

# Record of Line-item Letter Ballot Review by TC Chapter for Procedural Review

Region/Locale: **North America**

Global Technical Committee: **Information & Control**

TC Chapter Cochairs: **Brian Rubow (Cimetrix), Albert Fuchigami (PEER Group), James Moyne (AMAT / University of Michigan)**

Standards Staff: **Michelle Sun**

	Scheduled in Background Statement	Actual
Date	5/13/2026	5/13/2026
Location	Albany, NY	Albany, NY
Reason for Change of Date and/or Location (if changed)		

Note: Refer to *Regulations ¶ 9.5 Exceptions* for allowable reason to change.

## Document Information

### I. Document Number, Title, Lists of Line Items

	<b>Document Number</b> 7419A	<b>Document Title</b> Line-Item Revision to SEMI E120-1225 Specification for the Common Equipment Model (CEM), SEMI E120.2-1225 Specification for Protocol Buffers for Common Equipment Model (CEM), SEMI E125-1225 Specification for Equipment Self Description (EqSD), SEMI E125.2-1225 Specification for Protocol Buffers for Equipment Self Description (EqSD), SEMI E132-1225 Specification for Equipment Client Authentication and Authorization, SEMI E132.2-1225 Specification for Protocol Buffers for Equipment Client Authentication and Authorization (ECA), SEMI E134-1225 Specification for Data Collection Management, SEMI E134.2-1225 Specification for Protocol Buffers of Data Collection Management, and SEMI E179-1225 Specification for Protocol Buffers Common Components
List of Line	Line Item 1	<b>Line Item Title</b> Clarify StateMachineInstance usage
	Line Item 2	<b>Line Item Title</b> Update issues raised by TF members

## Line Item 1 Adjudication

### II. Tally

Standards staff to fill in.

**Voting Tally: As-cast tally after close of voting period**

**Note: A minimum of 60% of the Voting Interests that have TC Members within the global technical committee that issued the Letter Ballot must return Votes. (Regulations ¶ 9.6.2.1.1)**

Voting Interest:	Returned Votes		Distribution		Return Rate	
Letter Ballot	77	÷	126	=	61.11%	≥60%
Intercommittee Ballot	32					
Voting Interest Reject(s)	2		Total Voters with Rejects		2	
Voting Interest Accept(s)	64					

**Note: Refer to Regulations § 3.2.1 for definition of Voting Interest.**

### III. Rejects

**Voting Interest Reject 1 (Voting Interest Name: PDF Solutions)**

**Voter Reject 1 (Voter: Brain Rubow / PDF Solutions)**

**Negative 1**

<b>Negative</b>	<b>Referenced Section/ Paragraph</b>	<b>*TF/TC Chapter to fill in, including text in the ballot if necessary.</b>	
		11.3.1.2.5.1	
	<b>Negative Text</b>	<p><b>*Original complete Negative text (e.g., issue, justification, suggestion) should be copied.</b></p> <p>Negative #1 In section 11.3.1.2.5.1, the current version of SEMI E125 requires every state model to have one StateMachineReference. This is true regardless of the number of state model instances in the equipment. This is a simple requirement that is not subject to interpretation. The ballot proposes to remove this requirement by allowing state machines with one instance to not have a StateMachineReference and to have one StateMachineInstance instead. This adds confusion to implementers who would then have to decide what to implement.</p> <p>Section 11.6.8.2.5.1 gives an example referencing the E30 Control state model. If an equipment implements multiple host functionality, then it could have multiple control state models.</p>	
	<b>TF input (optional)</b>		
	<b>Withdrawal (check one)</b>	<input type="checkbox"/>	No Negative withdrawal made by Voter. <b>GO TO "Related" subsection</b>
		<input checked="" type="checkbox"/>	Withdrawal document received by Standards staff on 5/12/2026. <b>GO TO "Final" subsection → (A)</b>
<b>el R</b>	<b>Motion and Reason</b>	<input type="checkbox"/>	'Related' is mutually agreed upon. <b>(Needs no motion.) GO TO "Persuasive" subsection</b>

	(check one)	Negative is not related. (Needs $\geq 2/3$ votes to pass.)			
		Reason	XXXX		
	Motion by/ 2 <sup>nd</sup> by	Name (Company)/Name (Company)			
	Discussion				
Result of Vote (check one)	XX Y-XX N; Motion passed/failed.				
		[Negative is not related.] < 2/3	GO TO "Persuasive" subsection		
		$2/3 \leq$ [Negative is not related.]	GO TO "Final" subsection $\rightarrow$ (B)		
Motion and Reason (check one)	Negative is related and persuasive. (Needs >1/3 votes to pass.)				
	Negative is related and not persuasive. (Needs $\geq 2/3$ votes to pass.)				
		Reason			
	Motion by/ 2 <sup>nd</sup> by	Name (Company)/Name (Company)			
Result of Vote (check one)	Discussion				
	XX Y-XX N; Motion passed/failed.				
		[Negative is related and persuasive.] > 1/3	Is a technical change recommended? (check one)	Y	GO TO "Address by Technical Change Option" subsection
		[Negative is related and not persuasive.] < 2/3		N	GO TO "Final" subsection $\rightarrow$ (E)
		$2/3 \leq$ [Negative is related and not persuasive.] < 90%	GO TO "Final" subsection $\rightarrow$ (C)		
		$90\% \leq$ [Negative is related and not persuasive.]	GO TO "Not Significant Finding Option" subsection		
Address by Technical Change Option	<b>Technical Change Recommendations</b>				
	Original section/paragraph number and at least one full sentence are required in "FROM" and "TO" fields.				
	1	FROM: Section/Paragraph XXX			
		TO: Section/Paragraph xxx			
		Justification (if necessary)			
	2	FROM: Section/Paragraph XXX			
TO: Section/Paragraph xxx					
Justification (if necessary)					

	<b>Motion</b>	Negative is addressed by the technical change(s).		
	<b>Motion by/2<sup>nd</sup> by</b>	Name (Company)/Name (Company)		
	<b>Discussion</b>			
	<b>Result of Vote (check one)</b>	<input type="checkbox"/> 2/3 ≤ [Negative is addressed by the technical change(s).]	GO TO “Incorporation of the Technical Change” subsection	
		<input type="checkbox"/> [Negative is not addressed by the technical change(s).] < 2/3	GO TO “Final” subsection → (E)	
<b>Incorporation of the Technical Change</b>	<b>Motion</b>	To incorporate the technical change(s).		
	<b>Motion by/2<sup>nd</sup> by</b>	Name (Company)/Name (Company)		
	<b>Discussion</b>			
	<b>Result of Vote (check one)</b>	<input type="checkbox"/> XX Y-XX N; Motion passed/failed.		
<input type="checkbox"/> 90% ≤ [Agree to incorporate.]		GO TO “Final” subsection → (F)		
	<input type="checkbox"/> [Disagree to incorporate.] > 10%	GO TO “Final” subsection → (E)		
<b>Not Significant Finding Option</b>	This option can be used only “if the TC Chapter finds a Negative not persuasive by a vote equal to or greater than 90% of the persons voting on the action”. (Regulations ¶ 9.6.1.4.5.2)			
	<b>Use of “Not significant finding option” (check one)</b>	<input type="checkbox"/> It is mutually agreed upon to term the Negative “not significant”.	GO TO “Final” subsection → (D)	
		<input type="checkbox"/> It is mutually agreed upon to term the Negative “significant”.	GO TO “Final” subsection → (C)	
		<input type="checkbox"/> Whether or not the Negative is “not significant” is decided by a vote.		
	<b>Motion</b>	The Negative is “not significant”.		
	<b>Motion by/ 2<sup>nd</sup> by</b>	Name (Company)/Name (Company)		
<b>Vote</b>	<input type="checkbox"/> XX Y-XX N; Motion passed with simple majority	GO TO “Final” subsection → (D)		
	<input type="checkbox"/> XX Y-XX N; Motion failed with simple majority	GO TO “Final” subsection → (C)		
<b>Final</b>	<b>(check if applicable)</b>	<input checked="" type="checkbox"/> (A)	Withdrawn (counted under h in disposition)	
		<input type="checkbox"/> (B)	Not related (counted under i in disposition)	
		<input type="checkbox"/> (C)	Related and not persuasive (significant)	
		<input type="checkbox"/> (D)	Not significant (counted under j in disposition)	
		<input type="checkbox"/> (E)	Related and persuasive and not addressed by technical change	DOCUMENT FAILS
	<input type="checkbox"/> (F)	Addressed by technical change (counted under k disposition)		
<b>(check if applicable)</b>	<input type="checkbox"/>	Comment generated. Refer to Section V-(ii) Comment # X.		

### Disposition of Voting Interest Reject 1

Check only when the Document has not been failed.

1	Original number (#) of Negatives	(g)	
1	Number of Negatives withdrawn	(h)	
0	Number of Negatives found not related	(i)	
0	Number of Negatives found not significant	(j)	
0	Number of Negatives addressed by technical change ( <b>Negative becomes not significant</b> )	(k)	
Final	0	$g - (h + i + j + k) = 0$	Reject is Not Valid and is not included in the denominator of § VI. <b>Approval Conditions Check</b>
		$g - (h + i + j + k) > 0$	Reject is included in the denominator of § VI. <b>Approval Conditions Check</b>
		Reject without a Negative	Not Valid

## Voting Interest Reject 2 (Voting Interest Name: Doople)

### Voter Reject 1 (Voter: Hyungsu Kim / Doople)

#### Negative 1

Negative	Referenced Section/ Paragraph	<b>*TF/TC Chapter to fill in, including text in the ballot if necessary.</b>	
		N/A	
Negative	Negative Text	<p><b>*Original complete Negative text (e.g., issue, justification, suggestion) should be copied.</b></p> <p>A StateMachine is bound the moment it is referenced by the Equipment Node Description. A StateMachineReference(or Instance) is a set of Events and Parameters that can occur at a specific Node (Source ID). In other words, the StateMachine reports, via the DCP, which "Source ID" provides the Event and Parameter. (As an incorrect example, if E40-ProcessJob is referenced by LoadPort1, the Equipment would send the incorrect SourceID(LoadPort1) every time the Job is created or destroyed.)</p> <p>1. StateMachines that are created or destroyed instance(PJ, CJ, Carrier, Substrate) are bound by being referenced by a Logical Element (JobManager or MaterialManager)</p> <p>2. StateMachines that have dependencies on Equipment physical components are bound by being referenced by their respective independent Nodes (Source IDs). However, depending on the OEMs (Implementor), CarrierObjects (or Substrates) may be managed by the JobManager or managed dependently on each Load Port. This is already proven based on Freeze.2.</p> <p>There is no need to separate StateMachineReference and StateMachineInstance. Let's make the guideline above 1~3 in E164. Please, See the attached file. (7419A-E125_StateMachine.pdf)</p>	
	TF input (optional)		
Withdrawal (check one)	x	No Negative withdrawal made by Voter.	GO TO "Related" subsection
		Withdrawal document received by Standards staff on.	GO TO "Final" subsection → (A)
Related	Motion and Reason (check one)	x	'Related' is mutually agreed upon. (Needs no motion.)
			GO TO "Persuasive" subsection
			Negative is not related. (Needs ≥2/3 votes to pass.)

		Reason	XXXX				
	Motion by/ 2 <sup>nd</sup> by	Name (Company)/Name (Company)					
	Discussion						
	Result of Vote (check one)	XX Y-XX N; Motion passed/failed.					
		[Negative is not related.] < 2/3	GO TO "Persuasive" subsection				
		2/3 ≤ [Negative is not related.]	GO TO "Final" subsection → (B)				
Persuasive	Motion and Reason (check one)		Negative is related and persuasive. (Needs >1/3 votes to pass.)				
		x	Negative is related and not persuasive. (Needs ≥2/3 votes to pass.)				
		Reason	The StateMachineReference and StateMachineInstance structures exist in currently published SEMI E125 and are technically valid. There are use cases that cannot be supported with just one set of objects representing the state machine (as proposed by the voter). We need StateMachineReference (for state machines for dynamically created objects) and StateMachineInstance (for the static state model instances – i.e. someone wants to create a DCP against that specific state model instance)				
	Motion by/ 2 <sup>nd</sup> by	By: Albert Fuchigami / PEER Group Inc. Second: Brian Rubow / Cimetrix by PDF Solutions					
	Discussion	None					
	Result of Vote (check one)	10 Y-0 N; Motion passed/failed.					
			[Negative is related and persuasive.] > 1/3	Is a technical change recommended? (check one)		Y	GO TO "Address by Technical Change Option" subsection
		[Negative is related and not persuasive.] < 2/3			N	GO TO "Final" subsection → (E)	
		2/3 ≤ [Negative is related and not persuasive.] < 90%	GO TO "Final" subsection → (C)				
	x	90% ≤ [Negative is related and not persuasive.]	GO TO "Not Significant Finding Option" subsection				
Address by Technical Change Option	<b>Technical Change Recommendations</b>						
	Original section/paragraph number and at least one full sentence are required in "FROM" and "TO" fields.						
	1	FROM: Section/Paragraph XXX					
		TO: Section/Paragraph xxx					
Justification (if necessary)							
2	FROM: Section/Paragraph XXX						

		TO: Section/Paragraph xxx		
		Justification (if necessary)		
	Motion	Negative is addressed by the technical change(s).		
	Motion by/2 <sup>nd</sup> by	Name (Company)/Name (Company)		
	Discussion			
	Result of Vote (check one)	XX Y-XX N; Motion passed/failed.		
		<input type="checkbox"/> 2/3 ≤ [Negative is addressed by the technical change(s).]	GO TO "Incorporation of the Technical Change" subsection	
		<input type="checkbox"/> [Negative is not addressed by the technical change(s).] < 2/3	GO TO "Final" subsection → (E)	
Incorporation of the Technical Change	Motion	To incorporate the technical change(s).		
	Motion by/2 <sup>nd</sup> by	Name (Company)/Name (Company)		
	Discussion			
	Result of Vote (check one)	XX Y-XX N; Motion passed/failed.		
<input type="checkbox"/> 90% ≤ [Agree to incorporate.]		GO TO "Final" subsection → (F)		
<input type="checkbox"/> [Disagree to incorporate.] > 10%		GO TO "Final" subsection → (E)		
Not Significant Finding Option	This option can be used only "if the TC Chapter finds a Negative not persuasive by a vote equal to or greater than 90% of the persons voting on the action". (Regulations ¶ 9.6.1.4.5.2)			
	Use of "Not significant finding option" (check one)	<input checked="" type="checkbox"/> It is mutually agreed upon to term the Negative "not significant".	GO TO "Final" subsection → (D)	
		<input type="checkbox"/> It is mutually agreed upon to term the Negative "significant".	GO TO "Final" subsection → (C)	
		<input type="checkbox"/> Whether or not the Negative is "not significant" is decided by a vote.		
	Motion	The Negative is "not significant".		
	Motion by/ 2 <sup>nd</sup> by	Name (Company)/Name (Company)		
Vote	<input type="checkbox"/> XX Y-XX N; Motion passed with simple majority	GO TO "Final" subsection → (D)		
	<input type="checkbox"/> XX Y-XX N; Motion failed with simple majority	GO TO "Final" subsection → (C)		
Final	(check if applicable)	<input type="checkbox"/> (A)	Withdrawn (counted under h in disposition)	
		<input type="checkbox"/> (B)	Not related (counted under i in disposition)	
		<input type="checkbox"/> (C)	Related and not persuasive (significant)	
		<input checked="" type="checkbox"/> (D)	Not significant (counted under j in disposition)	
		<input type="checkbox"/> (E)	Related and persuasive and not addressed by technical change	DOCUMENT FAILS
		<input type="checkbox"/> (F)	Addressed by technical change (counted under k disposition)	
(check if applicable)	<input type="checkbox"/>	Comment generated. Refer to Section V-(ii) Comment # X.		

## Voting Interest Reject 2 (Voting Interest Name: Doople)

### Voter Reject 1 (Voter: Hyungsu Kim / Doople)

#### Negative 2

<b>Negative</b>	Referenced Section/ Paragraph	<b>*TF/TC Chapter to fill in, including text in the ballot if necessary.</b>				
	Negative Text	N/A  <b>*Original complete Negative text (e.g., issue, justification, suggestion) should be copied.</b> <b>(Reject2) SECSVarRef must be retained in the Parameters section of Figure 9. If it were deleted, a Class referencing SECSVarRef must be added to ParameterReference. This draft does not contain UML that includes SECSVarRef in ParameterReference. The same problem occurs when referencing ParameterReference in EquipmentNodeDescription, StateMachineReference, and StateMachineInstance. SECSVarRefType exists in the .proto file below. There is a lack of consistency throughout the document.</b>				
TF input (optional)						
<b>Withdrawal (check one)</b>	<input type="checkbox"/>	No Negative withdrawal made by Voter.		GO TO "Related" subsection		
	<input checked="" type="checkbox"/>	Withdrawal document received by Standards staff on 5/13/2026.		GO TO "Final" subsection → (A)		
<b>Related</b>	<b>Motion and Reason (check one)</b>	<input type="checkbox"/>	'Related' is mutually agreed upon. (Needs no motion.)		GO TO "Persuasive" subsection	
		<input type="checkbox"/>	Negative is not related. (Needs ≥2/3 votes to pass.)			
		Reason	XXXX			
	<b>Motion by/ 2<sup>nd</sup> by</b>	Name (Company)/Name (Company)				
	<b>Discussion</b>					
	<b>Result of Vote (check one)</b>	XX Y-XX N; Motion passed/failed.				
		<input type="checkbox"/>	[Negative is not related.] < 2/3		GO TO "Persuasive" subsection	
<input type="checkbox"/>		2/3 ≤ [Negative is not related.]		GO TO "Final" subsection → (B)		
<b>Persuasive</b>	<b>Motion and Reason (check one)</b>	<input type="checkbox"/>	Negative is related and persuasive. (Needs >1/3 votes to pass.)			
		<input type="checkbox"/>	Negative is related and not persuasive. (Needs ≥2/3 votes to pass.)			
		Reason				
	<b>Motion by/ 2<sup>nd</sup> by</b>					
	<b>Discussion</b>					
	<b>Result of Vote (check one)</b>	Y- N;				
<input type="checkbox"/>		[Negative is related and persuasive.] > 1/3	Is a technical change recommended? (check one)	<input type="checkbox"/>	Y GO TO "Address by Technical Change Option" subsection	

		<input type="checkbox"/>	[Negative is related and not persuasive.] < 2/3		<input type="checkbox"/>	N	GO TO "Final" subsection → (E)		
		<input type="checkbox"/>	2/3 ≤ [Negative is related and not persuasive.] < 90%	GO TO "Final" subsection → (C)					
		<input type="checkbox"/>	90% ≤ [Negative is related and not persuasive.]	GO TO "Not Significant Finding Option" subsection					
Address by Technical Change Option	<b>Technical Change Recommendations</b>								
	Original section/paragraph number and at least one full sentence are required in "FROM" and "TO" fields.								
	Technical Changes	1	FROM: Section/Paragraph XXX						
			TO: Section/Paragraph xxx						
			Justification (if necessary)						
		2	FROM: Section/Paragraph XXX						
			TO: Section/Paragraph xxx						
			Justification (if necessary)						
	Motion		Negative is addressed by the technical change(s).						
	Motion by/2 <sup>nd</sup> by		Name (Company)/Name (Company)						
	Discussion								
	Result of Vote (check one)		XX Y-XX N; Motion passed/failed.						
			<input type="checkbox"/>	2/3 ≤ [Negative is addressed by the technical change(s).]			GO TO "Incorporation of the Technical Change" subsection		
			<input type="checkbox"/>	[Negative is not addressed by the technical change(s).] < 2/3			GO TO "Final" subsection → (E)		
Incorporation of the Technical Change	Motion		To incorporate the technical change(s).						
	Motion by/2 <sup>nd</sup> by		Name (Company)/Name (Company)						
	Discussion								
	Result of Vote (check one)		XX Y-XX N; Motion passed/failed.						
			<input type="checkbox"/>	90% ≤ [Agree to incorporate.]			GO TO "Final" subsection → (F)		
<input type="checkbox"/>	[Disagree to incorporate.] > 10%			GO TO "Final" subsection → (E)					
Not Significant Finding Option	This option can be used only "if the TC Chapter finds a Negative not persuasive by a vote equal to or greater than 90% of the persons voting on the action". (Regulations ¶ 9.6.1.4.5.2)								
	Use of "Not significant finding option" (check one)		<input type="checkbox"/>	It is mutually agreed upon to term the Negative "not significant".			GO TO "Final" subsection → (D)		
			<input type="checkbox"/>	It is mutually agreed upon to term the Negative "significant".			GO TO "Final" subsection → (C)		

		Whether or not the Negative is “not significant” is decided by a vote.		
	<b>Motion</b>	The Negative is “not significant”.		
	<b>Motion by/ 2<sup>nd</sup> by</b>	Name (Company)/Name (Company)		
	<b>Vote</b>		XX Y-XX N; Motion passed with simple majority	GO TO “Final” subsection → (D)
		XX Y-XX N; Motion failed with simple majority	GO TO “Final” subsection → (C)	
<b>Final</b>	<b>(check if applicable)</b>	x	(A)	Withdrawn (counted under h in disposition)
			(B)	Not related (counted under i in disposition)
			(C)	Related and not persuasive (significant)
			(D)	Not significant (counted under j in disposition)
			(E)	Related and persuasive and not addressed by technical change
		(F)	Addressed by technical change (counted under k disposition)	
<b>(check if applicable)</b>		Comment generated. Refer to Section V-(ii) Comment # X.		

## Disposition of Voting Interest Reject 2

Check only when the Document has not been failed.

2	Original number (#) of Negatives	(g)	
1	Number of Negatives withdrawn	(h)	
0	Number of Negatives found not related	(i)	
1	Number of Negatives found not significant	(j)	
0	Number of Negatives addressed by technical change (Negative becomes not significant)	(k)	
<b>Final</b>	x	$g - (h + i + j + k) = 0$	Reject is Not Valid and is not included in the denominator of § VI. Approval Conditions Check
		$g - (h + i + j + k) > 0$	Reject is included in the denominator of § VI. Approval Conditions Check
		Reject without a Negative	Not Valid

Note: If all of the Negatives included with a Reject Vote are withdrawn, determined to be not related, or determined to be not significant, the Reject Vote is not valid. (Regulations ¶ 9.4.3.3)

Note: A Negative addressed by a technical change is automatically considered to be not significant. (Regulations ¶ 9.6.1.4.5.2)

## IV. Other Technical Issues

None

## V. Comments

None

### V- (i) Voters' Comments

None

### V-(ii) Comments Created by Handling Negative

None

## VI. Editorial Changes Other than Those Voted on in § V

None

## VII. Approval Conditions Check

### VII. - (i). Approval Rate

**APPROVAL CONDITION 1:** All Negatives have been discussed and were withdrawn, found not related, found not persuasive, or addressed by a technical change. (*Regulations ¶ 9.6.2.1.2*)

**APPROVAL CONDITION 2:** At least 90% of the sum of valid Voting Interest Accept and Voting Interest Reject Votes must be Accept. (*Regulations ¶ 9.6.2.1.3*)

**Note:** If both approval conditions are not satisfied, the Document fails.

		Accepts		(Accepts + Valid Rejects)			
Approval Rate	=	64		64	=	100%	≥90%

### VII. – (ii) Approval Level (check one)

**Note:** Refer to *Regulations § 9.6.2* for further information.

#### Globally Approved (No Ratification Ballot needed):

Line Item 1 meets the Letter Ballot approval conditions for the global technical committee.

#### Need a Ratification Ballot:

Line Item 1 meets the Letter Ballot approval conditions for the TC Chapter and a Ratification Ballot will be issued to validate technical changes.

## Line Item 2 Adjudication

### II. Tally

Standards staff to fill in.

Voting Interest:	Returned Votes		Distribution		Return Rate	
Letter Ballot	77	÷	126	=	61.11%	≥60%
Intercommittee Ballot	32					
Voting Interest Reject(s)	3		Total Voters with Rejects		3	
Voting Interest Accept(s)	65					

### III. Rejects

Voting Interest Reject 1 (Voting Interest Name: Zama Consulting)

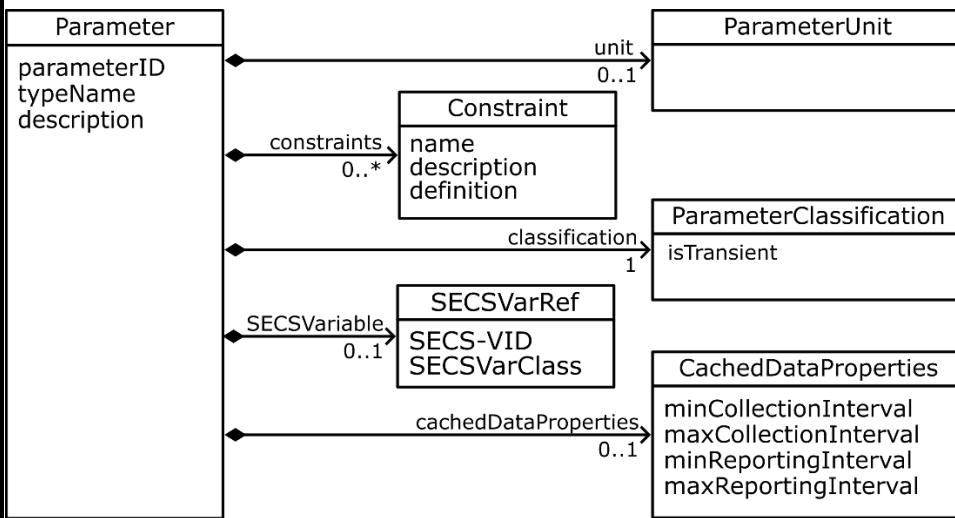
Voter Reject 1 (Voter: Mitch Sakamoto / Zama Consulting)

Negative 1

Negative	Referenced Section/ Paragraph	*TF/TC Chapter to fill in, including text in the ballot if necessary. Figure 9 of SEMI E125		
	Negative Text	*Original complete Negative text (e.g., issue, justification, suggestion) should be copied. Figure 9 in E125, Parameter Class should have SECSVarRef. Without that, SECS information is not given to the parameter.		
TF input (optional)				
Withdrawal (check one)	<input checked="" type="checkbox"/>	No Negative withdrawal made by Voter.	GO TO "Related" subsection	
	<input type="checkbox"/>	Withdrawal document received by Standards staff on	GO TO "Final" subsection → (A)	
Related	Motion and Reason (check one)	<input checked="" type="checkbox"/>	'Related' is mutually agreed upon. (Needs no motion.)	GO TO "Persuasive" subsection
		<input type="checkbox"/>	Negative is not related. (Needs ≥2/3 votes to pass.)	
		Reason	XXXX	
	Motion by/ 2 <sup>nd</sup> by	Name (Company)/Name (Company)		
	Discussion			
Result of Vote (check one)	<input type="checkbox"/>	XX Y-XX N; Motion passed/failed.		
	<input type="checkbox"/>	[Negative is not related.] < 2/3	GO TO "Persuasive" subsection	
	<input type="checkbox"/>	2/3 ≤ [Negative is not related.]	GO TO "Final" subsection → (B)	

Persuasive	Motion and Reason (check one)	<input checked="" type="checkbox"/>	Negative is related and persuasive. (Needs >1/3 votes to pass.)			
		<input type="checkbox"/>	Negative is related and not persuasive. (Needs ≥2/3 votes to pass.)			
		Reason				
	Motion by/ 2 <sup>nd</sup> by	By: Albert Fuchigami / PEER Group Inc. Second: Brian Rubow / Cimatrix by PDF Solutions				
	Discussion	None				
	Result of Vote (check one)	14 Y-0 N; Motion passed.				
<input checked="" type="checkbox"/>		[Negative is related and persuasive.] > 1/3	Is a technical change recommended? (check one)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	GO TO "Address by Technical Change Option" subsection
<input type="checkbox"/>		[Negative is related and not persuasive.] < 2/3		<input type="checkbox"/>	<input type="checkbox"/>	GO TO "Final" subsection → (E)
<input type="checkbox"/>		2/3 ≤ [Negative is related and not persuasive.] < 90%	GO TO "Final" subsection → (C)			
<input type="checkbox"/>		90% ≤ [Negative is related and not persuasive.]	GO TO "Not Significant Finding Option" subsection			
Address by Technical Change Option	<b>Technical Change Recommendations</b> Original section/paragraph number and at least one full sentence are required in "FROM" and "TO" fields.					
	Technical Changes	FROM: Section/Paragraph SEMI E125 Figure 9 <pre> classDiagram     class Parameter {         parameterID         typeName         description     }     class Constraint {         name         description         definition     }     class ParameterUnit {     }     class ParameterClassification {         isTransient     }     class CachedDataProperties {         minCollectionInterval         maxCollectionInterval         minReportingInterval         maxReportingInterval     }     Parameter "1" --&gt; "0..*" Constraint : constraints     Parameter "1" --&gt; "0..1" ParameterUnit : unit     Parameter "1" --&gt; "1" ParameterClassification : classification     Parameter "1" --&gt; "0..1" CachedDataProperties : cachedDataProperties </pre>				

**TO: Section/Paragraph SEMI E125 Figure 9**



**Justification (If necessary)**

Proposed Figure 9 did not include the SECSVarRef class and SECSVariable association link between that class and Parameter Class. This information is required since the SECSVariable association is specified as part of SEMI E125. The SECSVarRef class was unintentionally deleted in the proposed figure in the ballot, and this technical change adds it back.

<b>Motion</b>	Negative is addressed by the technical change(s).		
<b>Motion by/2<sup>nd</sup> by</b>	By: Albert Fuchigami / PEER Group Inc. Second: Harold Stokes / SCREEN		
<b>Discussion</b>	None		
<b>Result of Vote (check one)</b>	<input checked="" type="checkbox"/>	2/3 ≤ [Negative is addressed by the technical change(s).]	GO TO "Incorporation of the Technical Change" subsection
	<input type="checkbox"/>	[Negative is not addressed by the technical change(s).] < 2/3	GO TO "Final" subsection → (E)
<b>Incorporation of the Technical Change</b>	<b>Motion</b>	To incorporate the technical change(s).	
	<b>Motion by/2<sup>nd</sup> by</b>	By: Albert Fuchigami / PEER Group Inc. Second: Brian Rubow / Cimetrix by PDF Solutions	
	<b>Discussion</b>	None	
	<b>Result of Vote (check one)</b>	<input checked="" type="checkbox"/>	90% ≤ [Agree to incorporate.]
<input type="checkbox"/>		[Disagree to incorporate.] > 10%	GO TO "Final" subsection → (E)
<b>Not Significant Finding Option</b>	This option can be used only "if the TC Chapter finds a Negative not persuasive by a vote equal to or greater than 90% of the persons voting on the action". (Regulations ¶ 9.6.1.4.5.2)		
	<input type="checkbox"/>	It is mutually agreed upon to term the Negative "not significant".	GO TO "Final" subsection → (D)
	<input type="checkbox"/>	It is mutually agreed upon to term the Negative "significant".	GO TO "Final" subsection → (C)
	<input type="checkbox"/>	Whether or not the Negative is "not significant" is decided by a vote.	

	<b>Motion</b>	The Negative is “not significant”.		
	<b>Motion by/ 2<sup>nd</sup> by</b>	Name (Company)/Name (Company)		
	<b>Vote</b>	<input type="checkbox"/>	XX Y-XX N; Motion passed with simple majority	GO TO “Final” subsection → (D)
<input type="checkbox"/>		XX Y-XX N; Motion failed with simple majority	GO TO “Final” subsection → (C)	
<b>Final</b>	<b>(check if applicable)</b>	<input type="checkbox"/>	(A)	Withdrawn (counted under h in disposition)
		<input type="checkbox"/>	(B)	Not related (counted under i in disposition)
		<input type="checkbox"/>	(C)	Related and not persuasive (significant)
		<input type="checkbox"/>	(D)	Not significant (counted under j in disposition)
		<input type="checkbox"/>	(E)	Related and persuasive and not addressed by technical change
	<input checked="" type="checkbox"/>	(F)	Addressed by technical change (counted under k disposition)	
<b>(check if applicable)</b>	<input type="checkbox"/>	Comment generated. Refer to Section V-(ii) Comment # X.		

### Disposition of Voting Interest Reject 1

Check only when the Document has not been failed.

1	Original number (#) of Negatives	(g)	
0	Number of Negatives withdrawn	(h)	
0	Number of Negatives found not related	(i)	
0	Number of Negatives found not significant	(j)	
1	Number of Negatives addressed by technical change (Negative becomes not significant)	(k)	
<b>Final</b>	<input type="checkbox"/>	$g - (h + i + j + k) = 0$	Reject is Not Valid and is not included in the denominator of § VI. Approval Conditions Check
	<input type="checkbox"/>	$g - (h + i + j + k) > 0$	Reject is included in the denominator of § VI. Approval Conditions Check
	<input type="checkbox"/>	Reject without a Negative	Not Valid

### Voting Interest Reject 2 (Voting Interest Name: Kokusai Electric) Voter Reject 1 (Voter: Mitsuhiro Matsuda / Kokusai Electric)

#### Negative 1

<b>Negative</b>	<b>Referenced Section/ Paragraph</b>	*TF/TC Chapter to fill in, including text in the ballot if necessary.
	<b>Negative Text</b>	*Original complete Negative text (e.g., issue, justification, suggestion) should be copied. ¶11.4.2 suggests that SECS information should be present in Figure 9. However, there is a proposal to remove SECSVarRef from Figure 9. SECSVarRef in Complementary Files for E125.2 also exist. I believe that SECSVarRef is still needed.

<b>TF input (optional)</b>						
<b>Withdrawal (check one)</b>		<input checked="" type="checkbox"/>	No Negative withdrawal made by Voter.		GO TO "Related" subsection	
		<input type="checkbox"/>	Withdrawal document received by Standards staff on MM/DD/YYYY.		GO TO "Final" subsection → (A)	
<b>Related</b>	<b>Motion and Reason (check one)</b>	<input checked="" type="checkbox"/>	'Related' is mutually agreed upon. (Needs no motion.)		GO TO "Persuasive" subsection	
		<input type="checkbox"/>	Negative is not related. (Needs ≥2/3 votes to pass.)			
		<input type="checkbox"/>	Reason	XXXX		
	<b>Motion by/ 2<sup>nd</sup> by</b>	Name (Company)/Name (Company)				
	<b>Discussion</b>					
	<b>Result of Vote (check one)</b>	XX Y-XX N; Motion passed/failed.				
<input type="checkbox"/>		[Negative is not related.] < 2/3		<input type="checkbox"/>	GO TO "Persuasive" subsection	
<input type="checkbox"/>		2/3 ≤ [Negative is not related.]		<input type="checkbox"/>	GO TO "Final" subsection → (B)	
<b>Persuasive</b>	<b>Motion and Reason (check one)</b>	<input type="checkbox"/>	Negative is related and persuasive. (Needs >1/3 votes to pass.)			
		<input checked="" type="checkbox"/>	Negative is related and not persuasive. (Needs ≥2/3 votes to pass.)			
		<input type="checkbox"/>	Reason	Figure 9 is missing the SECSVarRef class and the SECSVariable association link for consistency. It was excluded by accident.  The issue has been corrected and incorporated into the Line Item Revision by Ballot 7419A Technical Change #1 – Correct SEMI E125 Figure 9		
	<b>Motion by/ 2<sup>nd</sup> by</b>	By: Albert Fuchigami / PEER Group Inc. Second: Brian Rubow / Cimetrix by PDF Solutions				
	<b>Discussion</b>	None				
	<b>Result of Vote (check one)</b>	15 Y-0 N; Motion passed.				
<input type="checkbox"/>		[Negative is related and persuasive.] > 1/3	<b>Is a technical change recommended? (check one)</b>	<input type="checkbox"/>	Y GO TO "Address by Technical Change Option" subsection	
<input type="checkbox"/>		[Negative is related and not persuasive.] < 2/3		<input type="checkbox"/>	N GO TO "Final" subsection → (E)	
<input type="checkbox"/>		2/3 ≤ [Negative is related and not persuasive.] < 90%	GO TO "Final" subsection → (C)			
<input checked="" type="checkbox"/>	90% ≤ [Negative is related and not persuasive.]	GO TO "Not Significant Finding Option" subsection				
<b>Address by Technical</b>	<b>Technical Change Recommendations</b>					
	Original section/paragraph number and at least one full sentence are required in "FROM" and "TO" fields.					
<b>ch</b>	<b>Te</b>	<b>1</b>	FROM: Section/Paragraph XXX			

		TO: Section/Paragraph <b>xxx</b>		
		Justification (if necessary)		
	2	FROM: Section/Paragraph <b>XXX</b>		
		TO: Section/Paragraph <b>xxx</b>		
		Justification (if necessary)		
Motion		Negative is addressed by the technical change(s).		
Motion by/2 <sup>nd</sup> by		Name (Company)/Name (Company)		
Discussion				
Result of Vote (check one)		XX Y-XX N; Motion passed/failed.		
		<input type="checkbox"/>	2/3 ≤ [Negative is addressed by the technical change(s).] GO TO “Incorporation of the Technical Change” subsection	
		<input type="checkbox"/>	[Negative is not addressed by the technical change(s).] < 2/3 GO TO “Final” subsection → (E)	
Incorporation of the Technical Change	Motion		To incorporate the technical change(s).	
	Motion by/2 <sup>nd</sup> by		Name (Company)/Name (Company)	
	Discussion			
	Result of Vote (check one)		XX Y-XX N; Motion passed/failed.	
<input type="checkbox"/>			90% ≤ [Agree to incorporate.] GO TO “Final” subsection → (F)	
<input type="checkbox"/>			[Disagree to incorporate.] > 10% GO TO “Final” subsection → (E)	
Not Significant Finding Option	This option can be used only “if the TC Chapter finds a Negative not persuasive by a vote equal to or greater than 90% of the persons voting on the action”. (Regulations ¶ 9.6.1.4.5.2)			
	Use of “Not significant finding option” (check one)	<input checked="" type="checkbox"/>	It is mutually agreed upon to term the Negative “not significant”. GO TO “Final” subsection → (D)	
		<input type="checkbox"/>	It is mutually agreed upon to term the Negative “significant”. GO TO “Final” subsection → (C)	
		<input type="checkbox"/>	Whether or not the Negative is “not significant” is decided by a vote.	
	Motion		The Negative is “not significant”.	
	Motion by/2 <sup>nd</sup> by		Name (Company)/Name (Company)	
	Vote		<input type="checkbox"/>	XX Y-XX N; Motion passed with simple majority GO TO “Final” subsection → (D)
<input type="checkbox"/>			XX Y-XX N; Motion failed with simple majority GO TO “Final” subsection → (C)	
Final (check if applicable)	<input type="checkbox"/>	(A)	Withdrawn (counted under h in disposition)	
	<input type="checkbox"/>	(B)	Not related (counted under i in disposition)	
	<input type="checkbox"/>	(C)	Related and not persuasive (significant)	

	<input checked="" type="checkbox"/>	(D)	Not significant (counted under j in disposition)
	<input type="checkbox"/>	(E)	Related and persuasive and not addressed by technical change
	<input type="checkbox"/>	(F)	Addressed by technical change (counted under k disposition)
(check if applicable)	<input type="checkbox"/>	Comment generated. See Section V-(ii) Comment # X.	

**Voting Interest Reject 2 (Voting Interest Name: Kokusai Electric)  
Voter Reject 1 (Voter: Mitsuhiro Matsuda / Kokusai Electric)**

**Negative 2**

Negative	Referenced Section/ Paragraph	*TF/TC Chapter to fill in, including text in the ballot if necessary. E125 §13.5	
	Negative Text	*Original complete Negative text (e.g., issue, justification, suggestion) should be copied. A DCP can consist of an EventRequest, a TraceRequest, a CachedDataRequest, and an ExceptionRequest. When a DCP includes a CachedDataRequest together with one or more additional Requests, the activation timing of the corresponding consumers may differ. In this case, it is specified that the same CachedDataReport shall be sent to both consumers. However, for reports other than the CachedDataReport, the behavior is not clearly specified. It is unclear whether each consumer should receive reports containing only the data generated after that consumer becomes active, or whether all consumers should receive reports starting from the data generated when the first consumer becomes active. If the previous implementation is correct, the use of the term “same NewData” is ambiguous.	
TF input (optional)			
Withdrawal (check one)	<input checked="" type="checkbox"/>	No Negative withdrawal made by Voter.	GO TO “Related” subsection
	<input type="checkbox"/>	Withdrawal document received by Standards staff on MM/DD/YYYY.	GO TO “Final” subsection → (A)
Related	Motion and Reason (check one)	<input checked="" type="checkbox"/>	‘Related’ is mutually agreed upon. (Needs no motion.) GO TO “Persuasive” subsection
		<input type="checkbox"/>	Negative is not related. (Needs ≥2/3 votes to pass.)
		Reason	XXXX
	Motion by/ 2 <sup>nd</sup> by		
	Discussion	None	
	Result of Vote (check one)	15 Y-0 N; Motion passed.	
<input type="checkbox"/>		[Negative is not related.] < 2/3	GO TO “Persuasive” subsection
<input type="checkbox"/>	2/3 ≤ [Negative is not related.]	GO TO “Final” subsection → (B)	

<b>Persuasive</b>	<b>Motion and Reason (check one)</b>	<input checked="" type="checkbox"/>	Negative is related and persuasive. <b>(Needs &gt;1/3 votes to pass.)</b>																																
		<input type="checkbox"/>	Negative is related and not persuasive. <b>(Needs ≥2/3 votes to pass.)</b>																																
		Reason																																	
	<b>Motion by/ 2<sup>nd</sup> by</b>	By: Albert Fuchigami / PEER Group Inc. Second: Brian Rubow / Cimetrix by PDF Solutions																																	
	<b>Discussion</b>	None																																	
<b>Result of Vote (check one)</b>	15 Y-0 N; Motion passed/failed.																																		
	<input checked="" type="checkbox"/>	[Negative is related and persuasive.] > 1/3	<b>Is a technical change recommended? (check one)</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>GO TO “Address by Technical Change Option” subsection</b>																													
	<input type="checkbox"/>	[Negative is related and not persuasive.] < 2/3		<input type="checkbox"/>	<input type="checkbox"/>	<b>GO TO “Final” subsection → (E)</b>																													
	<input type="checkbox"/>	2/3 ≤ [Negative is related and not persuasive.] < 90%	<b>GO TO “Final” subsection → (C)</b>																																
	<input type="checkbox"/>	90% ≤ [Negative is related and not persuasive.]	<b>GO TO “Not Significant Finding Option” subsection</b>																																
<b>Technical Change Recommendations</b>																																			
<b>Original section/paragraph number and at least one full sentence are required in “FROM” and “TO” fields.</b>																																			
<b>Address by Technical Change Option</b>	<b>Technical Changes</b>	<b>FROM: Section/Paragraph SEMI E134 Specification, Section 10.5.5</b>																																	
		<p>10.5.5 If the Client attempts to activate a DCP for a session that does not send operational messages, the equipment shall return a ‘Session does not send operational messages’ error. (That is, when the session was established, SEMI E132’s EstablishSession operation was called with operationalRecipients parameter is None.)</p> <p>10.5.6 <i>ActivatePlan Operation Arguments</i></p> <p><b>Table 33 ActivatePlan Argument Definitions</b></p> <table border="1"> <thead> <tr> <th><i>Argument</i></th> <th><i>Description</i></th> <th><i>Kind</i></th> <th><i>Form</i></th> </tr> </thead> <tbody> <tr> <td>planId</td> <td>Identifier for the requested plan.</td> <td>in</td> <td>Text, equal to a valid DCP id.</td> </tr> <tr> <td>activatedPlan</td> <td>Confirmation that the requested plan has been activated.</td> <td>out</td> <td>Structured data, of type DCPActivated, described in ¶ 10.8.4.</td> </tr> <tr> <td>error</td> <td>The Client submitting the DCP does not have sufficient privilege to activate the requested DCP.</td> <td>error</td> <td>Structured data, of type UnauthorizedOperation, described in ¶ 10.3.6.</td> </tr> <tr> <td>error</td> <td>The equipment does not recognize the requested planId.</td> <td>error</td> <td>Structured data, of type NoSuchPlan, described in ¶ 10.4.3.</td> </tr> <tr> <td>error</td> <td>The requested DCP is invalid. This can result from a revision to the metadata.</td> <td>error</td> <td>Structured data, of type InvalidPlan, described in ¶ 10.3.7.</td> </tr> <tr> <td>error</td> <td>The Client making the request has previously activated the same DCP.</td> <td>error</td> <td>Structured data, of type DCPIsActive, described in ¶ 10.8.3.</td> </tr> <tr> <td>error</td> <td>Session does not send operational messages</td> <td>error</td> <td>Text, shall include the text ‘Session does not send operational message’.</td> </tr> </tbody> </table>				<i>Argument</i>	<i>Description</i>	<i>Kind</i>	<i>Form</i>	planId	Identifier for the requested plan.	in	Text, equal to a valid DCP id.	activatedPlan	Confirmation that the requested plan has been activated.	out	Structured data, of type DCPActivated, described in ¶ 10.8.4.	error	The Client submitting the DCP does not have sufficient privilege to activate the requested DCP.	error	Structured data, of type UnauthorizedOperation, described in ¶ 10.3.6.	error	The equipment does not recognize the requested planId.	error	Structured data, of type NoSuchPlan, described in ¶ 10.4.3.	error	The requested DCP is invalid. This can result from a revision to the metadata.	error	Structured data, of type InvalidPlan, described in ¶ 10.3.7.	error	The Client making the request has previously activated the same DCP.	error	Structured data, of type DCPIsActive, described in ¶ 10.8.3.	error	Session does not send operational messages
<i>Argument</i>	<i>Description</i>	<i>Kind</i>	<i>Form</i>																																
planId	Identifier for the requested plan.	in	Text, equal to a valid DCP id.																																
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error	The Client submitting the DCP does not have sufficient privilege to activate the requested DCP.	error	Structured data, of type UnauthorizedOperation, described in ¶ 10.3.6.																																
error	The equipment does not recognize the requested planId.	error	Structured data, of type NoSuchPlan, described in ¶ 10.4.3.																																
error	The requested DCP is invalid. This can result from a revision to the metadata.	error	Structured data, of type InvalidPlan, described in ¶ 10.3.7.																																
error	The Client making the request has previously activated the same DCP.	error	Structured data, of type DCPIsActive, described in ¶ 10.8.3.																																
error	Session does not send operational messages	error	Text, shall include the text ‘Session does not send operational message’.																																

**TO: Section/Paragraph SEMI E134 Specification, Section 10.5.5**

10.5.5 If the Client attempts to activate a DCP for a session that does not send operational messages, the equipment shall return a ‘Session does not send operational messages’ error. (That is, when the session was established, SEMI E132’s EstablishSession operation was called with operationalRecipients parameter is None.)

10.5.6 If the Client attempts to activate a DCP that is already active for a different Client, and that active DCP has a CachedDataRequest that is in a state such that the activating Client never receives any data for it, the equipment shall return an ‘Activated DCP does not send Cached Data’ error and does not activate the DCP for that Client. (Any Clients that have previously activated the DCP are not impacted). This error allows the activating Client to understand it will never receive cached data for that DCP.

10.5.6.1 A DCP that has a CachedDataRequest that is not cyclical (isCyclical is false) and performs no more activities related to that CachedDataRequest never sends any data for that CachedDataRequest. (Refer to Table 81 CachedDataRequest Transition Definition, Transition 52 Enabled - NoState).

10.5.6.2 An active DCP that defines a start trigger that might never occur does not produce this error condition. For example, it is valid to activate a DCP that specifies an exception as its start trigger, and if the exception never occurs, the DCP does not start collecting data.

~~10.5.6~~ 10.5.7 ActivatePlan Operation Arguments

**Table 33 ActivatePlan Argument Definitions**

<i>Argument</i>	<i>Description</i>	<i>Kind</i>	<i>Form</i>
planId	Identifier for the requested plan.	in	Text, equal to a valid DCP id.
activatedPlan	Confirmation that the requested plan has been activated.	out	Structured data, of type DCPActivated, described in ¶ 10.8.4.
error	The Client submitting the DCP does not have sufficient privilege to activate the requested DCP.	error	Structured data, of type UnauthorizedOperation, described in ¶ 10.3.6.
error	The equipment does not recognize the requested planId.	error	Structured data, of type NoSuchPlan, described in ¶ 10.4.3.
error	The requested DCP is invalid. This can result from a revision to the metadata.	error	Structured data, of type InvalidPlan, described in ¶ 10.3.7.
error	The Client making the request has previously activated the same DCP.	error	Structured data, of type DCPIsActive, described in ¶ 10.8.3.
error	Session does not send operational messages	error	Text, shall include the text ‘Session does not send operational messages’.
<u>error</u>	<u>The equipment never sends cached data to the activating Client for the already active DCP.</u>	<u>error</u>	<u>Text, shall include the text ‘Activated DCP does not send Cached Data’ and the planId.</u>

**Justification (if necessary)**

ActivatePlan now returns new error ‘Activated DCP does not send Cached Data’ error when a Client attempts to activate a DCP with CachedDataRequest that is already active for another Client and that active DCP is in a state such that the activating Client never receives any cached data for it. This ensures the Client is properly notified of this condition and doesn’t wait to get data it will never receive.

**FROM: Section/Paragraph SEMI E134, Section 13.4.4.1**

13.4.4 Enabled — The DCP is performing cached data collection (refer to substate descriptions) as requested in a specific cached data request provided with the DCP. Refer to Table 81, the triggers for Transitions 45 and 47, for the conditions that result in entry to this state.

13.4.4.1 When the Client is the first to activate the DCP, the first set of cachedDataResults shall be collected immediately upon entering the Enabled state (per requirement specified in Table 81, Transition 48). If the same DCP is currently active for other Clients, the collection of the first cachedDataResults for this Client may include data collected prior to time the DCP was activated to allow for synchronization of the data sampling. In such a situation, the NewData report for this Client is sent early. Refer to ¶ 13.5.

**TO: Section/Paragraph SEMI E134, Section 13.4.4.1**

13.4.4 Enabled — The DCP is performing cached data collection (refer to substate descriptions) as requested in a specific cached data request provided with the DCP. Refer to Table 81, the triggers for Transitions 45 and 47, for the conditions that result in entry to this state.

13.4.4.1 When the Client is the first to activate the DCP, the first set of ~~cachedDataResults~~ requested data shall be collected immediately and cached upon entering the Enabled state (per requirement specified in Table 81, Transition 48). If the same DCP is currently active for other Clients, the collection of the first ~~cachedDataResults~~ requested data for this Client may include data collected prior to time the DCP was activated to allow for synchronization of the data sampling. In such a situation, the ~~NewData report~~ cached data for this Client is sent early. Refer to ¶ 13.5.

13.4.4.2 Subsequent ~~cachedDataResults~~ requested data are collected and cached at collection intervals (per requirement specified in Table 81, Transition 49) while the cached data request is active.

**Justification (if necessary)**

**Technical change makes it clear that the NewData report is not sent early and removes references to an object that does not exist (cachedDataResults). This removes confusion to the reader.**

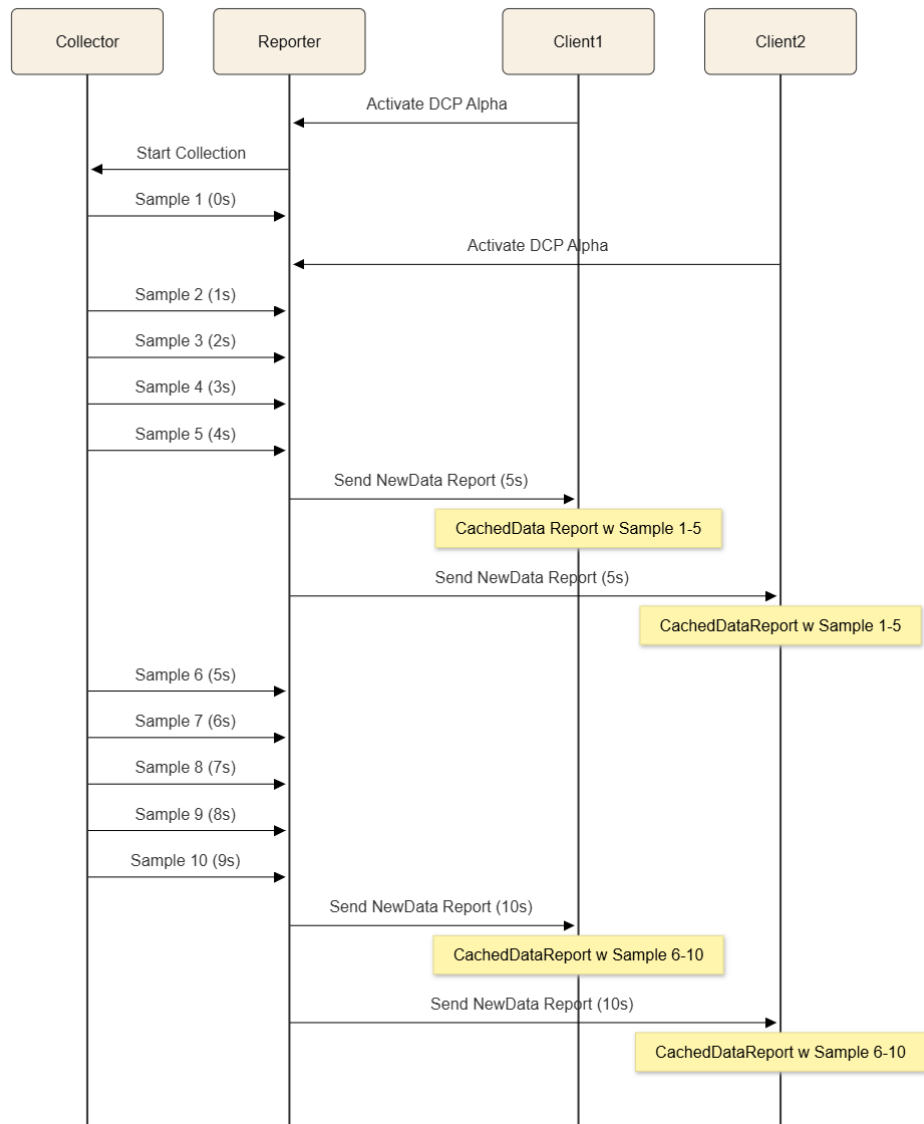
3 FROM: Section/Paragraph SEMI E134, Section 13.5

13.5 Reporting *Cached Data Results* — Cached Data results are reported as a *CachedDataReport* (refer to § 15.1.6).

13.5.1 If there are multiple Clients with the same *CachedDataReport* DCP enabled, each Client receives the same *NewData* message at the same reporting interval and trigger conditions per the first Client that activated the DCP.

13.5.1.1 Trying to maintain multiple sets of timers and trigger conditions to report data as if the DCPs are independent can result in a lot of complexity for implementers and performance impact on the Equipment Server.

13.5.2 Figure 26 illustrates an example of the collection and reporting sequence when Client1 and Client2 enable the same *Cached Data* DCP Alpha.



**Figure 26**  
Multiple Clients with the Same Active *CachedDataReport* DCP Example

13.5.2.1 If Client1 deactivates DCP Alpha, the Equipment Server continues to report data to Client2 because DCP Alpha is still active for Client2.

13.5.3 If a Client wants to be certain of obtaining DCP behavior based on the collection triggers from when that Client activates the DCP (rather than when the first Client activated it), the Client should ensure they are the first to activate the DCP.

13.5.3.1 Alternatively, a Client may use a unique DCP that is not already active. Clients should recognize the potentially greater performance impact this could have on the Equipment Server. Clients can check whether the DCP is active before attempting to activate it.

TO:

13.5 *Reporting Cached Data Results* — Cached Data results are reported as a `CachedDataReport` (refer to § 15.1.6).

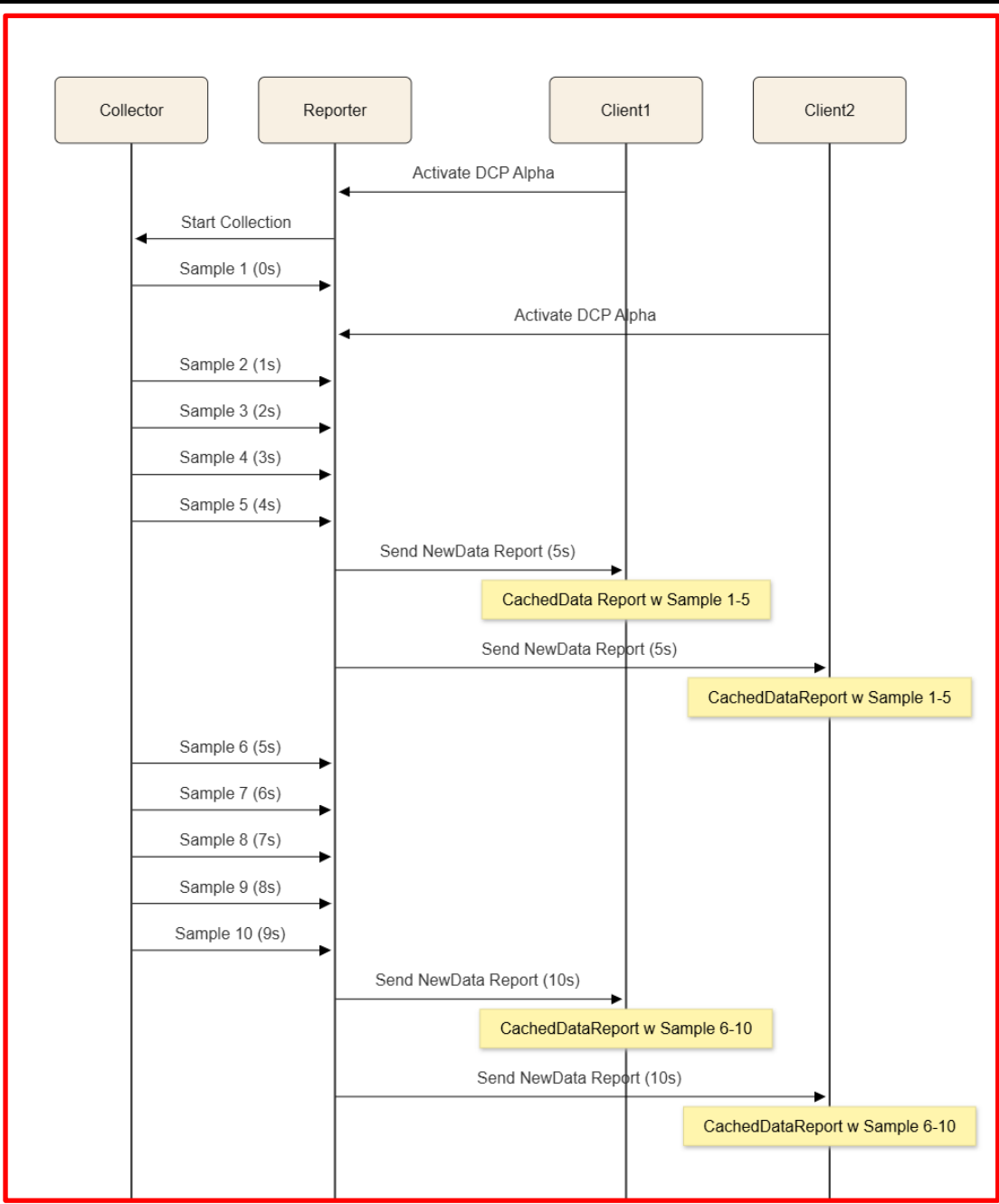
13.5.1 If there are multiple Clients with the same ~~`CachedDataReport`~~ DCP that has a `CachedDataRequest` enabled, each Client receives the ~~same~~ `a` `NewData` message with the same `CachedDataReport` at the same reporting interval and trigger conditions per the first Client that activated the DCP.

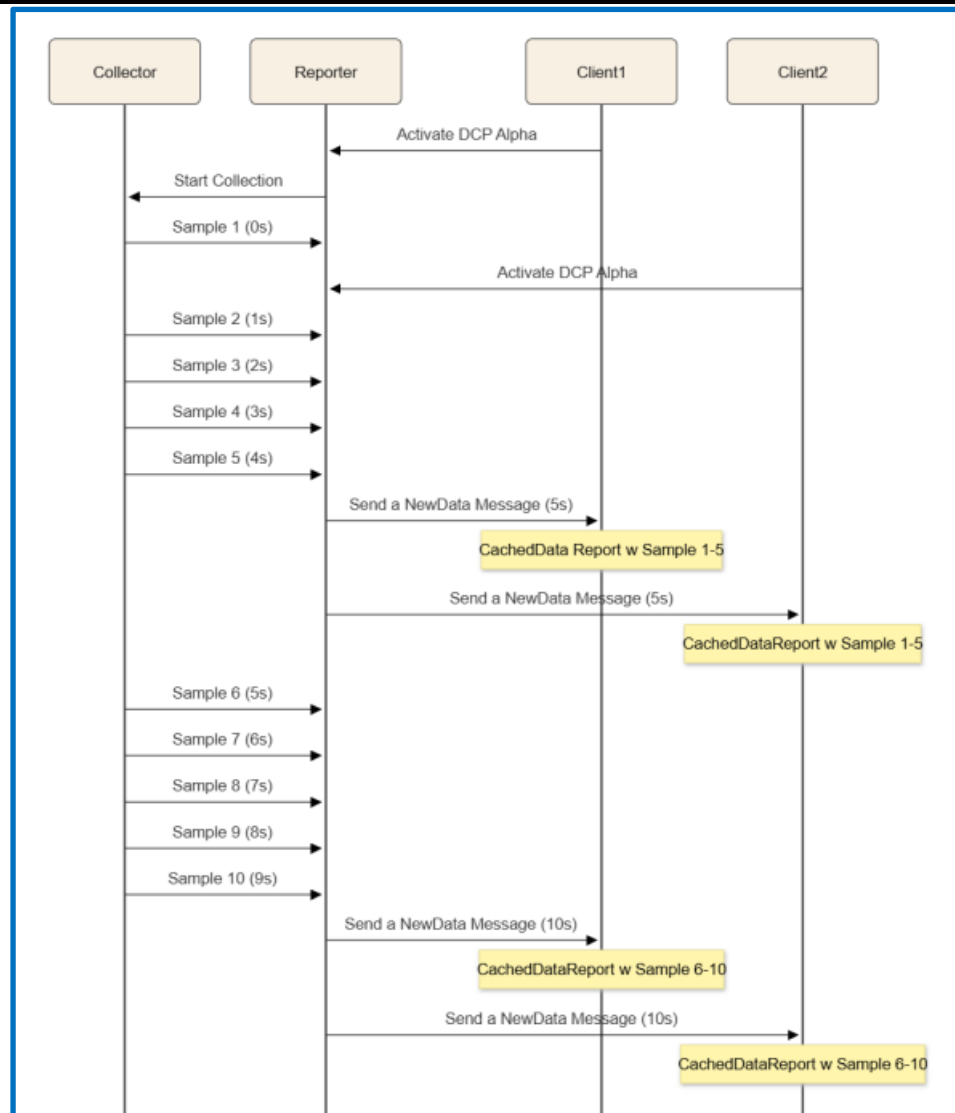
13.5.1.1 Trying to maintain multiple sets of timers and trigger conditions to report data as if the DCPs are independent can result in a lot of complexity for implementers and performance impact on the Equipment Server.

13.5.1.2 An implementation may choose to bundle multiple reports within a `NewData` message. If an implementation sends a `NewData` message that includes more than the same `CachedDataReport`, the other included reports are appropriate to the receiving Client.

13.5.1.2.1 For example, if the DCP defines both a `TraceRequest` and `CachedDataRequest` and the implementation bundles a `TraceReport` with the `CachedDataReport`, the `TraceReport` is appropriate for the receiving Client based on the trace request and trigger conditions that applied when the DCP was activated for that Client.

13.5.2 Figure 26 illustrates an example of the collection and reporting sequence when Client1 and Client2 enable the same ~~`Cached-Data`~~ DCP Alpha with a single `CachedDataRequest`.





**Figure 26**  
**Multiple Clients with the Same Active CachedDataReport DCP Example**

13.5.2.1 If Client1 deactivates DCP Alpha, the Equipment Server continues to report data to Client2 because DCP Alpha is still active for Client2.

13.5.3 If a Client wants to be certain of obtaining DCP behavior based on the collection triggers from when that Client activates the DCP (rather than when the first Client activated it), the Client should ensure they are the first to activate the DCP.

13.5.3.1 ~~Alternatively, a~~ A Client may use a unique DCP that is not already active to ensure it is the first to activate the DCP. Clients should recognize the potentially greater performance impact this could have on the Equipment Server. Clients can check whether the DCP is active before attempting to activate it.

**Justification:**

Proposed changes clarify expected behavior and remove confusion about the same NewData message being sent to multiple Clients.

**4 FROM: Section/Paragraph SEMI E134.2, Section 9.5.1**

From:

*9.5 SEMI E134 Operation Errors*

*9.5.1 Common Errors* — Table 4 below provides a mapping of the SEMI E134 defined errors to its common error code. The SEMI E134 mapped error codes below are in addition to any common error codes defined in SEMI E179, SEMI E132.2 and any errors defined by the equipment supplier. These error codes are reported with the SEMI E179's ErrorType structure or RPC Exceptions as outlined by SEMI E179.

[E134.02-RQ-00009-00] SEMI E134 error codes shall be denoted in the ErrorType structure by defining the 'source' name of 'urn:semi-org:E134'. [/RQ]

**Table 4 SEMI E134 Error Codes**

<i>SEMI E134 Error</i>	<i>Common Error Code</i>
InvalidPlan.	8000
NoSuchPlan.	8001
DCPIsActive.	8002
DCPNotActive.	8003
Session does not send operational messages	8004

**To: Section/Paragraph SEMI E134.2, Section 9.5.1**

*9.5 SEMI E134 Operation Errors*

*9.5.1 Common Errors* — Table 4 below provides a mapping of the SEMI E134 defined errors to its common error code. The SEMI E134 mapped error codes below are in addition to any common error codes defined in SEMI E179, SEMI E132.2 and any errors defined by the equipment supplier. These error codes are reported with the SEMI E179's ErrorType structure or RPC Exceptions as outlined by SEMI E179.

[E134.02-RQ-00009-00] SEMI E134 error codes shall be denoted in the ErrorType structure by defining the 'source' name of 'urn:semi-org:E134'. [/RQ]

**Table 4 SEMI E134 Error Codes**

<i>SEMI E134 Error</i>	<i>Common Error Code</i>
InvalidPlan.	8000
NoSuchPlan.	8001
DCPIsActive.	8002
DCPNotActive.	8003
Session does not send operational messages	8004
<a href="#">Activated DCP does not send Cached Data</a>	<a href="#">8005</a>

Justification:

- New error in Table 4 maps the new error defined in Primary Standard.

<b>Motion</b>	Negative is addressed by the technical change(s).
<b>Motion by/2<sup>nd</sup> by</b>	By: Albert Fuchigami / PEER Group Inc. Second: Brian Rubow / Cimatrix by PDF Solutions
<b>Discussion</b>	None
<b>Result of Vote</b>	11 Y-0 N; Motion passed/failed.

	<b>(check one)</b>	<input checked="" type="checkbox"/>	2/3 ≤ [Negative is addressed by the technical change(s).]	GO TO “Incorporation of the Technical Change” subsection
		<input type="checkbox"/>	[Negative is not addressed by the technical change(s).] < 2/3	GO TO “Final” subsection → (E)
<b>Incorporation of the Technical Change</b>	<b>Motion</b>	To incorporate the technical change(s).		
	<b>Motion by/2<sup>nd</sup> by</b>	By: Albert Fuchigami / PEER Group Inc. Second: Brian Rubow / Cimatrix by PDF Solutions		
	<b>Discussion</b>	None		
	<b>Result of Vote (check one)</b>	11 Y-0 N; Motion passed.		
<input checked="" type="checkbox"/>		90% ≤ [Agree to incorporate.]	GO TO “Final” subsection → (F)	
	<input type="checkbox"/>	[Disagree to incorporate.] > 10%	GO TO “Final” subsection → (E)	
<b>Not Significant Finding Option</b>	<b>This option can be used only “if the TC Chapter finds a Negative not persuasive by a vote equal to or greater than 90% of the persons voting on the action”. (Regulations ¶ 9.6.1.4.5.2)</b>			
	<b>Use of “Not significant finding option” (check one)</b>	<input type="checkbox"/>	It is mutually agreed upon to term the Negative “not significant”.	GO TO “Final” subsection → (D)
		<input type="checkbox"/>	It is mutually agreed upon to term the Negative “significant”.	GO TO “Final” subsection → (C)
		<input type="checkbox"/>	Whether or not the Negative is “not significant” is decided by a vote.	
	<b>Motion</b>	The Negative is “not significant”.		
	<b>Motion by/ 2<sup>nd</sup> by</b>	Name (Company)/Name (Company)		
	<b>Vote</b>	<input type="checkbox"/>	XX Y-XX N; Motion passed with simple majority	GO TO “Final” subsection → (D)
<input type="checkbox"/>		XX Y-XX N; Motion failed with simple majority	GO TO “Final” subsection → (C)	
<b>Final</b>	<b>(check if applicable)</b>	<input type="checkbox"/>	(A)	Withdrawn (counted under h in disposition)
		<input type="checkbox"/>	(B)	Not related (counted under i in disposition)
		<input type="checkbox"/>	(C)	Related and not persuasive (significant)
		<input type="checkbox"/>	(D)	Not significant (counted under j in disposition)
		<input type="checkbox"/>	(E)	Related and persuasive and not addressed by technical change
	<input checked="" type="checkbox"/>	(F)	Addressed by technical change (counted under k disposition)	
<b>(check if applicable)</b>	<input type="checkbox"/>	Comment generated. See Section V-(ii) Comment # X.		

## Disposition of Voting Interest Reject 2

Check only when the Document has not been failed.

2	Original number (#) of Negatives	(g)
0	Number of Negatives withdrawn	(h)
0	Number of Negatives found not related	(i)
1	Number of Negatives found not significant	(j)

1	Number of Negatives addressed by technical change ( <b>Negative becomes not significant</b> )		(k)
Final	x	$g - (h + i + j + k) = 0$	Reject is Not Valid and is not included in the denominator of § VI. <i>Approval Conditions Check</i>
		$g - (h + i + j + k) > 0$	Reject is included in the denominator of § VI. <i>Approval Conditions Check</i>
		Reject without a Negative	Not Valid

## Voting Interest Reject 3 (Voting Interest Name: Doople)

### Voter Reject 1 (Voter: Hyungsu Kim / Doople)

#### Negative 1

Negative	Referenced Section/ Paragraph	*TF/TC Chapter to fill in, including text in the ballot if necessary. E125 §13.5	
	Negative Text	*Original complete Negative text (e.g., issue, justification, suggestion) should be copied. Reject#1 Line Item 2 in E125 is not linked to other Line Item 2s in E120, E134, and E132. In the case of E125, despite having so many changes, I believe grouping them into a single Line Item Change is problematic according to standard Ballot procedures.	
TF input (optional)			
Withdrawal (check one)		No Negative withdrawal made by Voter.	GO TO "Related" subsection
		Withdrawal document received by Standards staff on MM/DD/YYYY.	GO TO "Final" subsection → (A)
Related	Motion and Reason (check one)	x	'Related' is mutually agreed upon. (Needs no motion.) GO TO "Persuasive" subsection
			Negative is not related. (Needs ≥2/3 votes to pass.)
		Reason	XXXX
	Motion by/ 2 <sup>nd</sup> by	Name (Company)/Name (Company)	
	Discussion		
Result of Vote (check one)		XX Y-XX N; Motion passed/failed.	
		[Negative is not related.] < 2/3	GO TO "Persuasive" subsection
		2/3 ≤ [Negative is not related.]	GO TO "Final" subsection → (B)
Persuasive	Motion and Reason (check one)		Negative is related and persuasive. (Needs >1/3 votes to pass.)
		x	Negative is related and not persuasive. (Needs ≥2/3 votes to pass.)

		Reason	The ballot as submitted is in line with SEMI Regulations. The changes proposed in the Line Item Revision are related to the Line Item topic of updating issues raised by TF members. It is possible that they could have been balloted separately or as separate line item revision since the proposed changes in each SEMI Standard do not rely on each other. This was not known when the SNARF was proposed. Proposing updates to the Standards within a single ballot and single line item revision is allowed per SEMI regulations.			
<b>Motion by/ 2<sup>nd</sup> by</b>	By: Albert Fuchigami / PEER Group Inc. Second: Harold Stokes / SCREEN					
<b>Discussion</b>	None					
<b>Result of Vote (check one)</b>	10 Y-0 N; Motion passed.					
	<input type="checkbox"/>	[Negative is related and persuasive.] > 1/3	<b>Is a technical change recommended? (check one)</b>	<input type="checkbox"/>	Y	GO TO "Address by Technical Change Option" subsection
	<input type="checkbox"/>	[Negative is related and not persuasive.] < 2/3		<input type="checkbox"/>	N	GO TO "Final" subsection → (E)
	<input type="checkbox"/>	2/3 ≤ [Negative is related and not persuasive.] < 90%				GO TO "Final" subsection → (C)
<input checked="" type="checkbox"/>	90% ≤ [Negative is related and not persuasive.]				GO TO "Not Significant Finding Option" subsection	
<b>Technical Change Recommendations</b>						
Original section/paragraph number and at least one full sentence are required in "FROM" and "TO" fields.						
<b>Address by Technical Change Option</b>	1	FROM: Section/Paragraph XXX				
		TO: Section/Paragraph xxx				
		Justification (if necessary)				
	2	FROM: Section/Paragraph XXX				
		TO: Section/Paragraph xxx				
		Justification (if necessary)				
<b>Motion</b>		Negative is addressed by the technical change(s).				
<b>Motion by/2<sup>nd</sup> by</b>		Name (Company)/Name (Company)				
<b>Discussion</b>						
<b>Result of Vote (check one)</b>	XX Y-XX N; Motion passed/failed.					
	<input type="checkbox"/>	2/3 ≤ [Negative is addressed by the technical change(s).]				GO TO "Incorporation of the Technical Change" subsection
<input type="checkbox"/>	[Negative is not addressed by the technical change(s).] < 2/3				GO TO "Final" subsection → (E)	
☐ -	<b>Motion</b>	To incorporate the technical change(s).				

	Motion by/2 <sup>nd</sup> by	Name (Company)/Name (Company)	
	Discussion		
	Result of Vote (check one)	<input checked="" type="checkbox"/> XX Y-XX N; Motion passed/failed.	
		<input type="checkbox"/> 90% ≤ [Agree to incorporate.]	GO TO “Final” subsection → (F)
		<input type="checkbox"/> [Disagree to incorporate.]>10%	GO TO “Final” subsection → (E)
Not Significant Finding Option	This option can be used only “if the TC Chapter finds a Negative not persuasive by a vote equal to or greater than 90% of the persons voting on the action”. (Regulations ¶ 9.6.1.4.5.2)		
	Use of “Not significant finding option” (check one)	<input checked="" type="checkbox"/>	It is mutually agreed upon to term the Negative “not significant”. GO TO “Final” subsection → (D)
		<input type="checkbox"/>	It is mutually agreed upon to term the Negative “significant”. GO TO “Final” subsection → (C)
		<input type="checkbox"/>	Whether or not the Negative is “not significant” is decided by a vote.
	Motion	The Negative is “not significant”.	
	Motion by/ 2 <sup>nd</sup> by	Name (Company)/Name (Company)	
Vote	<input type="checkbox"/>	XX Y-XX N; Motion passed with simple majority	GO TO “Final” subsection → (D)
	<input type="checkbox"/>	XX Y-XX N; Motion failed with simple majority	GO TO “Final” subsection → (C)
Final	(check if applicable)	<input type="checkbox"/>	(A) Withdrawn (counted under h in disposition)
		<input type="checkbox"/>	(B) Not related (counted under i in disposition)
		<input type="checkbox"/>	(C) Related and not persuasive (significant)
		<input checked="" type="checkbox"/>	(D) Not significant (counted under j in disposition)
		<input type="checkbox"/>	(E) Related and persuasive and not addressed by technical change DOCUMENT FAILS
		<input type="checkbox"/>	(F) Addressed by technical change (counted under k disposition)
	(check if applicable)	<input type="checkbox"/>	Comment generated. See Section V-(ii) Comment # X.

### Disposition of Voting Interest Reject 3

Check only when the Document has not been failed.

1	Original number (#) of Negatives	(g)	
0	Number of Negatives withdrawn	(h)	
0	Number of Negatives found not related	(i)	
1	Number of Negatives found not significant	(j)	
0	Number of Negatives addressed by technical change (Negative becomes not significant)	(k)	
Final	<input checked="" type="checkbox"/>	$g - (h + i + j + k) = 0$	Reject is Not Valid and is not included in the denominator of § VI. Approval Conditions Check
	<input type="checkbox"/>	$g - (h + i + j + k) > 0$	Reject is included in the denominator of § VI. Approval Conditions Check
	<input type="checkbox"/>	Reject without a Negative	Not Valid

## IV. Other Technical Issues

<b>Technical Issue</b>	<b>Origin</b>	*TF/TC Chapter to choose Other Technical Issue #4-1 Albert Fuchigami (PEER Group)/ A reason not addressed by a Vote response	
	<b>Referenced Section/ Paragraph</b>	*TF/TC Chapter to fill in including text in the ballot as appropriate. <b>E132.2 Section 10.4.4, 10.4.6</b>	
	<b>Reason</b>	<p>*Original Comment text, if applicable, and problem statement, including justification and suggestion, should be copied.</p> <p><b>Other Technical Issue #1 – SEMI E132.2 references Base64 Binary when talking about hashing IDs (SessionId and ClientId). This can be confusing to Standard Readers who may think the hashed value needs to be stored in Base64 Binary format, which contradicts expectations that the hashed value is hexadecimal representation stored in a string data type. (as stated per RQ 020 and 021.</b></p> <p>10.4.4 To help protect the SessionId, it is hashed with the SHA-256 hash algorithm (as specified in the Secure Hash Standard). The value of SessionId when it is hashed is based on Base64 Binary type. The SessionId is first converted to UTF-8 prior to applying the hash, and the hexadecimal representation of the hashed value is stored in a string data type. Hashed value comparisons are case-insensitive.</p> <p>[E132.02-RQ-00020-02] When sending SessionId information with gRPC metadata, the SessionId value shall be a hashed string. The key for the SessionId key-value pair shall be 'sessionidhash'. The value for the SessionId key-value pair shall be the hexadecimal representation of the SessionId hashed with SHA-256, stored in a string data type. [/RQ]</p> <p>10.4.6 The Consumer may be in a separate software application from the corresponding Client. It will require the ClientId so that it can respond to SessionPing messages from the Equipment Server properly. To help protect the ClientId in outgoing messages from the Equipment Server, it is hashed with the SHA-256 hash algorithm (as specified in the Secure Hash Standard). The value of ClientId when it is hashed is based on Base64 Binary type. The ClientId is first converted to UTF-8 prior to applying the hash, and the hexadecimal representation of the hashed value is stored in a string data type. Hashed value comparisons are case-insensitive.</p> <p>[E132.02-RQ-00021-02] When sending ClientId information with gRPC metadata, the ClientId value shall be a hashed string. The key for the ClientId key-value pair shall be 'clientidhash'. The value for the ClientId key-value pair shall be the hexadecimal representation of the ClientId hashed with SHA-256, stored in a string data type. [/RQ]</p>	
<b>Handle technical issue identified above as a Negative.</b>			
<b>Related</b>	<b>Motion and Reason (check one)</b>	x	'Related' is mutually agreed upon. <b>(Needs no motion.)</b> <b>GO TO "Persuasive" subsection</b>
			Negative is not related and assigned to TF. <b>(Needs ≥2/3 votes to pass.)</b>
			Negative is not related and placed on agenda of current TC Chapter meeting as new business. <b>(Needs ≥2/3 votes to pass.)</b>
		Reason	
	<b>Motion by/ 2nd by</b>		
	<b>Discussion</b>		
<b>Result of Vote (check one)</b>	Y- N; Motion passed.		
		[Negative is not related.] <2/3	<b>GO TO "Persuasive" subsection</b>
		2/3 ≤ [Negative is not related] and assigned to TF.	<b>GO TO "Final" subsection → (B)</b>
		2/3 ≤ [Negative is not related] and placed on agenda of current TC Chapter meeting as new business.	

<b>Persuasive</b>	<b>Motion and Reason (check one)</b>	<input checked="" type="checkbox"/>	Negative is related and persuasive. <b>(Needs &gt;1/3 votes to pass.)</b>				
		<input type="checkbox"/>	Negative is related and not persuasive. <b>(Needs ≥2/3 votes to pass.)</b>				
			Reason	Reference to Base64 Binary data type to store hashed ID values is not accurate and confusing given formal requirements to store hashed value in hexadecimal representation in a string data type.  These issues will be corrected with Ballot 7419A Technical Change #3 – Remove References to Base64 Binary Data Type For Hashed ID Values and make requirements for SessionId consistent			
	<b>Motion by/ 2<sup>nd</sup> by</b>	By: Albert Fuchigami / PEER Group Inc. Second: Alan Weber / Cimatrix					
	<b>Discussion</b>	None					
<b>Result of Vote (check one)</b>	12 Y-0 N; Motion passed.						
	<input checked="" type="checkbox"/>	[Negative is related and persuasive.] > 1/3	<b>Is a technical change recommended? (check one)</b>	<input checked="" type="checkbox"/>	Y	GO TO “Address by Technical Change Option” subsection	
	<input type="checkbox"/>	[Negative is related and not persuasive.] < 2/3		<input type="checkbox"/>	N	GO TO “Final” subsection → (E)	
	<input type="checkbox"/>	2/3 ≤ [Negative is related and not persuasive.] < 90%	GO TO “Final” subsection → (C)				
<b>Technical Change Recommendations</b>							
<b>Original section/paragraph number and at least one full sentence are required in “FROM” and “TO” fields.</b>							
<b>Address by Technical Change Option</b>	<b>Technical Changes</b>	1	<b>FROM: Section/Paragraph 9.8.3, 9.8.4</b>				
			9.8.3 The session identifier is specified in all requests to the Equipment Server over a SEMI E132 authenticated session. gRPC’s metadata infrastructure is used to pass the SessionId for gRPC methods. This provides the most transparent way of sending the session identifier without affecting the input/output parameters of the individual unary methods. gRPC metadata take name-value pairs and stores them in the HTTP/2 header data.  NOTE 6: For more information about gRPC’s metadata infrastructure, refer to SEMI E179, Related Information 2.				
			[E125.02-RQ-00014-00] SEMI E125 EquipmentMetadataManager and MetadataClient operations that are implemented as gRPC methods shall specify the SessionId with the gRPC metadata infrastructure. [/RQ]				
			9.8.4 To help protect the SessionId (which may be sent over a not secured connection), it is hashed with the SHA-256 hash algorithm (as specified in the Secure Hash Standard). The value of SessionId when it is hashed is based on Base64 Binary type. The SessionId is first converted to UTF-8 prior to applying the hash, and the hashed value is stored in a string data type.				
			[E125.02-RQ-00016-01] When sending SessionId information with gRPC metadata on the E125EquipmentMetadataConsumer service definition, The key for the SessionId name-value pair shall be ‘sessionidhash’ The value for the SessionId name-value pair shall be the SessionId hashed with SHA-256. [/RQ]				

**TO: Section/Paragraph 9.8.3, 9.8.4**

9.8.3 The session identifier is specified in all requests to the Equipment Server over a SEMI E132 authenticated session. gRPC’s metadata infrastructure is used to pass the SessionId for gRPC methods. This provides the most transparent way of sending the session identifier without affecting the input/output parameters of the individual unary methods. gRPC metadata take [namekey](#)-value pairs and stores them in the HTTP/2 header data.

NOTE 6: For more information about gRPC’s metadata infrastructure, refer to SEMI E179, Related Information 2.

[E125.02-RQ-00014-00] SEMI E125 EquipmentMetadataManager and MetadataClient operations that are implemented as gRPC methods shall specify the SessionId with the gRPC metadata infrastructure. [/RQ]

9.8.4 To help protect the SessionId (which may be sent over a not secured connection), it is hashed with the SHA-256 hash algorithm (as specified in the Secure Hash Standard). ~~The value of SessionId when it is hashed is based on Base64 Binary type.~~ The SessionId is first converted to UTF-8 prior to applying the hash, and the [hexadecimal representation of the](#) hashed value is stored in a string data type. [Comparisons of the hexadecimal string representation of these hashed values are case-insensitive.](#)

[E125.02-RQ-00016-~~01~~02] When sending SessionId information with gRPC metadata on the E125EquipmentMetadataConsumer service definition, The key for the SessionId [namekey](#)-value pair shall be ‘sessionidhash’ The value for the SessionId [namekey](#)-value pair shall be the [hexadecimal representation of the](#) SessionId hashed with SHA-256, [stored in a string data type.](#) [/RQ]

**Justification (if necessary)**

- Removing reference to Base64 Binary data type eliminates confusion about how implementers represent hashed id values.
- Make the SessionId representation consistent with how it is defined in SEMI E132.2
- Make terminology consistent with gRPC Standards. (e.g. consistent with SEMI E132.2)

**FROM: Section/Paragraph Section A1-2.6 Table A1-1 SEMI E125.2 Capability Requirements**

**Table A1-1 SEMI E125.2 Capability Requirements**

Section	RequirementID	Parent RequirementID	Condition/Selection Criteria	Compliance Codes (C/CWE/NC/WC/NA)
9.7.3	E125.02-RQ-00014-00	E125.02-RQ-00006-00	<none>	
9.7.4	E125.02-RQ-00016-01	E125.02-RQ-00006-00	<none>	
9.8.1	E125.02-RQ-00017-00		<none>	
<b>Capability: 11- Message Transport</b>				

2

**TO: Section/Paragraph Table A1-1 SEMI E125.2 Capability Requirements**

**Table A1-1 SEMI E125.2 Capability Requirements**

Section	RequirementID	Parent RequirementID	Condition/Selection Criteria	Compliance Codes (C/CWE/NC/WC/NA)
9.7.3	E125.02-RQ-00014-00	E125.02-RQ-00006-00	<none>	
9.7.4	E125.02-RQ-00016- <del>0102</del>	E125.02-RQ-00006-00	<none>	
9.8.1	E125.02-RQ-00017-00		<none>	

**Capability: 11- Message Transport**

**Justification (If necessary)**

- RequirementIDs in Table A1-1 need to match RequirementID in the document

**3 From: SEMI E132.2 Specification**

10.4.4 To help protect the SessionId (which may be sent over a not secured connection), it is hashed with the SHA-256 hash algorithm (as specified in the Secure Hash Standard). The value of SessionId when it is hashed is based on Base64 Binary type. The SessionId is first converted to UTF-8 prior to applying the hash, and the hexadecimal representation of the hashed value is stored in a string data type. Hashed value comparisons are case-insensitive.

[E132.02-RQ-00020-02] When sending SessionId information with gRPC metadata, the SessionId value shall be a hashed string. The key for the SessionId key-value pair shall be 'sessionidhash'. The value for the SessionId key-value pair shall be the hexadecimal representation of the SessionId hashed with SHA-256, stored in a string data type. [/RQ]

**To: SEMI E132.2 Specification**

10.4.4 To help protect the SessionId (which may be sent over a not secured connection), it is hashed with the SHA-256 hash algorithm (as specified in the Secure Hash Standard). ~~The value of SessionId when it is hashed is based on Base64 Binary type.~~ The SessionId is first converted to UTF-8 prior to applying the hash, and the hexadecimal representation of the hashed value is stored in a string data type. ~~Hashed value comparisons are case insensitive.~~ Comparisons of the hexadecimal string representation of these hashed values are case-insensitive.

[E132.02-RQ-00020-02] When sending SessionId information with gRPC metadata, the SessionId value shall be a hashed string. The key for the SessionId key-value pair shall be 'sessionidhash'. The value for the SessionId key-value pair shall be the hexadecimal representation of the SessionId hashed with SHA-256, stored in a string data type. [/RQ]

**Justification:**

- Removing reference to Base64 Binary data type eliminates confusion about how implementers represent hashed id values.

	<p><b>4 From: SEMI E132.2 Specification</b></p> <p>10.4.6 The Consumer may be in a separate software application from the corresponding Client. It will require the ClientId so that it can respond to SessionPing messages from the Equipment Server properly. To help protect the ClientId in outgoing messages from the Equipment Server (which may be sent over a not secured connection), it is hashed with the SHA-256 hash algorithm (as specified in the Secure Hash Standard). The value of ClientId when it is hashed is based on Base64 Binary type. The ClientId is first converted to UTF-8 prior to applying the hash, and the hexadecimal representation of the hashed value is stored in a string data type. Hashed value comparisons are case-insensitive.</p> <p>[E132.02-RQ-00021-02] When sending ClientId information with gRPC metadata, the ClientId value shall be a hashed string. The key for the ClientId key-value pair shall be 'clientidhash'. The value for the ClientId key-value pair shall be the hexadecimal representation of the ClientId hashed with SHA-256, stored in a string data type. [/RQ]</p>
	<p><b>To: SEMI E132.2 Specification</b></p> <p>10.4.6 The Consumer may be in a separate software application from the corresponding Client. It will require the ClientId so that it can respond to SessionPing messages from the Equipment Server properly. To help protect the ClientId in outgoing messages from the Equipment Server (which may be sent over a not secured connection), it is hashed with the SHA-256 hash algorithm (as specified in the Secure Hash Standard). <del>The value of ClientId when it is hashed is based on Base64 Binary type.</del> The ClientId is first converted to UTF-8 prior to applying the hash, and the hexadecimal representation of the hashed value is stored in a string data type. <del>Hashed value comparisons are case-insensitive.</del> <u>Comparisons of the hexadecimal string representation of these hashed values are case-insensitive.</u></p> <p>[E132.02-RQ-00021-02] When sending ClientId information with gRPC metadata, the ClientId value shall be a hashed string. The key for the ClientId key-value pair shall be 'clientidhash'. The value for the ClientId key-value pair shall be the hexadecimal representation of the ClientId hashed with SHA-256, stored in a string data type. [/RQ]</p>
	<p>Justification:</p> <ul style="list-style-type: none"> <li>• Removing reference to Base64 Binary data type eliminates confusion about how implementers represent hashed id values.</li> </ul>

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### Changes to SEMI E134.2 Specification

From:

9.8.3 The session identifier is specified in all requests to the Equipment Server over a SEMI E132 authenticated session. gRPC’s metadata infrastructure is used to pass the SessionId for gRPC methods. This provides the most transparent way of sending the session identifier without affecting the input/output parameters of the individual unary methods. gRPC metadata take name-value pairs and stores them in the HTTP/2 header data.

NOTE 5: For more information about gRPC’s metadata infrastructure, refer to SEMI E179, Related Information 2.

[E134.02-RQ-00014-00] SEMI E134 DataCollectionManager and DCPCConsumer operations that are implemented as gRPC methods shall specify the SessionId with the gRPC metadata infrastructure. [/RQ]

9.8.4 To help protect the SessionId (which may be sent over a not secured connection), it is hashed with the SHA-256 hash algorithm (as specified in the Secure Hash Standard). The value of SessionId when it is hashed is based on Base64 Binary type. The SessionId is first converted to UTF-8 prior to applying the hash, and the hashed value is stored in a string data type.

[E134.02-RQ-00016-01] When sending SessionId information with gRPC metadata, The key for the SessionId name-value pair shall be ‘sessionidhash’  
The value for the SessionId name-value pair shall be the SessionId hashed with SHA-256. [/RQ]

To:

9.8.3 The session identifier is specified in all requests to the Equipment Server over a SEMI E132 authenticated session. gRPC’s metadata infrastructure is used to pass the SessionId for gRPC methods. This provides the most transparent way of sending the session identifier without affecting the input/output parameters of the individual unary methods. gRPC metadata take namekey-value pairs and stores them in the HTTP/2 header data.

NOTE 5: For more information about gRPC’s metadata infrastructure, refer to SEMI E179, Related Information 2.

[E134.02-RQ-00014-00] SEMI E134 DataCollectionManager and DCPCConsumer operations that are implemented as gRPC methods shall specify the SessionId with the gRPC metadata infrastructure. [/RQ]

9.8.4 To help protect the SessionId (which may be sent over a not secured connection), it is hashed with the SHA-256 hash algorithm (as specified in the Secure Hash Standard). ~~The value of SessionId when it is hashed is based on Base64 Binary type.~~ The SessionId is first converted to UTF-8 prior to applying the hash, and the hexadecimal representation of the hashed value is stored in a string data type. Comparisons of the hexadecimal string representation of these hashed values are case-insensitive.

[E134.02-RQ-00016-~~01~~02] When sending SessionId information with gRPC metadata, The key for the SessionId namekey-value pair shall be ‘sessionidhash’  
The value for the SessionId namekey-value pair shall be the hexadecimal representation of the SessionId hashed with SHA-256, stored in a string data type. [/RQ]

Justification:

- Removing reference to Base64 Binary data type eliminates confusion about how implementers represent hashed values.
- Make the SessionId representation consistent with how it is defined in SEMI E132.2
- Make terminology consistent with gRPC Standards. (e.g. consistent with SEMI E132.2)

6

Section A1-2 Table A1-1 SEMI E134.2 Capability Requirements

From:

**Table A1-1 SEMI E134.2 Capability Requirements**

Section	RequirementID	Parent RequirementID	Condition/Selection Criteria	Compliance Codes (C/CWE/NC/WC/NA)
9.7.3	E134.02-RQ-00014-00	E134.02-RQ-00006-00	<none>	
9.7.4	E134.02-RQ-00016-01	E134.02-RQ-00006-00	<none>	
9.8.1.1	E134.02-RQ-00017-00		<none>	
9.9.1	E134.02-RQ-00018-00		<none>	
<b>Capability: 11 – Message Transport</b>				

To:

**Table A1-1 SEMI E134.2 Capability Requirements**

Section	RequirementID	Parent RequirementID	Condition/Selection Criteria	Compliance Codes (C/CWE/NC/WC/NA)
9.7.3	E134.02-RQ-00014-00	E134.02-RQ-00006-00	<none>	
9.7.4	E134.02-RQ-00016- <del>01</del> <u>02</u>	E134.02-RQ-00006-00	<none>	
9.8.1.1	E134.02-RQ-00017-00		<none>	
9.9.1	E134.02-RQ-00018-00		<none>	
<b>Capability: 11 – Message Transport</b>				

Justification:

- RequirementIDs in Table A1-1 need to match RequirementID in the document.

<b>Motion</b>		Negative is addressed by the technical change(s).	
<b>Motion by/2<sup>nd</sup> by</b>		By: Albert Fuchigami / PEER Group Inc. Second: Alan Weber / Cimetrix	
<b>Discussion</b>		None	
<b>Result of Vote (check one)</b>		12 Y-0 N; Motion passed.	
		<input checked="" type="checkbox"/> 2/3 ≤ [Negative is addressed by the technical change(s).]	GO TO "Incorporation of the Technical Change" subsection
		<input type="checkbox"/> [Negative is not addressed by the technical change(s).] < 2/3	GO TO "Final" subsection → (E)
<b>Incorporation of the</b>	<b>Motion</b>	To incorporate the technical change(s).	
	<b>Motion by/2<sup>nd</sup> by</b>	By: Albert Fuchigami / PEER Group Inc. Second: Takayuki Nishimura / SCREEN	
	<b>Discussion</b>		
		13 Y-0 N; Motion passed.	

		<b>Result of Vote (check one)</b>	<input checked="" type="checkbox"/> 90% ≤ [Agree to incorporate.]	<b>GO TO "Final" subsection → (F)</b>	
			[Disagree to incorporate.] >10%	<b>GO TO "Final" subsection → (E)</b>	
<b>Final</b>	<b>(check one)</b>		<b>(B)</b>	Not related	
			<b>(C)</b>	Related and not persuasive	
			<b>(E)</b>	Related and persuasive and not addressed by technical change	<b>DOCUMENT FAILS</b>
		<input checked="" type="checkbox"/>	<b>(F)</b>	Addressed by technical change	
	<b>(check if applicable)</b>		Comment generated. See Section V-(ii) Comment # X.		

## V. Comments

### V- (i) Voters' Comments

#### Comment (Created by Handling Negative) NC – 1

<b>Comment</b>	<b>*TF/TC Chapter to fill in</b>		
	Comment 2-1 Mitsuhiro Matsuda (Kokusai Electric)		
	All .proto files		
	In this Draft Document, some sections expand the acronym "SEMI" as "Semiconductor Equipment and Materials International." That was the organization's former name. Its current official name is simply "SEMI." These references should be corrected. I believe this can be handled as a Type 1 Editorial Change.		
<b>Action</b>	<b>The TC Chapter agreed to do one of the following actions.</b>		
	<b>*No motion is required in this step.</b>		
		Already addressed by Commenter #, Comment #	
		No further action was taken by the TC Chapter.	
		Refer to the TF for more consideration.	
		New business	
	<input checked="" type="checkbox"/>	Editorial change	
	Options for editorial change <b>(check one)</b>		<b>Case 1: No vote in this section:</b>
			<b>To be included and voted on as a group in § VI. Editorial Changes Other than Those Voted on in § V.</b>
	<input checked="" type="checkbox"/>		<b>Case 2: Voted in this section:</b>
			<b>Original section number and at least one full sentence are required in "FROM" and "TO" fields.</b>

Editorial Changes	1	<p><b>FROM: Section/Paragraph Every .proto file</b></p> <p>// By publication of this standard, Semiconductor Equipment and Materials International (SEMI) takes no position respecting the validity of any patent rights or copyrights asserted in connection with any items mentioned in this standard. Users of this standard are expressly advised that determination of any such patent rights or copyrights, and the risk of infringement of such rights are entirely their own responsibility.</p>							
		<p><b>TO: Section/Paragraph Every .proto file</b></p> <p>// By publication of this standard, <del>Semiconductor Equipment and Materials International</del> (SEMI) takes no position respecting the validity of any patent rights or copyrights asserted in connection with any items mentioned in this standard. Users of this standard are expressly advised that determination of any such patent rights or copyrights, and the risk of infringement of such rights are entirely their own responsibility.</p>							
		<p><b>Justification (If necessary)</b></p> <p>Semiconductor Equipment and Materials International." This was the organization's former name. Its current official name is simply "SEMI." These comments should be corrected to remove the organization's former name.</p>							
		<table border="1"> <tr> <td><b>Motion</b></td> <td>To approve above editorial change(s)</td> </tr> <tr> <td><b>Motion by/2<sup>nd</sup> by</b></td> <td>By: Albert Fuchigami / PEER Group Inc. Second: Takayuki Nishimura / SCREEN Semiconductor Solutions Co., Ltd.</td> </tr> <tr> <td><b>Discussion</b></td> <td>None</td> </tr> <tr> <td><b>Vote</b></td> <td>11 Y-0 N; Motion passed.</td> </tr> </table>	<b>Motion</b>	To approve above editorial change(s)	<b>Motion by/2<sup>nd</sup> by</b>	By: Albert Fuchigami / PEER Group Inc. Second: Takayuki Nishimura / SCREEN Semiconductor Solutions Co., Ltd.	<b>Discussion</b>	None	<b>Vote</b>
<b>Motion</b>	To approve above editorial change(s)								
<b>Motion by/2<sup>nd</sup> by</b>	By: Albert Fuchigami / PEER Group Inc. Second: Takayuki Nishimura / SCREEN Semiconductor Solutions Co., Ltd.								
<b>Discussion</b>	None								
<b>Vote</b>	11 Y-0 N; Motion passed.								

## V-(ii) Comments Created by Handling Negative

## VI. Editorial Changes Other than Those Voted on in § V

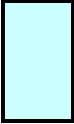
### VII. Approval Conditions Check

#### VII. - (i). Approval Rate

		Accepts		(Accepts + Valid Rejects)				
Approval Rate	=	64		64	=	100%		≥90%

#### VII. – (ii) Approval Level (check one)

Note: Refer to Regulations § 9.6.2 for further information.



**Globally Approved (No Ratification Ballot needed):**

Line Item 2 meets the Letter Ballot approval conditions for the global technical committee.



**Need a Ratification Ballot:**

Line Item 2 meets the Letter Ballot approval conditions for the TC Chapter and a Ratification Ballot will be issued to validate technical changes.

## Checks for Entire Document Including All Approved Line Items

### VIII. Safety Check

**Note:** This Safety check applies to the entire Standard or Safety Guideline including all the approved Line Items. Refer to § 15 of the Regulations for further information.

<b>Motion</b>	<input checked="" type="checkbox"/>	<b>This is not a Safety Document</b> , when all safety-related information is removed, the Document is still technically sound and complete. ( <i>Regulations</i> ¶ 8.7.1)
	<input type="checkbox"/>	<b>This is a Safety Document</b> , when all safety-related information is removed, the Document is not technically sound and complete. ( <i>Regulations</i> ¶ 8.7.2)
	<input type="checkbox"/>	Safety Checklist ( <i>Regulations</i> ¶ 15.3) is complete and has been included with the Document throughout the balloting process. ( <i>Regulations</i> ¶ 15.1.2)
<b>Motion by/2<sup>nd</sup> by</b>	By: Albert Fuchigami / PEER Group Inc. Second: Harold Stokes / SCREEN	
<b>Discussion</b>	None	
<b>Vote</b>	13 Y-0 N; Motion passed or failed	

### IX. Intellectual Property (IP) Check

<input checked="" type="checkbox"/>	The TC Chapter meeting chair asked those participating, if they were aware of any patented technology that might be relevant (see <i>Regulations</i> ¶ 16.3.1.1) to the Standard or Safety Guideline; or, any copyrighted items or trademarks that are used/reproduced (see <i>Regulations</i> ¶ 16.4.1.2) in the Standard or Safety Guideline. (Also see, <i>Regulations</i> § 8.8)			
<input type="checkbox"/>	The question is NOT answered in affirmative (No potentially material patented technology or use/reproduction of copyrighted items/trademarks is known.)	<b>GO TO SECTION X.</b>		
<input checked="" type="checkbox"/>	The question is answered in affirmative	Is any of the known IPs a patented technology?	<input checked="" type="checkbox"/>	<b>Yes, at least one of them is a patented technology</b>
			<input type="checkbox"/>	<b>No</b>
				<b>GO TO IX (a) "Patented Technology" subsection</b>
				<b>GO TO IX (b) "Copyright items" subsection</b>

#### IX(a) Patented Technologies subsection

##### IX(a1) Total numbers of Patented Technologies to be dealt with

<b>1</b> Fill number	(l) Known Patented Technology that might be relevant to the Standard/Safety Guideline	<b>0</b> Fill number	(m) Number of patented technologies first became known to the TC Chapter on or after the day of the issuance of this Letter Ballot	<b>Postpone assessment of such patented technologies to be performed at the next scheduled TC Chapter meeting.</b>
		<b>1</b> Fill number	(n) Number of patented technologies first became known to	

		the TC Chapter before the day of the issuance of this Letter Ballot	
--	--	---	--

### IX(a2) Assessment of disclosed patented technologies

<b>Disclosed patented technology #1</b> <u><a href="#">Asyst Patent Application</a></u> <u><a href="#">Mutli-protocol multi-client equipment server</a></u> <u><a href="#">Automation Job Management</a></u> <u><a href="#">Automated tool management in a multi-protocol environment</a></u> <u><a href="#">Apparatus and method for web-based tool management</a></u>  NON-ASSERTION AGREEMENT (LOA) between SEMI and Asyst Technologies has been signed with for US Patents #11/340101, #11/107508, #09/899833, and 09/496009, in 2008.		<b>Date of Assessment (If different from the date of Letter Ballot adjudication)</b> 12/1/2007				
Is disclosed patented technology #1 found to be "might be material" to the Standard/Safety Guideline?	<b>x</b>	YES (It is a PMPT)	Is the use of this PMPT technically justified?	<b>x</b>	YES	<b>PROCEED to assess NEXT one, or if this is the last one, GO TO IX(a3)</b>
					NO	<b>The Document is failed and returned to the TF</b>
		NO	No further action is needed for patented technology #1			

*This table is needed for each disclosed patented technology.*

### IX(a3) LOA status check of PMPT of which inclusion assessed to be justified

<b>LOA Status of PMPT #1</b>						
Has an LOA for this patented technology been received from every owner ?	<b>x</b>	YES	<b>PROCEED to check NEXT one, or if this is the last one, GO TO IX(b)</b>			
		NO	MOTION	Ask ISC for special permission to publish.		
				Quit activity.	<b>The Document is failed and returned to the TF</b>	
		Wait for LOA		<b>PROCEED to check NEXT one, or if this is the last one, GO TO IX(b1)</b>		
			<b>Motion by/ 2<sup>nd</sup> by</b>	Name (Company)/Name (Company)		
			<b>Discussion</b>	XXXX		
			<b>Vote</b>	XX Y-XX N; Motion passed (or failed)		

*This table is needed for each PMPT of which inclusion assessed to be justified.*

### IX(b1) Total numbers of copyrighted items to be dealt with

0 Fill number	(o) Known copyrighted items that are used or reproduced to the Standard/Safety Guideline	o > 0	There is at least one known copy righted items that might be relevant to the Standard/Safety Guideline	GO TO IX (b2)
		x	o = 0 There is no disclosed copyrighted item	GO TO IX (c)

### IX(b2) Assessment of disclosed copyrighted items

<b>Disclosed copyrighted item #1</b> (Brief description of its use in the Document):					
Is disclosed copyrighted item #1 used or reproduced in the Standard/Safety Guideline?	YES	Is the use/reproduction of this copyrighted item technically justified?	YES	PROCEED to assess NEXT one, or if this is the last one, GO TO IX(b3)	
			NO	The Document is failed and returned to the TF	
	NO	No further action is needed for copyrighted item #1			

This table is needed for each disclosed copyrighted item.

### IX(b3) Copyright release status check of copyrighted item of which inclusion assessed to be justified

<b>Copyright release Status of copyrighted item #1</b>					
Has the copyright release been received from its owner ?.	YES	PROCEED to assess NEXT one, or if this is the last one, GO TO IX(c)			
	NO	MOTION	Ask ISC for special permission to publish.		
			Quit activity.	The Document is failed and returned to the TF	
			Wait for copyright release letter	PROCEED to check NEXT one, or if this is the last one, GO TO IX(c)	
		Motion by/ 2 <sup>nd</sup> by	Name (Company)/Name (Company)		
		Discussion	XXXX		
		Vote	XX Y-XX N; Motion passed (or failed)		

This table is needed for each copyrighted item of which use/reproduction assessed to be justified.

### IX(c) Assessment of disclosed (identified) trademark

Is there any trademark in the Standard/Safety Guideline?	x	YES	Is every instance of trademark use technically justified?	x	YES	GO TO IX(d)
				NO	The Document is failed and returned to the TF	
		NO	GO TO IX(d)			

**IX(d) IP check completion condition check**

The co-chair checks if any Patented Technologies first become known to the TC Chapter on or after the day of the issuance of this Letter Ballot? i.e., m>0 in IX(a1)		YES	Sections IX(a2) and IX(a3) shall be completed and recorded for such patented technologies at next scheduled meeting of the TC Chapter. Until then, the TC Chapter shall NOT go to X (making motion to pass/fail this Document) (see <i>Regulations ¶ 16.4.1.2</i> ) Until then this Letter Ballot Review is on hold.
	<input checked="" type="checkbox"/>	NO	GO TO X

**X. Action for This Document**

<b>Motion (Check all applicable items)</b>	<input checked="" type="checkbox"/>	Line item(s) [1] passed TC Chapter review as balloted and will be forwarded to the ISC A&R SC for procedural review.
	<input type="checkbox"/>	Line item(s) [X] passed TC Chapter review with editorial changes and will be forwarded to the ISC A&R SC for procedural review.
	<input checked="" type="checkbox"/>	Line item(s) [2] passed TC Chapter review with technical changes and with or without editorial changes and will be forwarded to the ISC A&R SC for procedural review. A Ratification Ballot will be issued to verify the technical changes.
	<input type="checkbox"/>	Line item(s) [X], [X] and [X] failed TC Chapter review and will be returned to the TF for rework.
	<input type="checkbox"/>	Line item(s) [X], [X] and [X] failed TC Chapter review and work will be discontinued.
<b>Motion by/ 2nd by</b>	By: Albert Fuchigami / PEER Group Inc. Second: Takayuki Nishimura / SCREEN Semiconductor Solutions Co., Ltd.	
<b>Discussion</b>	None	
<b>Vote</b>	12 Y-0 N	
<b>Final Action</b>	<input checked="" type="checkbox"/>	Motion passed
	<input type="checkbox"/>	Motion failed

**Note: If the use of PMPT or copyrighted item is justified by the TC Chapter, LOA or release form must be received before publication can proceed.**