several tables which are difficult to follow and numerous references to life cycle models (eg. spiral models) that are not really the concern of ISO/IEC 12207

Recommendation

It would be expected that the proposed TR would show the SLCP relevant to use of prototypes, how using prototypes affects tailoring of the SLCP, and what anomalies/problems can result from use of prototypes in the context of ISO/IEC 12207.

AUS-24 Pg 11 Sec 9 Comment

Improve grammar.

Recommendation

Remove imaginable.

AUS-25 Pg 9 Comment

Design effort that was involved in a mock up is not necessarily thrown away.

Recommendation

A mockup used to validate a conceptual design may result in an acceptance or modification of the conceptual design.

AUS-26 Pg 11 Sec 9 Comment

Example A. Spirals are generally considered to be evolutionary not incremental.

Recommendation

Change terms.

AUS-27 Pg 13 Ln 3 Comment

The design effort is not lost.

Recommendation

Change to terminated.

JAPAN

Japan's comments on ISO/IEC N1490 (PDTR 14759 - Software life-cycle tailored for Mock-Up and Prototype)

Note:

G: General comment

TM: Technical Major comment

Tm: Technical Minor comment

E: Editorial comment

JPN-G1

It is better to change the title to "Categorisation of Software Mock Up and Prototype Model and their Use" to express actual contents.

JPN-G2

5.2 Definitions should be defined using the key words such as Mock Up, Prototype, Static, Dynamic, Demonstrative, and Operational according to the JTC1 Directive.

JPN-G3

It is better to move the contents of 5.2 Definitions to new clause 6 which has a new title (for ex. " Categorisation of Mock Up and Prototype Model").

JPN-G4

9.Examples should be moved to Informative Annex.

JPN-G5

The following is the result of reflecting the above comments:

Clause new No. /	Title actual No.
5. / nothing	Definition
6. / 5.2	Categorisation of Mock Up and Prototype Models
7. / nothing	Use of Mock Up and Prototype Models
7.1 / 6.	Mock Up versus Prototype
7.2 / 7.	Illustrative versus Functional
7.3 / 8.	Demonstrative versus Operational
Annex(informative) / 9.	Examples of life cycle models for mock up and prototype production

JPN-TM1

In addition to the description of the relation with SLCP, the description of the relation with the product (or a part of product) type is further useful in new clause "3.2 Field of application". For example, Safety Critical Software, User Interface, New Algorithm, etc.

JPN-TM2

Relation with ISO/IEC 9126 (Software quality characteristics and sub characteristics) should be described, because this draft says that mock up and prototype are used to assess HCI(Human Computer Interface) or interaction between the final operating environment and the final deliverable. The below text is supposed to be recommended.

6. pp.9 (or Recommended new clause 7. Use of mock up and prototype models) Both of mock up and prototype are helpful to analyse users' software quality (J requirements and to investigate possible risks on software quality characteristics, although they have differences and should be distinguished. These software quality characteristics are, for examples, interoperability of functionality, fault tolerant of reliability, operability of usability or time behaviour or of efficiency and so on, which may be found in ISO/IEC 9126.

JPN-TM3

It seems that the intent of the clause 6, 7 and 8 is to show the relation with SLCP. If so, it is recommended that those are merged into one clause. The title is "Use of Mock Up and Prototype Models".(See : JPN-G6)

JPN-TM4

It is better to specify that the items of the vertical axis in the table 1,2 ,3 is not activities but aspects of evaluation.

JPN-E1

"IS" of "ISO/IEC IS 12207" shall be removed in the clause 6, 7 and 8.

KOREA

TM1: Figure 3 in Page 19

For better applicability of the TR, please provide some examples of INPUT - PROCESS - OUTPUT for four alternative paths. Since each alternative path is incremental as you have defined, a prior Mock-up's or Prototype's outcome (or information) for a posterior Mock-up or Prototype.

MEXICO

From the member body of: **MEXICO**

Proposal:
Software Life-Cycle Model Tailored for Mock-Up and Prototype

* Approved of the technical report draft with the following comments:

Technical.

1. Chapter 6: Mock up versus prototype.

The paragraph: “The software supporting the prototype will be improved and will remain as a part of the final product.”. It would be better to say that may be the software will remain as a part of the final product.

For example: we could develop a prototype of HCI to validate the interface standards (colors, fonts, cursor movements, etc.) with the final users. This prototype works but surely the software will not remain because the prototype has other purpose.

2. The tables 1, 2 and 3 are linking some of the processes of the standard 12207. What about the other processes (verification, joint review, etc.)?. It is not clear what is happening with the other processes.

3. Example B: Common use of the mock up or prototype to overcome problems.

In the second paragraph : “As shown in figure 4, when the cycle of the mock up or prototype begins, the activity (specification or design) of the main project (grey shade) cannot progress”.

It is better to say that sometimes the project could not progress. This is because in medium or large projects may be it is not necessary to stop. Certainly we use the results of the mock up or prototype to decide which is the best way to continue.

Editorial.

1. Chapter 7: Illustrative versus functional.

In table 2: “Illustrative or functional in the section of Development Process topic functions”. The word normal is a little ambiguous. A better word is “operate” or “works”.

2. Chapter 8: Demonstrative versus operational.

The word “Demonstrative” in the title of table 3 must be Demonstrative.

NETHERLANDS

The vote from the Netherlands on project 07.35 "Software Life Cycle Model tailored for Mock Up and Prototype" is a firm and convinced NO.

We apologize for any confusion that might have been inflicted by the NL vote on the registration ballot that by mistake has been cast as "yes". That this was a mistake must have been clear to all those present at SC7 plenary meetings of the past years.

The Netherlands strongly object to promoting the "Mock-up and Prototype" document any further, even to the status of a technical report. The argument is that the document will intolerably confuse any readers, especially when they happen to be experienced on this issue.

We do appreciate the efforts of the advocates of the proposal in showing the danger of misinterpretation the meaning of executable prototypes, as compared to not-executable prototypes. We strongly suggest reserving the words "prototype" respectively "mock-up" for these notions. Any further elaboration on these definitions, as shown in the sections 5.2, 6, 7, 8 and 9 of PDTR 14759 will be detrimental to those working in Software and/or Systems Engineering.

As generally recognized by SE professionals, a prototype is seen as an executable model of a system under design, its purpose being to facilitate the specification of the system or software requirements, and/or, most often, the definition of the functional specifications.

Beforehand it need not be clear what the result of the prototyping, and the follow-up, will be. When the prototyping process has been successful the result in each case comprises well-defined requirements and/or functional specifications. Only at this stage it might be decided to "throw away" the prototype, or to carefully elaborate further on the prototype and build it into the final and complete system. This latter approach, especially when CASE tools are being used, is now generally known as "Rapid Application Development". When use of the prototype is discontinued, the follow-up may be either a re-run of the system life cycle phase under consideration, comprising rebuilding the system in a professional implementation from the now available specifications. Another option is to acquire an off-the-shelf system, when it turns out that the established specifications would allow doing so.

PORTUGAL

PORTUGUESE COMMENTS ON PROPOSED DRAFT TECHNICAL REPORT 14759

Title: Software Life-Cycle Model Tailored for Mock-Up and Prototype

Reference number: ISO/IEC JTC1/SC7 N1490

COMMENTS:

1. We strongly support the use of Mock-up and prototype in the software development process. It provides the users with a representative image of the final product, and enables the correction of dysfunctions while the costs of the modifications are still small.
2. From our experience we can only distinguish between mock-up and prototype. The draft approach, seems rather academic as it distinguishes 8 kinds of mock-up and prototypes.
3. We have checked that it is always the final user who evaluates the mock-up and tests the software prototype.

SOUTH AFRICA

Register: Log and Disposition of Review Comment (Mockup and Prototype) CD 2/96

Submitted by South African Bureau of Standards

Contact: Professor AJ Walker (E-mail: walker@odie.ee.wits.ac.za)

Comment Record				Comment Status\ (Maj.\ Min.)	Disposition of Comment
Comment Ref.	Comment Detail	Product Revision	Product Section Ref.		
1.	Expected the mock-up and prototype to be targeted at demonstrating something to some subsection of the client or user community?	CD	Section 1	Maj.	Introduction must identify the reason for using the Mock and Prototype.
2.	'...(HCIs or functional improvements)...' is this an example?	CD	Section 1	Min.	The second paragraph is clumsy and needs to be rewritten.
3.	'..."demonstrative" versus "operational" address the level of quality...	CD	Section 1	Maj.	Quality is not dependent on being demonstrative or operational.
4.	'...which uses incremental development...' The use of mock ups and prototypes would probably be independent of the life cycle model followed.	CD	Section 2	Min.	Replace with evolutionary or incremental'
5.	Fig 1 makes a tidy logical diagram, but does not give a good feel when one attempts to match experience:	CD	S 5.2	Maj.	Although this figure is tidy and logical it does not match well with experience. (Are all eight type possible?)
6.	There is no material difference between a demonstrative illustrative and an operational illustrative mock-up. The only example that seems applicable is a slide show which has been reviewed by users in their own environment. Perhaps an expansion of the examples would give a better feel here?	CD	5.2(bullet 1 and bullet 2)	Min.	Accept
7.	Have no feel for a mock-up of an algorithm which is a non-working prototype that is not a written algorithm. If this is a desk tested algorithm then it should be stated as such. If it was a desk tested algorithm, why would it be called a mock-up and not a spec?	CD	5.2(bullet 4)	Min.	Accept

Comment Record				Comment Status\ (Maj.)\ (Min.)	Disposition of Comment
Comment Ref.	Comment Detail	Product Revision	Product Section Ref.		
8.	Is the correct word developmental or development? applicable to all other uses of the word developmental	CD	5.2 (bullet 5)	Min	Accept
9.	'...the prototype of real-time software...'	CD	5.2 (bullet 7 and 8)	Min	Delete 'a' from sentence
10.	'...the software supporting the mock up is thrown away...'. The examples for a mock up and its definition suggest that it has no engine and therefore there would be no software to throw away	CD	Sect 6, Last para.	Min	A mock Up is not always thrown away. Note the difference between engineering and commercial usage of Mock-ups and prototypes. What about the issue of re-use libraries.
11.	Another input suggests that there is no difference between a 'demonstrative functional mock up' and a prototype. This suggestion leads to defining a demonstrative sort of package which gives a slide show look and feel of the system and all other prototypes which are real algorithms working on the final software illustrating particular points. The other ideas are interesting ideas, but not reflecting current practice.	CD	Sect. 6	Maj.	More time must be clarifying the definitions and examples - with reference to software.
12.	'...a jump from a demonstrative mock up toward an operational prototype would represent a maximum amount of risk, and would usually be avoided...'. The advantages of these techniques are so huge compared with the traditional techniques that such a risk would be insignificant and therefore '...usually be avoided...' is incorrect (irrelevant).	CD	Section 9 'Alternative paths for increments'	Maj.	'Remove 'usually be avoided'.
13.	'...the main project (grey shade) cannot progress...' while in principle this is true the whole of the development will not stop as there are many other areas not impacted by the prototype.	CD	Example B	Maj.	This is not true - the project will continue.

Comment Record				Comment Status\ (Maj.)\ (Min.)	Disposition of Comment
Comment Ref.	Comment Detail	Product Revision	Product Section Ref.		
14.	'...requirements phase...'	CD	Example B	Maj.	Use 'requirements' in place of 'specification'. That whole paragraph is irrelevant. Applies in electronics industry but not in software industry where reuse is actively encouraged.
15.	The scope is not limited to incremental development	CD	P 5, Section 3	Min.	Replace 'independent of the lifecycle'
16.	To start of 'The purpose of' is clumsy	CD	P 5, Section 3	Min.	Tidy up language usage.
17.	Product and Product attribute - Product for line 'mock-up', and Product attribute' for next two lines.	CD	P 7, S5.2	Min	Agreed.
18.	Make the tables justify the definitions instead of the other way around - see Table 1.	CD	Section 6.	Maj.	Agreed
19.	The issue of risk needs to be addressed more explicitly. Needs to be in the introduction as well.	CD	Below Fig 3	Maj.	Agreed.
20.	'design ... design effort' conflicts with 1st para Section 6.	CD	Between Figure 2 and Figure 3:	Maj.	Agreed.
21.	no guidance for the transition from mock-up to prototype	CD	Section 9: Figure 2 -	Maj.	Agreed.
22.	Appears to be a contradiction in terms	CD	S 6, 4th bullet:	Maj.	Agreed.
23.	'Further on' should be 'Later'	CD	S6, Last para.	Min.	Agreed.
24.	'Will' is this mandatory	CD	S6, Last para.	Min.	Agreed.

Comment Record				Comment Status\ (Maj.\ Min.)	Disposition of Comment
Comment Ref.	Comment Detail	Product Revision	Product Section Ref.		
25.	Replace final' with 'target'	CD	Above Table 1 - 2nd and 3rd bullet'	Maj.	Agreed
26.	'full documentation' of the final product or of the prototype?	CD	Above Table 1 - last bullet -	Min.	Agreed.
27.	In all this document there is the assumption is that the requirements are well established. This may not be true. The document lacks guidance in this respect.	CD	-	Maj.	Agreed.
28.	General note - captions to tables are poor. For example 'Table 1 - could read 'Mock or Prototype cross-reference to process standard. Table 2 ' Life cycle processes cross reference to illustrative and functional deliverables'	CD	-	Maj.	Agreed.
29.	Editorial issue. Some bullet points have full stops and other do not.	CD	-	Min.	Agreed.
30.	Links to 12207 are missing . Roles and responsibilities need to be defined.	CD	-	Min.	Agreed
31.	'more common' More common than what? See also next paragraph is same section.	CD	B: Typical products	Min.	Agreed.
32.	'Acceptance ' rather than 'acceptation.	CD	B: Typical products :	Min.	Agreed.

USA

Comments on ballot for SC7 N1490:

USNB Position on PDTR Ballot on 14759, Software Life Cycle Model Tailored for Mock and Prototype, Dec 1995

Vote: No with comments

GENERAL COMMENTS

USA-1

The USNB wishes to compliment and thank SC7/WG7 for their dedicated work in producing this draft technical report.

USA-2

The title of the document appears to be misleading since it claims to tailor a software life cycle model for mock up and prototype, but provides no reference for a software cycle model. It should be noted that 12207 claims not to be a software life cycle model. Recommend that the title be: Guide for Information Technology -- Software life cycle processes – Mock up and prototype

TECHNICAL COMMENTS

USA-3

Section 1, Introduction: states "By analogy, with the use of these words in the aeronautical field, the distinction drawn by the French terms a s/w 'mock-up' ..." This sentence is cumbersome and difficult to follow. Suggested corrective action: Replace sentence with the following "Using this analogy, a software mock-up is defined as something that can not be piloted by users and is thrown away once its objective has been achieved. A software prototype is defined as something that can be piloted and is developed as a part of the final product."

USA-4

Section 1, Introduction. The author uses the term "distinction" to describe the mock-up/ prototype, Illustrative/functional, and demonstrative/operational pairs. but it appears that the author is really trying to define these items. Neither the distinction nor the definition is clear in the case of Illustrative/functional, and demonstrative/operational pairs (in the definitions section these are referred to as attributes). This material might better be left to section 5.2, definitions. Suggested corrective action: Define prototype and mock-up as suggested in item 1. Delete paragraph 2 and explicitly define illustrative, functional, demonstrative, and operational in section 5.2, definitions. Once defined, launch into the relationship aspects of these terms.

USA-5

Section 2 para. 1 states "This technical report applies to any project which uses incremental development." Section 9 Principles of incremental life-cycle states " ...These cycles can be represented in the form of spirals..." This is tantamount to stating that incremental life cycles equate to spiral life cycles and this is not the case. There is a class of life-cycles that apply incremental development but are not spiral. For example, many systems developed under the waterfall model use incremental development to deliver successive portions of the system's functionality. Suggested corrective action: Modify the scope statement para 1 to state "This technical report applies to any project that uses a spiral life cycle model for incremental development."

USA-6

section 3, Purpose states "the purpose of this technical report is not to provide the reader with a normative definition of a specific software life-cycle." This sentence could better be stated. Suggested corrective action: "This technical report does not provide the reader with a normative definition of a specific software life-cycle."

USA-7

Section 5.2 Definition: This section should define terms. This is not done. Suggested corrective action: Define Mock-up, prototype, illustrative, functional, demonstrative, operational prior to figure 1. Define 'operating environment technical components' (section 6)

USA-8

Section 6: states "...enabling them to correct crucial choices at a time ...". This sentence could be better stated. Suggested corrective action: "...enabling them to detect and correct deficiencies at a time..."

USA-9

Section 6 states "The mock-up is characterised by: ..." followed by a list of 4 bulleted items. The bulleted items are not characterisations. This section should be rewritten Suggested corrective action: "The mock-up is characterised by the following statements:

- 1) Not all features of the final product need be represented
- 2) The development environment (machine, language, and tools) need not be that of the final product but it must representative of the final product.
- 3) The operating environment technical components need not be that of the final product but it must be representative of the final product
- 4) It is acceptable to use a subset of the documentation normally used to document the full development life-cycle."

USA-10

Section 6 states "The prototype-up is characterised by: ..." followed by a list of 4 bulleted items. The bulleted items are not characterisations. This section should be rewritten

Suggested corrective action:

"The prototype is characterised by the following statements:

- 1) Not all features of the final product need be represented
- 2) The development environment (machine, language, and tools) is that of the final product
- 3) The operating environment technical components is that of the final product
- 4) document the full development life-cycle as if it were the final product."

USA-11

Sections 6,7, and 8 state "The link with the structure of software life cycle process standard ISO/IEC IS 12207 is proposed as follows...". This link is incomplete. Only Development Process, Quality Assurance Process, Validation process, and documentation process are addressed. Where are the links to the other items specified in 12207? The tailoring guidelines suggested by 12207 are not followed. Suggested corrective action: expand the link to address all aspects of 12207. Don't imply that this document addresses an entire life-cycle.

USA-12

Section 7 states "The notion of illustrative deliverable is characterised by ..." is an example, not a characterisation. Suggested corrective action: Provide the definition in section 5.2 and delete this reference. An example is useful to the reader, but it should be specified as such. Alternatively, state "The illustrative deliverable is characterised by its ability to demonstrate HCIs without providing the functionality of these HCIs"

USA-13

Section 7 states that "The function deliverable is characterised by "is an incomplete phrase. Suggested corrective action: Complete the sentence.

USA-14

Section 8: The definitions for demonstrative and operational are incorrectly stated. There is no chronological relationship. One does not necessarily evolve into the other.

USA-15

Section 8: The characterisations of the demonstrative and operational deliverables are not complete phrases. The operational deliverable uses the term 'awareness' in one of its characterisation. This needs to be defined within the context of this paper.

USA-16

Section 9: states "this technical report presents three imaginable examples of software life-cycles suitable for mock-up and prototype production...". The examples provided are not all software life-cycles.

USA-17

Section 9 example A: states "These cycles can be represented in the form of spirals..." This is not an accepted definition of the incremental life-cycle. This section does not provide details concerning a prototype life-cycle or the steps needed to implement a prototype life-cycle. It appears to contain a contradictory statement in that it specifically states that mock ups are throw-aways yet it states that mock-ups can be converted into prototypes.

USA-18

Section 9 example B is not a life-cycle but is rather a tool for identifying and correcting defects within in some other life-cycle model. The typical and atypical product definitions are not clear and need to be redefined.

USA-19

Section 9 example c does not reference prototyping and mock ups, but rather sub items of those processes.