

# ISO/IEC JTC 1/SC 32 N 1945

Date: 2010-01-10

REPLACES: \_\_\_\_\_

## ISO/IEC JTC 1/SC 32

### Data Management and Interchange

Secretariat: United States of America (ANSI)  
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<b>DOCUMENT TYPE</b>	Disposition of Comments
<b>TITLE</b>	Disposition of comments in 32N1859 Summary of Voting on CD 13249-3 Information technology - SQL Multimedia and Application Packages - Part 3: Spatial, 4th Edition
<b>SOURCE</b>	WG4 - Mark Ashworth - project editor
<b>PROJECT NUMBER</b>	1.32.04.04.03.00
<b>STATUS</b>	Disposition of comments in 32N1859 (comments on CD 13249-3 ballot 32N1820). This accompanies FCD 13249-3 sent to NBs for 4 month letter ballot
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ISO  
International Organization for Standardization  
ISO/IEC JTC 1/SC 32  
Data Management and Interchange  
WG 4  
SQL Multimedia and Application Packages

**Title:** Final Disposition of CD Ballot Comments for SQL/MM – Part 3: Spatial 4<sup>th</sup> Edition  
**Editor:** Mark Ashworth

**References:**

- [ST CD] ISO/IEC JTC 1/SC 32/WG 4:CJU-003, *(Committee Draft) SQL Multimedia and Application Packages (SQL/MM)—Part 3: Spatial 4<sup>th</sup> Edition – Text for Editing Meeting*, Mark Ashworth (ed), January 2009.
- [ST SV] ISO/IEC JTC 1/SC 32 N 1859 - Summary of Voting on 32N1820 CD 13249-3 Information technology - Database languages - SQL Multimedia and Application Packages Part 3: Spatial 4th Edition

## Discussion

There are 179 SQL/MM Part 3: Spatial (4th Edition) CD ballot comments. This amounts to 35 Major Technical comments, 126 Minor Technical comments, 18 Major Editorial comment, and 0 Minor Editorial comments.

There were 170 (36,126,18,0) SQL/MM Part 3: Spatial (4th Edition) CD ballot comments resolved at the CD Editing meeting held over two meeting, 1) in Jeju, Korea on June 23th to June 25th, 2009 and 2) in London, UK on November 16<sup>th</sup> to November 20<sup>th</sup> 2009. There are 4 Major Technical Comments remaining open (3 from Canada and 1 from Germany). There were 4 new possible problems identified during the meeting: 3 Major Technical and 1 Minor Technical which appear at the end of this document. Only the Minor Technical Problem was resolved during the editing meeting and the 3 new Major Technical problems are carried forward. It should be noted that **PP 3-416** identifies a breaking change that will significantly affect existing implementations of the SQL/MM Standard. The following table indicates the breakdown of open, closed, catchall comments for each National Body and in each Severity category. The breakdown in each cell of the table is in the form:  $a+b+c=t$ , where a is the number of open or partially open ballot comment (not including comments identified as catchalls), b is the number of closed ballot comments, c is the number of ballot comments identified as catchall comments marked as resolved and t is the total number of ballot comments for that cell.

National Body	Major Technical	Minor Technical	Major Editorial	Minor Editorial	Total
Canada	3+20+1=24	0+15+0=15	0+4+0=4		3+39+1=43
China			0+7+0=7		0+7+0=7
Germany	1+0+1=2				1+0+1=2
Japan	0+2+1=3		0+4+0=4		0+6+1=7
UK	0+1+0=1		0+3+0=3		0+4+0=4
USA	0+3+2=5	0+111+0=111			0+114+2=116
Total	4+26+5=35	0+126+0=126	0+18+0=18		4+170+5=179

## Summary of Ballot Results from the SC32 Secretariat

See [ST SV].

## Resolution

### Resolution WG4-2 FCD ballot for SQL/MM Part 3: Spatial

WG 4 resolved to progress SQL/MM Part 3: Spatial to FCD. WG 4 asks SC 32 Secretariat to conduct an FCD ballot for SQL/MM Part 3: Spatial upon receipt of the revised text.

**Unanimous**

## Ballot Comments

The ballot comment are presented in the format defined by WG3 SD-006 and therefore the following ballot comments are sorted by subclause number with those comments that do not apply to an existing subclause at the end.

The columns in the document have the following meanings:

- SEQ # — A sequence number indicating the total number of comments
- Cmnt ID — The comment identifier assigned by the organization submitting the comment
- See Also — Pointers to (comment identifiers of) other comments that appear to be closely related
- Severity — The severity of the problem as stated by the organization submitting the comment
- Reference — The location in the balloted document that the organization identified as most pertaining to the comment
- Description — The description provided by the organization with the comment; this includes any solution provided by the organization
- Addressed By — “See Comment” if a solution was provided by the organization; a paper number if a known proposal addresses the comment; blank otherwise.

In this Consolidated Comments document, some comments are marked "RESOLVED ☺", which means that an Editing Meeting has resolved the comments by accepting some change to the CD documents, that an Editing Meeting has determined that no action is required, that the comment has been withdrawn, or that the Editor has resolved the comment.

Please note that the SEQ # Column is no longer entirely in ascending order. Several formatting corrections were made to Column 5, Reference. The order is based on the Reference Column, then the Severity Column and then the Comment ID Column.

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
<i>SQL/MM Spatial</i>						
1	CHN-P03-001		3-Major Editorial	P03-00, Foreword	The fifth paragraph:  The name of SC32 is wrong.  <b>Solution</b> Propose to replace “Data management service” with “Data management and interchange”	See Comment RESOLVED ☺
2	CHN-P03-002		3-Major Editorial	P03-00, Foreword	The sixth paragraph:  The edition and date are wrong.  <b>Solution</b> Propose to replace this paragraph with “This fourth edition cancels and replaces the third edition(ISO/IEC 13249-3:2006), which has been technically revised.”	See Comment RESOLVED ☺
3	CHN-P03-003		3-Major Editorial	P03-00, Introduction	For Annex D:  The date is wrong.  <b>Solution</b> Propose to replace “13249-3:2003” with “13249-3:2006”	See Comment RESOLVED ☺
4	CAN-P03-001		2-Minor Technical	P03-03.01.02.07, boundary of a point, P03-03.01.02.08, boundary of a curvet, P03-03.01.02.09, boundary of a surface,	boundary of a point, boundary of a curve and boundary of a surface are not used.  <b>Solution</b> Delete the definitions if it is not used.	Withdrawn RESOLVED ☺
5	GBR-P03-002		3-Major Editorial	P03-03.01.02.11, breakline	"discontinuity in the slope of a TIN surface ...."  The abbreviation TIN should be elaborated before its use in this and other definitions, and in this case a space is required.  <b>Solution</b> None provided with comment.	CJU-027 RESOLVED ☺
6	CAN-P03-002	USA-P03-001	2-Minor Technical	P03-03.01.02.14, control line	Control line is defined but not used.  <b>Solution</b> Delete the definition if it is not used.	Resolved by action on #007 USA-P03-001 RESOLVED ☺
7	USA-P03-001	CAN-P03-002	2-Minor Technical	P03-03.01.02.14, control line	wrong name for term as per agreed change at Portugal WG4 meeting  <b>Solution</b> Modify as follows: “control <b>contour line</b> ”	See Comment RESOLVED ☺

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
8	CAN-P03-003		2-Minor Technical	P03-03.01.02.18, <i>directed link</i>	Directed link is defined but not used. <b>Solution</b> Delete the definition if it is not used.	See Comment RESOLVED ☺
9	CAN-P03-004		2-Minor Technical	P03-03.01.02.53, <i>soft breakline</i>	soft breakline is not used but soft break is. A common term should be used consistently. Either remove definition of soft breakline or change to definition to apply to <i>soft break</i> . <b>Solution</b> None provided with comment.	CJU-027 RESOLVED ☺
10	CAN-P03-005		1-Major Technical	P03-03.01.02.56, <i>spatially equals</i>	Previous editions used the defined term: spatially equals. In this CD, the term is not used any longer. This definition needs to be replaced with definitions for spatially 2D equals and spatially 3D equals. <b>Solution</b> None provided with comment.	CJU-026 RESOLVED ☺
11	CAN-P03-007		2-Minor Technical	P03-03.02, <i>Terms and definitions</i>	There should be a definition for "voided area" <b>Solution</b> None provided with comment.	CJU-027 RESOLVED ☺
12	CAN-P03-008		2-Minor Technical	P03-03.02, <i>Terms and definitions</i>	The terms "triangulated surface" and "TIN Surface" seem to be interchangeable. If so, one should be used consistently. If not, then the terms should be defined. <b>Solution</b> None provided with comment.	CJU-027 RESOLVED ☺
13	CAN-P03-009		2-Minor Technical	P03-03.02, <i>Terms and definitions.</i>	The CD uses: control line / contour control / contour control line to mean the same thing. A common term should consistently. <b>Solution</b> None provided with comment.	CJU-027 RESOLVED ☺
14	CAN-P03-010		1-Major Technical	P03-04.02, <i>Topology-Geometry, and</i> P03-04.03, <i>Topology-Network</i>	<b>Spatial Opportunity 3-305:</b> There is a many to many relationship between features and topological primitives. Add support for grouping together the topological primitives associated with a feature into a single atomic value. <b>Solution</b> None provided with comment.	Closed as Spatial Opportunity 3-414 RESOLVED ☺
15	CAN-P03-011		1-Major Technical	P03-04.02, <i>Topology-Geometry, and</i> P03-04.03, <i>Topology-Network</i>	<b>Spatial Opportunity 3-306:</b> Add support for the topological operations defined for ST_Geometry types using topological primitives instead of geometry types. <b>Solution</b> None provided with comment.	Closed as Spatial Opportunity 3-414 RESOLVED ☺
16	USA-P03-002		2-Minor Technical	P03-04.02.01.01, <i>Methods on ST_Geometry</i>	12 and 13) Incorrect tense <b>Solution</b> Change "match" to "matches"	See Comment RESOLVED ☺

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
17	USA-P03-003	USA-P03-112	2-Minor Technical	P03-04.02.01.01, Methods on ST_Geometry	16), 18), 19), 20), 21), 23), 25), 27), and 29) m coordinate values also ignored according to 5.1 Geometry Types and Routines <b>Solution</b> Modify as follows: “... z <b>and m</b> values...”	See Comment RESOLVED ☺
18	USA-P03-004		2-Minor Technical	P03-04.02.01.01, Methods on ST_Geometry	17) Incorrect name <b>Solution</b> Change “ST_Boundary” to “ST_3DBoundary”	See Comment RESOLVED ☺
19	USA-P03-005		2-Minor Technical	P03-04.02.01.06, Use of Z and M coordinate values	5 and 6) Incorrect conjunction <b>Solution</b> Change “or” to “and”	See Comment RESOLVED ☺
20	USA-P03-006	USA-P03-112	2-Minor Technical	P03-04.02.02.03, Spatial Methods using ST_Geometry	3) ST_Relate Not explicit about 2D behavior <b>Solution</b> Add a second paragraph: “When determining if two geometries are spatially related, z and m coordinate values are ignored in the calculations.”	See Comment RESOLVED ☺
21	USA-P03-007		2-Minor Technical	P03-04.02.02.03, Spatial Methods using ST_Geometry	7) ST_3DIntersect Incorrect name <b>Solution</b> Change method name to “ST_3DIntersects.”	See Comment RESOLVED ☺
22	USA-P03-008	USA-P03-112	2-Minor Technical	P03-04.02.02.03, Spatial Methods using ST_Geometry	8) ST_Touches Not explicit about 2D behavior <b>Solution</b> Add a final paragraph: “When determining if a geometry touches another geometry, z and m coordinate values are ignored in the calculations.”	See Comment RESOLVED ☺
23	USA-P03-009	USA-P03-112	2-Minor Technical	P03-04.02.02.03, Spatial Methods using ST_Geometry	9) ST_Crosses Not explicit about 2D behavior <b>Solution</b> Add a final paragraph: “When determining if a geometry crosses another geometry, z and m coordinate values are ignored in the calculations.”	See Comment RESOLVED ☺
24	USA-P03-010	USA-P03-112	2-Minor Technical	P03-04.02.02.03, Spatial Methods using ST_Geometry	10) ST_Within Not explicit about 2D behavior <b>Solution</b> Add a final paragraph: “When determining if a geometry is within another geometry, z and m coordinate values are ignored in the calculations.”	See Comment RESOLVED ☺

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
25	USA-P03-011	USA-P03-112	2-Minor Technical	P03-04.02.02.03, <i>Spatial Methods using ST_Geometry</i>	11) ST_Contains Not explicit about 2D behavior <b>Solution</b> Add a final paragraph: “When determining if a geometry contains another geometry, z and m coordinate values are ignored in the calculations.”	See Comment RESOLVED ☺
26	USA-P03-012	USA-P03-112	2-Minor Technical	P03-04.02.02.03, <i>Spatial Methods using ST_Geometry</i>	12) ST_Overlaps Not explicit about 2D behavior <b>Solution</b> Add a final paragraph: “When determining if a geometry overlaps another geometry, z and m coordinate values are ignored in the calculations.”	See Comment RESOLVED ☺
27	USA-P03-013	USA-P03-112	2-Minor Technical	P03-04.02.04.01, <i>Methods on ST_Curve</i>	1), 5) and 7) m coordinate values also ignored according to 7.1.1 ST_Curve Type and its proposed changes <b>Solution</b> Modify as follows: “... z <b>and m</b> coordinate values...”	See Comment RESOLVED ☺
28	USA-P03-014	USA-P03-112	2-Minor Technical	P03-04.02.04.01, <i>Methods on ST_Curve</i>	3) and 4) m coordinate values also included according to 7.1.1 ST_Curve Type proposed changes <b>Solution</b> Modify as follows: “... z <b>and m</b> coordinate values...”	See Comment RESOLVED ☺
29	USA-P03-015	USA-P03-112	2-Minor Technical	P03-04.02.08.01, <i>Methods on ST_Surface</i>	1), 3), 5), 7), and 9) m coordinate values also included according to 7.1.1 ST_Surface Type proposed changes <b>Solution</b> Modify as follows: “... z <b>and m</b> coordinate values...”	See Comment RESOLVED ☺
30	USA-P03-113		2-Minor Technical	P03-04.02.11, <i>ST_Triangle</i>	missing addition to text as per agreed change at Portugal WG4 meeting <b>Solution</b> Modify as follows: ... having exactly four points <b>(the last point repeating the first)</b> and no interior boundaries ...	See Comment Amended: Replace "repeating the first" with "being the same as the first point" RESOLVED ☺
31	USA-P03-016		2-Minor Technical	P03-04.02.12.01, <i>Methods on ST_PolyhtrlSurface</i>	2) missing method <b>Solution</b> Modify as follows: “... observes <b>and mutates</b> the...”	See Comment RESOLVED ☺

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
32	CAN-P03-012	USA-P03-114 USA-P03-115 JPN-P03-001 GBR-P03-004	1-Major Technical	P03-04.02.13, ST_TIN	The text references the Delaunay algorithm. Are there any IP or Open Source concerns referencing a specific algorithm. If not, there should be an official Normative or Bibliographic reference to it. If a similar algorithm can be used, what are they or is it implementation-defined or implementation-dependent. This needs to be explicitly stated.  <b>Solution</b> None provided with comment.	Partially Resolved by action on #033 USA-P03-114 and #169 USA-P03-115 LCY-008 RESOLVED ☺
155	JPN-P03-001	CAN-P03-012 USA-P03-114 USA-P03-115 GBR-P03-004	1-Major Technical	P03-04.02.13, ST_TIN	Triangulation by Delaunay algorithm or a similar algorithm is specified as implementation-defined in this subclause without conceptual definition or citation. At least the definition in Subclause 3.1 Terms and definitions, or the informative annex should be prepared if not in normative references.  <b>Solution</b> None provided with comment.	Resolved by action on #033 USA-P03-114 and #169 USA-P03-115 RESOLVED ☺
33	USA-P03-114	CAN-P03-012 USA-P03-115 JPN-P03-001 GBR-P03-004	2-Minor Technical	P03-04.02.13, ST_TIN	missing Bibliography reference as per agreed change at Portugal WG4 meeting  <b>Solution</b> Modify as follows: ... the Delaunay algorithm [2+1] ...	See Comment RESOLVED ☺
156	GBR-P03-003		3-Major Editorial	P03-04.02.13, ST_TIN	"that uses the Delaunay algorithm or a similar algorithm complemented with consideration for breaklines, ....."  This phrasing is ambiguous; it is not clear whether the Delaunay algorithm is complemented or not.  <b>Solution</b> Replace by: "that uses the Delaunay algorithm, or a similar algorithm, complemented with consideration for breaklines, ... "	See Comment RESOLVED ☺
34	USA-P03-017	USA-P03-113	2-Minor Technical	P03-04.02.16.01, Methods on ST_MultiCurve	Missing method  <b>Solution</b> Add method: 5) ST_3DLength: returns the 3D length of the ST_MultiCurve value, considering z values in the calculations.	See Comment RESOLVED ☺
35	USA-P03-018	USA-P03-113	2-Minor Technical	P03-04.02.18.01, Methods on ST_MultiSurface	2), 4), and 8) m coordinate values also included according to 9.5 ST_MultiSurface Type proposed changes  <b>Solution</b> Modify as follows: "... z <b>and m</b> coordinate values..."	See Comment RESOLVED ☺

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
36	USA-P03-019	USA-P03-113	2-Minor Technical	P03-04.02.18.01, Methods on ST_MultiSurface	6) ST_Centroid Not explicit about 2D behavior  <b>Solution</b> Modify as follows: ST_Centroid: returns the ST_Point value that is the mathematical centroid of the ST_MultiSurface value, <b>ignoring z and m coordinate values in the calculations and not including them in the resultant geometry.</b>	See Comment RESOLVED ☺
37	USA-P03-020		1-Major Technical	P03-05.01, ST_Geometry Type and Routines	ST_3DEquals method is missing, as in 4.2.2.3 Spatial Methods using ST_Geometry 2) ST_3DEquals.  <b>Solution</b> None provided with comment.	CJU-016R1 RESOLVED ☺
38	USA-P03-110		1-Major Technical	P03-05.01, ST_Geometry Type and Routines	The remaining spatial operators (ST_Touches, ST_Crosses, ST_Within, ST_Contains, and ST_Overlaps) need 3D versions.  <b>Solution</b> None provided with comment.	Closed as Spatial Opportunity 3-414 RESOLVED ☺
39	USA-P03-111		1-Major Technical	P03-05.01, ST_Geometry Type and Routines	The 3D version of certain geometry methods (ST_Envelope, ST_ConvexHull, and ST_Buffer ) would return solid geometries. These methods should be added, along with a new ST_Solid type.  <b>Solution</b> None provided with comment.	Change to a Spatial Opportunity 3-115 RESOLVED ☺
40	CAN-P03-013		1-Major Technical	P03-05.01.01, ST_Geometry Type	<b>Spatial Opportunity 3-404:</b> additional DS proposed  <b>Solution</b> Add to DS: <b>10+1) All returned ST_Geometry values shall be of the most specific type possible.</b>	Closed as Spatial Opportunity 3-414 RESOLVED ☺
41	USA-P03-021		2-Minor Technical	P03-05.01.06, ST_Transform Method	PS Incorrect conjunction  <b>Solution</b> Change “or” to “and”	See Comment RESOLVED ☺
42	CAN-P03-014		2-Minor Technical	P03-05.01.12, ST_LocateAlong	ST_LocateAlong is defined in terms of ST_LocateBetween. Description Rule 3) is redundant because ST_LocateBetween has this very same rule.  <b>Solution</b> Delete Description Rule 3) If SELF.ST_Is3D...	See Comment RESOLVED ☺
43	CAN-P03-015		2-Minor Technical	P03-05.01.13, ST_3DLocateAlong	ST_3DLocateAlong is defined in terms of ST_LocateBetween. Description Rule 3) is redundant because ST_3DLocateBetween has this very same rule.  <b>Solution</b> Delete Description Rule 3) If SELF.ST_Is3D...	See Comment RESOLVED ☺

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
44	USA-P03-022		2-Minor Technical	P03-05.01.13, ST_LocateAlong Method	DS 3) Double negative  Delete “neither”  <b>Solution</b>	See Comment Amend: in the same sentence "nor are they" with "and they are not" RESOLVED ☺
45	USA-P03-023		2-Minor Technical	P03-05.01.15, ST_LocateBetwee n Method	DS 3) Double negative  Delete “neither”  <b>Solution</b>	See Comment Amend: in the same sentence "nor are they" with "and they are not" RESOLVED ☺
46	USA-P03-024	USA-P03-113	2-Minor Technical	P03-05.01.17, ST_Boundary Method	PS m coordinate values also ignored according to Description 4)  <b>Solution</b>  Modify Purpose as follows: “... z <b>and m</b> coordinate values...”	See Comment RESOLVED ☺
47	USA-P03-025		2-Minor Technical	P03-05.01.17, ST_Boundary Method	DS 3) Double negative  Delete “neither”  <b>Solution</b>	See Comment Amend: in the same sentence "nor are they" with "and they are not" RESOLVED ☺
48	USA-P03-026	USA-P03-113	2-Minor Technical	P03-05.01.19, ST_Envelope Method	PS m coordinate values also ignored according to Description 4)  <b>Solution</b>  Modify Purpose as follows: “... z <b>and m</b> coordinate values...”	See Comment RESOLVED ☺
49	USA-P03-027	USA-P03-113	2-Minor Technical	P03-05.01.20, ST_ConvexHull Method	PS m coordinate values also ignored according to Description 4)  <b>Solution</b>  Modify Purpose as follows: “... z <b>and m</b> coordinate values...”	See Comment RESOLVED ☺
50	USA-P03-028	USA-P03-113	2-Minor Technical	P03-05.01.21, ST_Buffer Method	PS m coordinate values also ignored according to Description 2) d) and 4) g)  <b>Solution</b>  Modify Purpose as follows: “... z <b>and m</b> coordinate values...”	See Comment RESOLVED ☺

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
51	USA-P03-029	USA-P03-113	2-Minor Technical	P03-05.01.22, ST_Intersection Method	PS m coordinate values also ignored according to Description 4) <b>Solution</b> Modify Purpose as follows: “... z <b>and m</b> coordinate values...”	See Comment RESOLVED ☺
52	USA-P03-030	USA-P03-113	2-Minor Technical	P03-05.01.22, ST_Intersection Method	DS ageometry z and m coordinates should also be ignored <b>Solution</b> Add two new Descriptions: If <i>ageometry.ST_Is3D()</i> is equal to 1 (one), then: a) The z coordinate values are not considered in the calculation. b) The <i>ST_Point</i> values contained in the returned <i>ST_Geometry</i> value do not include z coordinate values. If <i>ageometry.ST_IsMeasured()</i> is equal to 1 (one), then: a) The m coordinate values are not considered in the calculation. b) The <i>ST_Point</i> values contained in the returned <i>ST_Geometry</i> value do not include m coordinate values.	Solution: a) change DS 3) as follows If <i>SELF.ST_Is3D()</i> is equal to 1 (one) <b>or</b> <i>ageometry.ST_Is3D()</i> is equal to 1 (one), then b) change DS 4) as follows If <i>SELF.ST_IsMeasured()</i> is equal to 1 (one) <b>or</b> <i>ageometry.ST_IsMeasured()</i> is equal to 1 (one), then RESOLVED ☺
53	USA-P03-031	USA-P03-113	2-Minor Technical	P03-05.01.23, ST_3DIntersection Method	DS 3) If <i>SELF.ST_Is3D()</i> and <i>ageometry.ST_Is3D()</i> are not both equal to 1 (one), the intersection cannot be determined. The “if” condition should be changed to test if both are equal to 1 (one). The “then” consequences would then be ok as written, but an “else” consequence needs to be added which raises an exception. <b>Solution</b> None provided with comment.	CJU-017R1 RESOLVED ☺

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
54	USA-P03-032	USA-P03-113	2-Minor Technical	P03-05.01.23, <i>ST_3DIntersection Method</i>	<p>DS ageometry m coordinates should also be ignored</p> <p><b>Solution</b></p> <p>Add new Description:</p> <p>If <i>ageometry.ST_IsMeasured()</i> is equal to 1 (one), then:</p> <p>a) The m coordinate values are not considered in the calculation.</p> <p>b) The <i>ST_Point</i> values contained in the returned <i>ST_Geometry</i> value do not include m coordinate values.</p>	<p>Solution: a) change DS 4) as follows If <i>SELF.ST_IsMeasured()</i> is equal to 1 (one) <b>or</b> <i>ageometry.ST_IsMeasured()</i> is equal to 1 (one), then RESOLVED ☺</p>
55	USA-P03-033	USA-P03-113	2-Minor Technical	P03-05.01.24, <i>ST_Union Method</i>	<p>PS m coordinate values also ignored according to Description 4)</p> <p><b>Solution</b></p> <p>Modify Purpose as follows: “... z <b>and m</b> coordinate values...”</p>	<p>See Comment RESOLVED ☺</p>

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
56	USA-P03-034	USA-P03-113	2-Minor Technical	P03-05.01.24, ST_Union Method	<p>DS ageometry z and m coordinates should also be ignored</p> <p><b>Solution</b></p> <p>Add two new Descriptions:</p> <p>If <i>ageometry.ST_Is3D()</i> is equal to 1 (one), then:</p> <p>a) The z coordinate values are not considered in the calculation.</p> <p>b) The <i>ST_Point</i> values contained in the returned <i>ST_Geometry</i> value do not include z coordinate values.</p> <p>If <i>ageometry.ST_IsMeasured()</i> is equal to 1 (one), then:</p> <p>a) The m coordinate values are not considered in the calculation.</p> <p>b) The <i>ST_Point</i> values contained in the returned <i>ST_Geometry</i> value do not include m coordinate values.</p>	<p>Solution:</p> <p>a) change DS 3) as follows If <i>SELF.ST_Is3D()</i> is equal to 1 (one) <b>or</b> <i>ageometry.ST_Is3D()</i> is equal to 1 (one), then b) change DS 4) as follows If <i>SELF.ST_IsMeasured()</i> is equal to 1 (one) <b>or</b> <i>ageometry.ST_IsMeasured()</i> is equal to 1 (one), then RESOLVED ☺</p>
57	USA-P03-035		2-Minor Technical	P03-05.01.25, ST_3DUnion Method	<p>DS 3)</p> <p>If <i>SELF.ST_Is3D()</i> and <i>ageometry.ST_Is3D()</i> are not both equal to 1 (one), the union cannot be determined. The “if” condition should be changed to test if both are equal to 1 (one). The “then” consequences would then be ok as written, but an “else” consequence needs to be added which raises an exception.</p> <p><b>Solution</b></p> <p>None provided with comment.</p>	<p>CJU-017R1 RESOLVED ☺</p>

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
58	USA-P03-036	USA-P03-113	2-Minor Technical	P03-05.01.25, ST_3DUnion Method	<p>DS ageometry m coordinates should also be ignored</p> <p><b>Solution</b></p> <p>Add new Description:</p> <p>If <i>ageometry.ST_IsMeasured()</i> is equal to 1 (one), then:</p> <p>a) The m coordinate values are not considered in the calculation.</p> <p>b) The <i>ST_Point</i> values contained in the returned <i>ST_Geometry</i> value do not include m coordinate values.</p>	<p>Solution: a) change DS 4) as follows If <i>SELF.ST_IsMeasured()</i> is equal to 1 (one) <b>or</b> <i>ageometry.ST_IsMeasured()</i> is equal to 1 (one), then RESOLVED ☺</p>
59	USA-P03-037	USA-P03-113	2-Minor Technical	P03-05.01.26, ST_Difference Method	<p>PS m coordinate values also ignored according to Description 4)</p> <p><b>Solution</b></p> <p>Modify Purpose as follows: “... z <b>and m</b> coordinate values...”</p>	<p>See Comment RESOLVED ☺</p>

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
60	USA-P03-038	USA-P03-113	2-Minor Technical	P03-05.01.26, <i>ST_Difference Method</i>	<p>DS ageometry z and m coordinates should also be ignored</p> <p><b>Solution</b></p> <p>Add two new Descriptions:</p> <p>If <i>ageometry.ST_Is3D()</i> is equal to 1 (one), then:</p> <p>a) The z coordinate values are not considered in the calculation.</p> <p>b) The <i>ST_Point</i> values contained in the returned <i>ST_Geometry</i> value do not include z coordinate values.</p> <p>If <i>ageometry.ST_IsMeasured()</i> is equal to 1 (one), then:</p> <p>a) The m coordinate values are not considered in the calculation.</p> <p>b) The <i>ST_Point</i> values contained in the returned <i>ST_Geometry</i> value do not include m coordinate values.</p>	<p>Solution:</p> <p>a) change DS 3) as follows If <i>SELF.ST_Is3D()</i> is equal to 1 (one) <b>or</b> <i>ageometry.ST_Is3D()</i> is equal to 1 (one), then b) change DS 4) as follows If <i>SELF.ST_IsMeasured()</i> is equal to 1 (one) <b>or</b> <i>ageometry.ST_IsMeasured()</i> is equal to 1 (one), then RESOLVED ☺</p>
61	USA-P03-039		2-Minor Technical	P03-05.01.27, <i>ST_3DDifference Methods</i>	<p>DS 3)</p> <p>If <i>SELF.ST_Is3D()</i> and <i>ageometry.ST_Is3D()</i> are not both equal to 1 (one), the difference cannot be determined. The “if” condition should be changed to test if both are equal to 1 (one). The “then” consequences would then be ok as written, but an “else” consequence needs to be added which raises an exception.</p> <p><b>Solution</b></p> <p>None provided with comment.</p>	<p>CJU-017R1 RESOLVED ☺</p>

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
62	USA-P03-040	USA-P03-113	2-Minor Technical	P03-05.01.27, ST_3DDifference Methods	<p>DS ageometry m coordinates should also be ignored</p> <p><b>Solution</b></p> <p>Add new Description:</p> <p>If <i>ageometry.ST_IsMeasured()</i> is equal to 1 (one), then:</p> <p>a) The m coordinate values are not considered in the calculation.</p> <p>b) The <i>ST_Point</i> values contained in the returned <i>ST_Geometry</i> value do not include m coordinate values.</p>	<p>Solution: a) change DS 4) as follows If <i>SELF.ST_IsMeasured()</i> is equal to 1 (one) <b>or</b> <i>ageometry.ST_IsMeasured()</i> is equal to 1 (one), then RESOLVED ☺</p>
63	USA-P03-041	USA-P03-113	2-Minor Technical	P03-05.01.28, ST_SymDifference Method	<p>PS m coordinate values also ignored according to Description 4)</p> <p><b>Solution</b></p> <p>Modify Purpose as follows: “... z <b>and m</b> coordinate values...”</p>	<p>See Comment RESOLVED ☺</p>

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
64	USA-P03-042	USA-P03-113	2-Minor Technical	P03-05.01.28, ST_SymDifference Method	<p>DS ageometry z and m coordinates should also be ignored</p> <p><b>Solution</b></p> <p>Add two new Descriptions:</p> <p>If <i>ageometry.ST_Is3D()</i> is equal to 1 (one), then:</p> <p>a) The z coordinate values are not considered in the calculation.</p> <p>b) The <i>ST_Point</i> values contained in the returned <i>ST_Geometry</i> value do not include z coordinate values.</p> <p>If <i>ageometry.ST_IsMeasured()</i> is equal to 1 (one), then:</p> <p>a) The m coordinate values are not considered in the calculation.</p> <p>b) The <i>ST_Point</i> values contained in the returned <i>ST_Geometry</i> value do not include m coordinate values.</p>	<p>Solution:</p> <p>a) change DS 3) as follows If <i>SELF.ST_Is3D()</i> is equal to 1 (one) <b>or</b> <i>ageometry.ST_Is3D()</i> is equal to 1 (one), then b) change DS 4) as follows If <i>SELF.ST_IsMeasured()</i> is equal to 1 (one) <b>or</b> <i>ageometry.ST_IsMeasured()</i> is equal to 1 (one), then RESOLVED ☺</p>
65	USA-P03-043		2-Minor Technical	P03-05.01.29, ST_3DSymDifference Method	<p>DS 3)</p> <p>If <i>SELF.ST_Is3D()</i> and <i>ageometry.ST_Is3D()</i> are not both equal to 1 (one), the symmetric difference cannot be determined. The “if” condition should be changed to test if both are equal to 1 (one). The “then” consequences would then be ok as written, but an “else” consequence needs to be added which raises an exception.</p> <p><b>Solution</b></p> <p>None provided with comment.</p>	<p>CJU-017R1 RESOLVED ☺</p>

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
66	USA-P03-044	USA-P03-113	2-Minor Technical	P03-05.01.29, ST_3DSymDifference Method	DS ageometry m coordinates should also be ignored <b>Solution</b> Add new Description: If <i>ageometry.ST_IsMeasured()</i> is equal to 1 (one), then: a) The m coordinate values are not considered in the calculation. b) The <i>ST_Point</i> values contained in the returned <i>ST_Geometry</i> value do not include m coordinate values.	Solution: a) change DS 4) as follows If <i>SELF.ST_IsMeasured()</i> is equal to 1 (one) <b>or</b> <i>ageometry.ST_IsMeasured()</i> is equal to 1 (one), then RESOLVED ☺
67	USA-P03-045	USA-P03-113	2-Minor Technical	P03-05.01.32, ST_Distance Method	PS m coordinate values also ignored according to Description 4) <b>Solution</b> Modify Purpose as follows: “... z <b>and m</b> coordinate values...”	See Comment RESOLVED ☺
68	USA-P03-046		2-Minor Technical	P03-05.01.33, ST_3DDistance Method	DS 2) and 4) If <i>SELF.ST_Is3D()</i> and <i>ageometry.ST_Is3D()</i> are not both equal to 1 (one), the distance cannot be determined, so an exception should be raised. <b>Solution</b> None provided with comment.	CJU-017R1 RESOLVED ☺
69	USA-P03-047	USA-P03-113	2-Minor Technical	P03-05.01.33, ST_3DDistance Method	DS 2) a) iii) and 4) d) iii) For the 3D distance to be zero, the spatial intersection must be 3D. <b>Solution</b> Modify as follows: iii) If <i>SELF</i> and <i>ageometry</i> spatially intersect <b>in 3D</b> , then return 0 (zero).	See Comment RESOLVED ☺
70	CAN-P03-016		1-Major Technical	P03-05.01.34, ST_Equals	ST_3DEqual method is referenced but not defined. <b>Solution</b> None provided with comment.	CJU-016R1 RESOLVED ☺
71	CAN-P03-017		1-Major Technical	P03-05.01.34, ST_Equals	The text in the CD now seems to use either uses spatially 2D equals or spatially 3D equals. The <i>ST_Equals</i> method should use spatially 2D equals (here and in the concepts section) and it should be defined. <b>Solution</b> None provided with comment.	CJU-026 RESOLVED ☺

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
72	USA-P03-048		2-Minor Technical	P03-05.01.34, ST_Equals Method	<p>PS</p> <p>Not explicit about 2D behavior. Should agree with 4.2.2.3 Spatial Methods using ST_Geometry 2) ST_3DEquals.</p> <p><b>Solution</b></p> <p>Modify as follows: Test if an ST_Geometry value is spatially equal to another ST_Geometry value, <b>ignoring z and m coordinate values in the calculations.</b></p>	See Comment RESOLVED ☺
73	USA-P03-049	USA-P03-113	2-Minor Technical	P03-05.01.35, ST_Relate Method	<p>PS</p> <p>Not explicit enough about 2D behavior. Should agree with 4.2.2.3 Spatial Methods using ST_Geometry 3) ST_Relate proposed change.</p> <p><b>Solution</b></p> <p>Modify as follows: ignoring z <b>and m</b> coordinate values in the calculations.</p>	See Comment RESOLVED ☺
74	USA-P03-050	USA-P03-113	2-Minor Technical	P03-05.01.35, ST_Relate Method	<p>DS</p> <p>ageometry z and m coordinates should also be ignored</p> <p><b>Solution</b></p> <p>Add two new Descriptions:</p> <p style="padding-left: 40px;">If <i>ageometry.ST_Is3D()</i> is equal to 1 (one), then the z coordinate values are not considered in the calculation.</p> <p style="padding-left: 40px;">If <i>ageometry.ST_IsMeasured()</i> is equal to 1 (one), then the m coordinate values are not considered in the calculation.</p>	<p>Solution:</p> <p>a) change DS 3) as follows If <i>SELF.ST_Is3D()</i> is equal to 1 (one) <b>or</b> <i>ageometry.ST_Is3D()</i> is equal to 1 (one), then</p> <p>b) change DS 4) as follows If <i>SELF.ST_IsMeasured()</i> is equal to 1 (one) <b>or</b> <i>ageometry.ST_IsMeasured()</i> is equal to 1 (one), then</p> <p>RESOLVED ☺</p>

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
75	USA-P03-051	USA-P03-113	2-Minor Technical	P03-05.01.36, ST_Disjoint Method	<p>PS</p> <p>Not explicit enough about 2D behavior. Should agree with 4.2.2.3 Spatial Methods using ST_Geometry 4) ST_Disjoint.</p> <p><b>Solution</b></p> <p>Modify as follows: ignoring z <b>and m</b> coordinate values in the calculations.</p>	See Comment RESOLVED ☺
76	USA-P03-052	USA-P03-113	2-Minor Technical	P03-05.01.36, ST_Disjoint Method	<p>DS</p> <p>SELF m as well as ageometry z and m coordinates should also be ignored</p> <p><b>Solution</b></p> <p>Add three new Descriptions:</p> <p style="padding-left: 40px;">If <i>SELF.ST_IsMeasured()</i> is equal to 1 (one), then the m coordinate values are not considered in the calculation.</p> <p style="padding-left: 40px;">If <i>ageometry.ST_Is3D()</i> is equal to 1 (one), then the z coordinate values are not considered in the calculation.</p> <p style="padding-left: 40px;">If <i>ageometry.ST_IsMeasured()</i> is equal to 1 (one), then the m coordinate values are not considered in the calculation.</p>	<p>Solution:</p> <p>a) change DS 3) as follows If <i>SELF.ST_Is3D()</i> is equal to 1 (one) <b>or</b> <i>ageometry.ST_Is3D()</i> is equal to 1 (one), then</p> <p>b) add DS 4) as follows <b>If</b> <i>SELF.ST_IsMeasured()</i> is equal to 1 (one) <b>or</b> <i>ageometry.ST_IsMeasured()</i> is equal to 1 (one), then the m coordinate values are not considered in the calculation.</p> <p>RESOLVED ☺</p>
77	USA-P03-053		2-Minor Technical	P03-05.01.37, ST_3DDisjoint Method	<p>DS 3)</p> <p>If SELF.ST_Is3D() and ageometry.ST_Is3D() are not both equal to 1 (one), disjoint cannot be determined, so an exception should be raised.</p> <p><b>Solution</b></p> <p>None provided with comment.</p>	CJU-017R1 RESOLVED ☺

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
78	USA-P03-054	USA-P03-113	2-Minor Technical	P03-05.01.38, ST_Intersects Method	<p>PS</p> <p>Not explicit enough about 2D behavior. Should agree with 4.2.2.3 Spatial Methods using ST_Geometry 6) ST_Intersects.</p> <p><b>Solution</b></p> <p>Modify as follows: ignoring z <b>and m</b> coordinate values in the calculations.</p>	See Comment RESOLVED ☺
79	USA-P03-055	USA-P03-113	2-Minor Technical	P03-05.01.38, ST_Intersects Method	<p>DS</p> <p>SELF m as well as ageometry z and m coordinates should also be ignored</p> <p><b>Solution</b></p> <p>Add three new Descriptions:</p> <p style="padding-left: 40px;">If <i>SELF.ST_IsMeasured()</i> is equal to 1 (one), then the m coordinate values are not considered in the calculation.</p> <p style="padding-left: 40px;">If <i>ageometry.ST_Is3D()</i> is equal to 1 (one), then the z coordinate values are not considered in the calculation.</p> <p style="padding-left: 40px;">If <i>ageometry.ST_IsMeasured()</i> is equal to 1 (one), then the m coordinate values are not considered in the calculation.</p>	<p>Solution:</p> <p>a) change DS 3) as follows If <i>SELF.ST_Is3D()</i> is equal to 1 (one) <b>or</b> <i>ageometry.ST_Is3D()</i> is equal to 1 (one), then</p> <p>b) add DS 4) as follows <b>If</b> <i>SELF.ST_IsMeasured()</i> is equal to 1 (one) <b>or</b> <i>ageometry.ST_IsMeasured()</i> is equal to 1 (one), then the m coordinate values are not considered in the calculation.</p> <p>RESOLVED ☺</p>
80	USA-P03-056		2-Minor Technical	P03-05.01.39, ST_3DIntersects Method	<p>DS 3)</p> <p>If SELF.ST_Is3D() and ageometry.ST_Is3D() are not both equal to 1 (one), intersects cannot be determined, so an exception should be raised.</p> <p><b>Solution</b></p> <p>None provided with comment.</p>	CJU-017R1 RESOLVED ☺

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
81	CAN-P03-018		1-Major Technical	P03-05.01.40, SQL Transform Functions"	<b>Spatial Opportunity 3-303:</b> Add GML representation for ST_SpatialRefSys, ST_Angle and ST_Direction. <b>Solution</b> None provided with comment.	Closed as Spatial Opportunity 3-414 <b>RESOLVED</b> ☺
82	USA-P03-057	USA-P03-113	2-Minor Technical	P03-05.01.40, ST_Touches Method	PS Not explicit enough about 2D behavior. Should agree with 4.2.2.3 Spatial Methods using ST_Geometry 8) ST_Touches proposed change. <b>Solution</b> Modify as follows: ignoring z <b>and m</b> coordinate values in the calculations.	See Comment <b>RESOLVED</b> ☺
83	USA-P03-058	USA-P03-113	2-Minor Technical	P03-05.01.40, ST_Touches Method	DS SELF m as well as ageometry z and m coordinates should also be ignored <b>Solution</b> Add three new Descriptions:  If <i>SELF.ST_IsMeasured()</i> is equal to 1 (one), then the m coordinate values are not considered in the calculation.  If <i>ageometry.ST_Is3D()</i> is equal to 1 (one), then the z coordinate values are not considered in the calculation.  If <i>ageometry.ST_IsMeasured()</i> is equal to 1 (one), then the m coordinate values are not considered in the calculation.	Solution: a) change DS 3) as follows If <i>SELF.ST_Is3D()</i> is equal to 1 (one) <b>or</b> <i>ageometry.ST_Is3D()</i> is equal to 1 (one), then b) add DS 4) as follows <b>If</b> <i>SELF.ST_IsMeasured()</i> is equal to 1 (one) <b>or</b> <i>ageometry.ST_IsMeasured()</i> is equal to 1 (one), then the m coordinate values are not considered in the calculation. <b>RESOLVED</b> ☺

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
84	USA-P03-059	USA-P03-113	2-Minor Technical	P03-05.01.41, ST_Crosses Method	<p>PS</p> <p>Not explicit enough about 2D behavior. Should agree with 4.2.2.3 Spatial Methods using ST_Geometry 9) ST_Crosses proposed change.</p> <p style="text-align: center;"><b>Solution</b></p> <p>Modify as follows: ignoring z <b>and m</b> coordinate values in the calculations.</p>	See Comment RESOLVED ☺
85	USA-P03-060	USA-P03-113	2-Minor Technical	P03-05.01.41, ST_Crosses Method	<p>DS</p> <p>SELF m as well as ageometry z and m coordinates should also be ignored</p> <p style="text-align: center;"><b>Solution</b></p> <p>Add three new Descriptions:</p> <p style="padding-left: 40px;">If <i>SELF.ST_IsMeasured()</i> is equal to 1 (one), then the m coordinate values are not considered in the calculation.</p> <p style="padding-left: 40px;">If <i>ageometry.ST_Is3D()</i> is equal to 1 (one), then the z coordinate values are not considered in the calculation.</p> <p style="padding-left: 40px;">If <i>ageometry.ST_IsMeasured()</i> is equal to 1 (one), then the m coordinate values are not considered in the calculation.</p>	<p>Solution:</p> <p>a) change DS 3) as follows If <i>SELF.ST_Is3D()</i> is equal to 1 (one) <b>or</b> <i>ageometry.ST_Is3D()</i> is equal to 1 (one), then</p> <p>b) add DS 4) as follows <b>If</b> <i>SELF.ST_IsMeasured()</i> is equal to 1 (one) <b>or</b> <i>ageometry.ST_IsMeasured()</i> is equal to 1 (one), then the m coordinate values are not considered in the calculation.</p> <p>RESOLVED ☺</p>
86	USA-P03-061	USA-P03-113	2-Minor Technical	P03-05.01.42, ST_Within Method	<p>PS</p> <p>Not explicit enough about 2D behavior. Should agree with 4.2.2.3 Spatial Methods using ST_Geometry 10) ST_Within proposed change.</p> <p style="text-align: center;"><b>Solution</b></p> <p>Modify as follows: ignoring z <b>and m</b> coordinate values in the calculations.</p>	See Comment RESOLVED ☺

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
87	USA-P03-062	USA-P03-113	2-Minor Technical	P03-05.01.42, ST_Within Method	<p>DS SELF m as well as ageometry z and m coordinates should also be ignored</p> <p><b>Solution</b></p> <p>Add three new Descriptions:</p> <p style="padding-left: 40px;">If <i>SELF.ST_IsMeasured()</i> is equal to 1 (one), then the m coordinate values are not considered in the calculation.</p> <p style="padding-left: 40px;">If <i>ageometry.ST_Is3D()</i> is equal to 1 (one), then the z coordinate values are not considered in the calculation.</p> <p style="padding-left: 40px;">If <i>ageometry.ST_IsMeasured()</i> is equal to 1 (one), then the m coordinate values are not considered in the calculation.</p>	<p>Solution: a) change DS 3) as follows If <i>SELF.ST_Is3D()</i> is equal to 1 (one) <b>or</b> <i>ageometry.ST_Is3D()</i> is equal to 1 (one), then b) add DS 4) as follows <b>If</b> <i>SELF.ST_IsMeasured()</i> is equal to 1 (one) <b>or</b> <i>ageometry.ST_IsMeasured()</i> is equal to 1 (one), then the m coordinate values are not considered in the calculation.</p> <p>RESOLVED ☺</p>
88	USA-P03-063	USA-P03-113	2-Minor Technical	P03-05.01.43, ST_Contains Method	<p>PS Not explicit enough about 2D behavior. Should agree with 4.2.2.3 Spatial Methods using ST_Geometry 11) ST_Contains proposed change.</p> <p><b>Solution</b></p> <p>Modify as follows: ignoring z <b>and m</b> coordinate values in the calculations.</p>	<p>See Comment RESOLVED ☺</p>

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
89	USA-P03-064	USA-P03-113	2-Minor Technical	P03-05.01.43, ST_Contains Method	<p>DS SELF m as well as ageometry z and m coordinates should also be ignored</p> <p><b>Solution</b></p> <p>Add three new Descriptions:</p> <p>If <i>SELF.ST_IsMeasured()</i> is equal to 1 (one), then the m coordinate values are not considered in the calculation.</p> <p>If <i>ageometry.ST_Is3D()</i> is equal to 1 (one), then the z coordinate values are not considered in the calculation.</p> <p>If <i>ageometry.ST_IsMeasured()</i> is equal to 1 (one), then the m coordinate values are not considered in the calculation.</p>	<p>Solution:</p> <p>a) change DS 3) as follows If <i>SELF.ST_Is3D()</i> is equal to 1 (one) <b>or</b> <i>ageometry.ST_Is3D()</i> is equal to 1 (one), then</p> <p>b) add DS 4) as follows <b>If</b> <i>SELF.ST_IsMeasured()</i> is equal to 1 (one) <b>or</b> <i>ageometry.ST_IsMeasured()</i> is equal to 1 (one), then the m coordinate values are not considered in the calculation.</p> <p>RESOLVED ☺</p>
90	USA-P03-065	USA-P03-113	2-Minor Technical	P03-05.01.44, ST_Overlaps Method	<p>PS Not explicit enough about 2D behavior. Should agree with 4.2.2.3 Spatial Methods using ST_Geometry 12) ST_Overlaps proposed change.</p> <p><b>Solution</b></p> <p>Modify as follows: ignoring z <b>and m</b> coordinate values in the calculations.</p>	<p>See Comment RESOLVED ☺</p>

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
91	USA-P03-066	USA-P03-113	2-Minor Technical	P03-05.01.44, <i>ST_Overlaps Method</i>	<p>DS SELF m as well as ageometry z and m coordinates should also be ignored</p> <p><b>Solution</b></p> <p>Add three new Descriptions:</p> <p>If <i>SELF.ST_IsMeasured()</i> is equal to 1 (one), then the m coordinate values are not considered in the calculation.</p> <p>If <i>ageometry.ST_Is3D()</i> is equal to 1 (one), then the z coordinate values are not considered in the calculation.</p> <p>If <i>ageometry.ST_IsMeasured()</i> is equal to 1 (one), then the m coordinate values are not considered in the calculation.</p>	<p>Solution: a) change DS 3) as follows If <i>SELF.ST_Is3D()</i> is equal to 1 (one) <b>or</b> <i>ageometry.ST_Is3D()</i> is equal to 1 (one), then b) add DS 4) as follows <b>If</b> <i>SELF.ST_IsMeasured()</i> is equal to 1 (one) <b>or</b> <i>ageometry.ST_IsMeasured()</i> is equal to 1 (one), then the m coordinate values are not considered in the calculation.</p> <p>RESOLVED ☺</p>
92	USA-P03-067		2-Minor Technical	P03-05.01.57, <well-known text representation>	<p>DS 1) av) Missing keyword</p> <p><b>Solution</b></p> <p>Add “CONTROLCONTOUR” after “COMPOUNDCURVE”</p>	<p>See Comment RESOLVED ☺</p>
93	CAN-P03-019		1-Major Technical	P03-05.01-58, <well-known binary representation>	<p><b>PP 3-406:</b> WKB for Triangles, PolyhedralSurfaces and TINs needs to be specified.</p> <p><b>Solution</b></p> <p>None provided with comment.</p>	

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
94	USA-P03-068	USA-P03-113	2-Minor Technical	P03-07.01.01, ST_Curve Type	DS 10) and 13) m coordinate values must also be ignored <b>Solution</b> Add to both Descriptions: c) If <i>SELF.ST_IsMeasured()</i> is equal to 1 (one), then the m coordinate values are not considered in the calculation.	See Comment RESOLVED ☺
95	USA-P03-069	USA-P03-113	2-Minor Technical	P03-07.01.02, ST_Length Methods	PS Not explicit enough about 2D behavior. Should agree with DS 2) a) ii) and DS 4) d) ii). <b>Solution</b> Modify as follows: ignoring z <b>and m</b> coordinate values in the calculations.	See Comment RESOLVED ☺
96	USA-P03-070	USA-P03-113	2-Minor Technical	P03-07.01.04, ST_StartPoint Method	PS Not explicit enough about 2D behavior. Should return m values as well since it is an observer-like method. <b>Solution</b> Modify as follows: including existing z <b>and m</b> coordinate values	See Comment RESOLVED ☺
97	USA-P03-071		2-Minor Technical	P03-07.01.04, ST_StartPoint Method	DS 3) Since only one point is returned, there is only a single z value. <b>Solution</b> Change “values are” to “value is”	See Comment RESOLVED ☺
98	USA-P03-072	USA-P03-113	2-Minor Technical	P03-07.01.04, ST_StartPoint Method	DS Should return m values as well since it is an observer-like method. <b>Solution</b> Add an additional Description: If <i>SELF.ST_IsMeasured()</i> is equal to 1 (one), then the m coordinate value is included in the resultant geometry.	See Comment RESOLVED ☺
99	USA-P03-073	USA-P03-113	2-Minor Technical	P03-07.01.05, ST_EndPoint Method	PS Not explicit enough about 2D behavior. Should return m values as well since it is an observer-like method. <b>Solution</b> Modify as follows: including existing z <b>and m</b> coordinate values	See Comment RESOLVED ☺
100	USA-P03-074		2-Minor Technical	P03-07.01.05, ST_EndPoint Method	DS 3) Since only one point is returned, there is only a single z value. <b>Solution</b> Change “values are” to “value is”	See Comment RESOLVED ☺

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
101	USA-P03-075	USA-P03-113	2-Minor Technical	P03-07.01.05, <i>ST_EndPoint Method</i>	DS Should return m values as well since it is an observer-like method. <b>Solution</b> Add an additional Description: If <i>SELF.ST_IsMeasured()</i> is equal to 1 (one), then the m coordinate value is included in the resultant geometry.	See Comment RESOLVED ☺
102	USA-P03-076	USA-P03-113	2-Minor Technical	P03-07.01.06, <i>ST_IsClosed Method</i>	PS Not explicit enough about 2D behavior. Should ignore m values since the first and last points of a closed curve can have the same location but a different start and end measured value. <b>Solution</b> Modify as follows: ignoring z <b>and m</b> coordinate values in the calculations.	See Comment RESOLVED ☺
103	USA-P03-077	USA-P03-113	2-Minor Technical	P03-07.01.06, <i>ST_IsClosed Method</i>	DS Should ignore m values since the first and last points of a closed curve can have the same location but a different start and end measured value. <b>Solution</b> Add an additional Description: If <i>SELF.ST_IsMeasured()</i> is equal to 1 (one), then the m coordinate values are not considered in the calculation.	See Comment RESOLVED ☺
104	USA-P03-078	USA-P03-113	2-Minor Technical	P03-07.01.07, <i>ST_3DIsClosed Method</i>	DS Should ignore m values since the first and last points of a closed curve can have the same location but a different start and end measured value. <b>Solution</b> Add an additional Description: If <i>SELF.ST_IsMeasured()</i> is equal to 1 (one), then the m coordinate values are not considered in the calculation.	See Comment RESOLVED ☺
105	USA-P03-079	USA-P03-113	2-Minor Technical	P03-07.01.08, <i>ST_IsRing Method</i>	PS Not explicit enough about 2D behavior. Should ignore m values since the first and last points of a ring can have the same location but a different start and end measured value. <b>Solution</b> Modify as follows: ignoring z <b>and m</b> coordinate values in the calculations.	See Comment RESOLVED ☺

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
106	USA-P03-080	USA-P03-113	2-Minor Technical	P03-07.01.08, ST_IsRing Method	DS Should ignore m values since the first and last points of a ring can have the same location but a different start and end measured value. <b>Solution</b> Add an additional Description: If <i>SELF.ST_IsMeasured()</i> is equal to 1 (one), then the m coordinate values are not considered in the calculation.	See Comment RESOLVED ☺
107	USA-P03-081	USA-P03-113	2-Minor Technical	P03-07.01.09, ST_3DIsRing Method	DS Should ignore m values since the first and last points of a closed curve can have the same location but a different start and end measured value. <b>Solution</b> Add an additional Description: If <i>SELF.ST_IsMeasured()</i> is equal to 1 (one), then the m coordinate values are not considered in the calculation.	See Comment RESOLVED ☺
108	USA-P03-082	USA-P03-113	2-Minor Technical	P03-08.01.02, ST_Area Methods	PS m coordinate values also ignored according to Description 2) a) ii) and DS 4) d) ii) <b>Solution</b> Modify Purpose as follows: “... z <b>and m</b> coordinate values...”	See Comment RESOLVED ☺
109	USA-P03-083	USA-P03-113	2-Minor Technical	P03-08.01.04, ST_Perimeter Methods	PS m coordinate values also ignored according to Description 2) a) ii) and DS 4) d) ii) <b>Solution</b> Modify Purpose as follows: “... z <b>and m</b> coordinate values...”	See Comment RESOLVED ☺
110	USA-P03-084	USA-P03-113	2-Minor Technical	P03-08.01.06, ST_Centroid Method	PS m coordinate values also ignored according to Description 2) b) iii) <b>Solution</b> Modify Purpose as follows: “... z <b>and m</b> coordinate values...”	See Comment RESOLVED ☺
111	USA-P03-085	USA-P03-113	2-Minor Technical	P03-08.01.08, ST_PointOnSurface Method	PS m coordinate values also ignored according to Description 2) b) iii) <b>Solution</b> Modify Purpose as follows: “... z <b>and m</b> coordinate values...”	See Comment RESOLVED ☺

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
112	USA-P03-086	USA-P03-113	2-Minor Technical	P03-08.01.10, <i>ST_IsWorld Method</i>	DS Should ignore z values in accordance with the Purpose. <b>Solution</b> Add an additional Description: If <i>SELF.ST_Is3D()</i> is equal to 1 (one), then the z coordinate values are not considered in the calculation.	See Comment RESOLVED ☺
113	USA-P03-087		2-Minor Technical	P03-08.02.02, <i>ST_CurvePolygon Methods</i>	DS 10b, 12b ST_PrivateCoordinateDimension is not set to “2”; it is set to ST_GetCoordDim(acurve) by the ST_ExteriorRing mutator method. <b>Solution</b> Replace “2” with “ST_GetCoordDim(acurve)”.	See Comment RESOLVED ☺
114	USA-P03-088		2-Minor Technical	P03-08.02.02, <i>ST_CurvePolygon Methods</i>	DS 14b, 16b ST_PrivateCoordinateDimension is not set to 2; it is set to ST_GetCoordDim(acurve), by the ST_ExteriorRing mutator method, if acurvearray is empty or has the same Is_3D and Is_Measured values as acurve. <b>Solution</b> Replace “2” with “ST_GetCoordDim(acurve, SELF.ST_PrivateInteriorRings)”.	See Comment Amend: Replace "SELF.ST_PrivateInteriorRings" with "acurvearray" RESOLVED ☺
115	USA-P03-089		2-Minor Technical	P03-08.02.04, <i>ST_InteriorRings Methods</i>	DEFN 2 In 8.2.2, the ST_CurvePolygon(ST_Curve) constructor casts an empty array into an empty ST_Curve ARRAY. Presumably the SRID is set to 0 ? If the SRID is indeed zero, then the ST_InteriorRings mutator called by the constructor will fail with “mixed spatial reference systems” if the ST_CurvePolygon has an SRID <math>\neq 0</math>. <b>Solution</b> None provided with comment.	CJU-028 RESOLVED ☺
116	USA-P03-090		2-Minor Technical	P03-08.02.04, <i>ST_InteriorRings Methods</i>	DS 4 Wrong method signature. <b>Solution</b> Modify as follows: 4) For the type preserving method <i>ST_InteriorRings(ST_Curve ARRAY)</i> :	See Comment RESOLVED ☺
117	USA-P03-091		2-Minor Technical	P03-08.03.02, <i>ST_Polygon Methods</i>	DS 10b, 12b ST_PrivateCoordinateDimension is not set to “2”; it is set to ST_GetCoordDim(alinestring) by the ST_ExteriorRing mutator method. <b>Solution</b> Replace “2” with “ST_GetCoordDim(alinestring)”.	See Comment RESOLVED ☺

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
118	USA-P03-092		2-Minor Technical	P03-08.03.02, ST_Polygon Methods	DS 14b, 16b ST_PrivateCoordinateDimension is not set to 2; it is set to ST_GetCoordDim(alinestring), by the ST_ExteriorRing mutator method, if alinestringarray is empty or has the same Is_3D and Is_Measured values as alinestring.  <b>Solution</b> Replace “2” with “ST_GetCoordDim(alinestring, SELF.ST_PrivateInteriorRings)”.	See Comment Amend: Replace "SELF.ST_PrivateInteriorRings" with "alinestringarray" RESOLVED ☺
119	CAN-P03-006		1-Major Technical	P03-08.04.01, ST_Triangle Type	A triangle is 3D planar and has slope. The ST_Triangle type should provide a slope method.  <b>Solution</b> None provided with comment.	LCY-010R1 RESOLVED ☺
120	CAN-P03-021	USA-P03-093	1-Major Technical	P03-08.04.01, ST_Triangle Type	<b>PP 3-407:</b> The Attributes: ST_PrivateExteriorRing and ST_PrivateInteriorRings are already defined in the supertype ST_CurvePolygon and would be inherited by ST_Triangle. They do not need to be defined here again.  <b>Solution</b> None provided with comment.	Resolved by action on #122 USA-P03-093 RESOLVED ☺
121	CAN-P03-020		2-Minor Technical	P03-08.04.01, ST_Triangle Type	ST_PrivateVisibility may be either 1 or NULL for the visibility. NULL should not be used as an alternate value. Change the definition to only use the value 1  <b>Solution</b> None provided with comment.	LCY-009 RESOLVED ☺
122	USA-P03-093	CAN-P03-021	2-Minor Technical	P03-08.04.01, ST_Triangle Type	DEFN The Attributes: ST_PrivateExteriorRing and ST_PrivateInteriorRings are already defined in the supertype ST_CurvePolygon and would be inherited by ST_Triangle. They do not need to be defined here again.  <b>Solution</b> Delete these two attributes. Close Editor’s Note 4-407.	See Comment RESOLVED ☺

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
123	USA-P03-094	CAN-P03-022	2-Minor Technical	P03-08.04.01, ST_Triangle Type	<p>DR 3) ST_MaxGeometryAsText is also used for the GML representation of an ST_Geometry value. This needs to be fixed wherever Definition Rule 3) occurs. Note also that there are 59 occurrences of ST_MaxGeometryAsGML in the document and that there may be an opportunity to replace them with ST_MaxGeometryAsText.</p> <p><b>Solution</b> Change DR 3) (here and wherever else is appropriate) as follows: ST_MaxGeometryAsText is the implementation-defined maximum cardinality of the CHARACTER LARGE OBJECT used for the well-known text <b>and GML</b> representations of an ST_Geometry value.</p> <p>Review existing occurrences of ST_MaxGeometryAsGML for possible further changes.</p>	See Comment LCY-034 RESOLVED ☺
124	CAN-P03-022	USA-P03-094	3-Major Editorial	P03-08.04.01, ST_Triangle Type	<p><b>PP 3-408:</b> ST_MaxGeometryAsText is also used for the GML representation of an ST_Geometry value. This needs to be fixed wherever Definition Rule 3) occurs.</p> <p><b>Solution</b> None provided with comment.</p>	LCY-034 RESOLVED ☺
125	CAN-P03-023		1-Major Technical	P03-08.04.02, ST_Patches Methods	<p><b>PP 3-412:</b> The interior of the linestring of intersection between any two polygons in the surface must not intersect with the boundary of any other polygon in the surface. If not, raise an exception</p> <p><b>Solution</b> None provided with comment.</p>	LCY-011 RESOLVED ☺
126	CAN-P03-024		1-Major Technical	P03-08.04.02, ST_Triangle Methods	<p><b>PP 3-409:</b> ST_Triangle does not have an overriding method ST_ExteriorRing. As such, the ST_ExteriorRing method from the ST_Polygon (superclass) is executed and it sets the ST_PrivateInteriorRings of its superclass ST_CurvePolygon. The coordinate dimensions of ST_CurvePolygon and ST_Polygon are set properly with the support routines used by these types.</p> <p><b>Solution</b> None provided with comment.</p>	

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
127	CAN-P03-025	USA-P03-095	1-Major Technical	P03-08.04.02, ST_Triangle Methods	<p><b>PP 3-410:</b> ST_Points(ST_Point ARRAY) should be FOR ST_Triangle and return an ST_Triangle value. This code could also simply reuse the code in ST_Points of ST_LineString, it could be simply:</p> <pre>CREATE METHOD ST_Points (apointarray ST_Point ARRAY[ST_MaxGeometryArrayElements]) RETURNS ST_Triangle FOR ST_Triangle BEGIN   IF CARDINALITY(apointarray) &lt;&gt; 4 THEN     SIGNAL SQLSTATE '2FF02'     SET MESSAGE_TEXT = 'invalid argument';   END IF;   RETURN   SELF.ST_ExteriorRing(NEW ST_LineString(apointarray)); END</pre> <p style="text-align: center;"><b>Solution</b></p> <p>None provided with comment.</p>	Resolved by action on #128 USA-P03-095 RESOLVED ☺
128	USA-P03-095	CAN-P03-025	2-Minor Technical	P03-08.04.03, ST_Points Methods	<p>DEFN 2 ST_Points(ST_Point ARRAY) should be FOR ST_Triangle and return an ST_Triangle value. This code could also simply reuse the code in ST_Points of ST_LineString.</p> <p style="text-align: center;"><b>Solution</b></p> <p>Replace the mutator code with that which is suggested in Editor's Note 3-410. Close Editor's Note 3-410.</p>	See Comment RESOLVED ☺
129	CAN-P03-026		2-Minor Technical	P03-08.04.06, ST_Visibility Methods	<p>There are no checks that ST_Visibility is either -1, 0, 1. An exceptions should be generated if the value is not in the set of allowable values.</p> <p style="text-align: center;"><b>Solution</b></p> <p>None provided with comment.</p>	LCY-009 RESOLVED ☺
130	CAN-P03-027	USA-P03-096 JPN-P03-002	1-Major Technical	P03-08.05.01, ST_TIN Type	<p><b>PP 3-413:</b> The ST_PrivatePatches attribute cannot be overridden in this manner. ST_PolyhedralSurface.ST_PrivatePatches type specific to ST_Triangles by overriding the ST_Patches access/mutator methods as was done was done with ST_Polygon to make it the rings specifically ST_LineStrings.</p> <p style="text-align: center;"><b>Solution</b></p> <p>None provided with comment.</p>	Resolved by action on #132 USA-P03-096 RESOLVED ☺

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
131	CAN-P03-028		1-Major Technical	P03-08.05.03, ST_Patches Methods	<b>PP 3-411:</b> Every polygon must intersect the boundary of at least one other polygon in the surface. The intersection must be a (multi)linestring. If not, raise an exception <b>Solution</b> None provided with comment.	LCY-011 RESOLVED ☺
157	JPN-P03-002	CAN-P03-027 USA-P03-096	1-Major Technical	P03-08.06.01, ST_TIN Type	In the type definition of ST_TIN type, the ST_PrivatePatches attribute that has ST_Triangle type is specified as an attribute of ST_TIN type, but that definition is syntax error in SQL specification of ISO/IEC 9075, because ST_PolyhedralSurface type that is the supertype of ST_TIN type has the attribute with same name. In SQL specification of ISO/IEC 9075, an attribute cannot be overridden. <b>Solution</b> None provided with comment.	Resolved by action on #132 USA-P03-096 RESOLVED ☺
132	USA-P03-096	CAN-P03-027 JPN-P03-002	2-Minor Technical	P03-08.06.01, ST_TIN Type	DEFN The Attribute ST_PrivatePatches cannot be overridden in this manner. ST_Patches overriding observer/mutator methods are defined for this purpose. <b>Solution</b> Delete the attribute here. Close Editor's Note 3-413.	See Comment RESOLVED ☺
158	JPN-P03-002		3-Major Editorial	P03-08.06.01, ST_TIN Type	The phrase "maximum cardinality of the BINARY LARGE OBJECT" in Definitional Rules 2), and the phrase "maximum cardinality of the CHARACTER LARGE OBJECT" in Definitional Rules 3) are invalid. <b>Solution</b> Replace "maximum cardinality of the BINARY LARGE OBJECT" with "maximum length of the BINARY LARGE OBJECT" in Definitional Rules 2). Replace "maximum cardinality of the CHARACTER LARGE OBJECT" with "maximum length of the CHARACTER LARGE OBJECT" in Definitional Rules 3).	See Comment LCY-033 RESOLVED ☺
159	JPN-P03-003		3-Major Editorial	P03-08.06.01, ST_TIN Type	The ST_PrivatePatches attribute is itself of collection. Therefore the phrase "ST_PrivatePatches attribute collection" in Description 5) gives misleading information. <b>Solution</b> Replace "an ST_Triangle value in the ST_PrivatePatches attribute collection" with "an ST_Triangle value that is an element in the ST_PrivatePatches attribute".	See Comment RESOLVED ☺

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
160	JPN-P03-004		3-Major Editorial	P03-08.06.01, ST_TIN Type	<p>The ST_PrivatePatches attribute is of collection. The ST_PrivateElements attribute is of collection, too. Therefore the phrase “ST_PrivatePatches attribute collection” and the phrase “ST_PrivateElements attribute collection” in Description 7) give misleading information.</p> <p style="text-align: center;"><b>Solution</b></p> <p>Replace</p> <p>“The spatial reference systems of the ST_PrivatePatches attribute collection of ST_Triangle values and of all the ST_Geometries contained within the ST_PrivateElements attribute attribute collection of ST_TINElement values shall be equal to the spatial reference system of their ST_TIN value.”</p> <p>With</p> <p>“The spatial reference systems of the ST_PrivatePatches attribute that is a collection of ST_Triangle values and of all the ST_Geometries contained within the ST_PrivateElements attribute that is a collection of ST_TINElement values shall be equal to the spatial reference system of their ST_TIN value.”</p>	See Comment RESOLVED ☺
161	JPN-P03-002		3-Major Editorial	P03-08.06.02, ST_TIN Methods	<p>The phrase “maximum cardinality of the BINARY LARGE OBJECT” in Definitional Rules 2), and the phrase “maximum cardinality of the CHARACTER LARGE OBJECT” in Definitional Rules 3) are invalid.</p> <p style="text-align: center;"><b>Solution</b></p> <p>Replace “maximum cardinality of the BINARY LARGE OBJECT” with “maximum length of the BINARY LARGE OBJECT” in Definitional Rules 2). Replace “maximum cardinality of the CHARACTER LARGE OBJECT” with “maximum length of the CHARACTER LARGE OBJECT” in Definitional Rules 3).</p>	LCY-033 RESOLVED ☺
133	CAN-P03-029		1-Major Technical	P03-08.06.03, ST_TINElements	<p>The resulting TIN from the input of the array of TINElement is implementation defined. With the complexity and variety of TINElements, there must be invalid combinations that would cause exceptions. This section should be defined implementation-defined/dependent and that any exceptions are also implementation-defined/dependent.</p> <p style="text-align: center;"><b>Solution</b></p> <p>None provided with comment.</p>	CJU-029 RESOLVED ☺

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
134	USA-P03-097		2-Minor Technical	P03-08.06.05, ST_TINTable Methods	DS Voids can have holes bounded by the Interior Rings of the void's polygon. There is no current ability to input or output the holes from/to the TIN Table.  <b>Solution</b> None provided with comment.	CJU-018R1 RESOLVED ☺
135	USA-P03-098	USA-P03-113	2-Minor Technical	P03-09.03.01, ST_MultiCurve Type	DS 6) m coordinate values must also be ignored <b>Solution</b> Add to both Descriptions: c) If <i>SELF.ST_IsMeasured()</i> is equal to 1 (one), then the m coordinate values are not considered in the calculation.	See Comment RESOLVED ☺
136	USA-P03-099	USA-P03-113	2-Minor Technical	P03-09.03.03, ST_IsClosed Method	PS Not explicit enough about 2D behavior. Should ignore m values since the first and last points of a closed curve can have the same location but a different start and end measured value.  <b>Solution</b> Modify as follows: ignoring z <b>and m</b> coordinate values in the calculations .	See Comment RESOLVED ☺
137	USA-P03-100	USA-P03-113	2-Minor Technical	P03-09.03.03, ST_IsClosed Method	DS Should ignore m values since the first and last points of a closed curve can have the same location but a different start and end measured value. <b>Solution</b> Add an additional Description: If <i>SELF.ST_IsMeasured()</i> is equal to 1 (one), then the m coordinate values are not considered in the calculation.	See Comment RESOLVED ☺
138	USA-P03-101	USA-P03-113	2-Minor Technical	P03-09.03.04, ST_3DIsClosed Method	DS Should ignore m values since the first and last points of a closed curve can have the same location but a different start and end measured value. <b>Solution</b> Add an additional Description: If <i>SELF.ST_IsMeasured()</i> is equal to 1 (one), then the m coordinate values are not considered in the calculation.	See Comment RESOLVED ☺
139	USA-P03-102	USA-P03-113	2-Minor Technical	P03-09.03.05, ST_Length Methods	PS Not explicit enough about 2D behavior. Should agree with DS 2) a) ii) and DS 4) d) ii).  <b>Solution</b> Modify as follows: ignoring z <b>and m</b> coordinate values in the calculations .	See Comment RESOLVED ☺

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
140	USA-P03-103	USA-P03-113	2-Minor Technical	P03-09.05.03, ST_Area Methods	PS m coordinate values also ignored according to Description 2) a) ii) and DS 4) d) ii)  <b>Solution</b> Modify Purpose as follows: “... z <b>and m</b> coordinate values...”	See Comment RESOLVED ☺
141	USA-P03-104	USA-P03-113	2-Minor Technical	P03-09.05.05, ST_Perimeter Methods	PS m coordinate values also ignored according to Description 2) a) ii) and DS 4) d) ii)  <b>Solution</b> Modify Purpose as follows: “... z <b>and m</b> coordinate values...”	See Comment RESOLVED ☺
142	USA-P03-105	USA-P03-113	2-Minor Technical	P03-09.05.07, ST_Centroid Method	PS m coordinate values also ignored according to Description 2) b) iii)  <b>Solution</b> Modify Purpose as follows: “... z <b>and m</b> coordinate values...”	See Comment RESOLVED ☺
143	USA-P03-106	USA-P03-113	2-Minor Technical	P03-09.05.09, ST_PointOnSurface Method	PS m coordinate values also ignored according to Description 2) b) iii)  <b>Solution</b> Modify Purpose as follows: “... z <b>and m</b> coordinate values...”	See Comment RESOLVED ☺
144	CAN-P03-030		2-Minor Technical	P03-10.03.12, ST_AddEdgeNew Faces Function	<b>PP 3-401:</b> DS 2 needs to also test for coincident edge in the opposite direction  <b>Solution</b> None provided with comment.	LCY-015 RESOLVED ☺
145	CAN-P03-031		2-Minor Technical	P03-10.03.13, ST_AddEdgeMod Face Function	<b>PP 3-403:</b> DS 2 needs to also test for coincident edge in the opposite direction  <b>Solution</b> None provided with comment.	LCY-015 RESOLVED ☺
146	CAN-P03-032		2-Minor Technical	P03-11.01.14, ST_AsText Method	<b>Spatial Opportunity 3-302:</b> There are three possible representations defined in <angle text representation>. ST_AsText() does not clearly define which format to produce. This behaviour is an implementation-dependent. This UDF should be changed to make this behaviour implementation-defined and to overload the UDF by defining an ST_AsText(units CHARACTER(1)) method (where units is 'R', 'D' or 'G') to explicitly direct the method to produce a specific format.  <b>Solution</b> None provided with comment.	Closed as Spatial Opportunity 3-414 RESOLVED ☺

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
147	CAN-P03-033		1-Major Technical	P03-15.01.01, ST_TInElement	<p>In Description 9) a) if the <i>ST_PrivateElementType</i> = 'random points', then <i>ST_Geometry.ST_GeometryType</i> = 'ST_MultiPoint' and <i>ST_Geometry.ST_Is3D</i> = 1 (one),</p> <p><i>ST_Geometry.ST_GeometryType</i> is not correct since <i>ST_Geometry</i> is a type, not a value. <i>ST_Geometry</i> probably should be changed to <i>SELF.ST_PrivateElementGeometry</i> throughout the definition of <i>ST_TInElement</i>. There may be other similar uses of types in a value expression and they need to be fixed everywhere.</p> <p style="text-align: center;"><b>Solution</b></p> <p>None provided with comment.</p>	CJU-029 RESOLVED ☺
148	CAN-P03-034		1-Major Technical	P03-15.01.01, ST_TInElement	<p>In Description 9). From this description, it appears that it does not allow the value of <i>ST_PrivateElementType</i> to be implementation-defined (ie the only set of values of <i>ST_PrivateElementType</i> are defined in a) – k). And no others. Rule l) indicates that any of the element types define in a) – k) are defined but the geometry value conditions are not met, then the alternate conditions are implementation-defined.</p> <p style="text-align: center;"><b>Solution</b></p> <p>None provided with comment.</p>	CJU-029 (not resolved) LCY-012 RESOLVED ☺
149	CAN-P03-035		1-Major Technical	P03-15.01.01, ST_TinElement	<p>In Description 12 "mutate the <i>ST_TIN.ST_Boundary</i> value", <i>ST_TIN</i> is a type, not a value and should not be used in the expression <i>value.method</i>. Perhaps text like "define the boundary in the resulting <i>ST_TIN</i> value". Also, there is no mutator on the <i>ST_TIN</i> type to mutate its boundary. There may be other similar uses of types in a value expression and they need to be fixed everywhere.</p> <p style="text-align: center;"><b>Solution</b></p> <p>None provided with comment.</p>	LCY-013 RESOLVED ☺
150	CAN-P03-037		2-Minor Technical	P03-15.01.01, ST_TinElement	<p>In Description 25) Change "whether <i>ST_PrivatePatches</i> attribute collection <i>ST_Triangle</i> values "</p> <p style="text-align: center;"><b>Solution</b></p> <p>See comment.</p>	See Comment RESOLVED ☺

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
151	CAN-P03-036		3-Major Editorial	P03-15.01.01, ST_TinElement	<p>In:</p> <p>14) a) one of the <i>ST_Point</i> values in the <i>ST_Triangle ST_PrivateExteriorRing ST_Point</i> collection 3DEquals one of the <i>ST_Point</i> values in the <i>ST_LineString.ST_PrivatePoints ST_Point</i> collection of the breakline, or</p> <p>Change "3DEqual" to "is spatially 3D equal to Change "ST_Triangle ST_PrivateExteriorRing ST_Point" to the "ST_PrivateExteriorRing attribute of the ST_Triangle value" or declare a variable for the ST_Triangle value and just use TR1.PrivateExteriorRing".</p> <p>Similar phrasing in this subclause needs to be addressed.</p> <p style="text-align: center;"><b>Solution</b></p> <p>None provided with comment.</p>	CJU-029 RESOLVED ☺
152	CAN-P03-038		1-Major Technical	P03-15.01.03, ST_TINType Method	<p>This method uses ST_IsEmpty(). ST_TINElement does not have a definition for ST_IsEmpty() (and its not inherited from ST_Geometry because is not a subtype of ST_Geometry).</p> <p style="text-align: center;"><b>Solution</b></p> <p>None provided with comment.</p>	LCY-014R1 RESOLVED ☺

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
153	CAN-P03-039		1-Major Technical	P03-16, Topology-Geometry	<p><b>Spatial Opportunity 3-405:</b>  There is no specification how the occurrences for each topology are represented in the base tables, nor selected for the views.  The requirement for supporting views in multiple schemas imposes a significant burden on both the specification of the standard and its implementation.  "SELECT privilege on all of these views may be granted to individual users so that they can be queried." is an inadequate description that does not determine how it applies to the schema for each topology.  There is no specification of how the tables with names such as ST_NODE relate to the undefined types, such as "node type of topological primitives (ST_Node)". Views and base tables are described as containing a type, whereas they can only contain representations of occurrences.  There is confused use of &lt;topology-name&gt;, with and without italics, sometimes as a schema name and sometimes as "&lt;topology-name&gt; Topology-Geometry", (whatever that might be), and "<i>atopology</i>" seems to be used for a similar purpose.  The CREATE VIEW statements do not define views in the required schemas unless executed in an appropriate session.  Updating routines should be defined in terms of changes to base tables.  Updating routines should be defined as procedures, not functions.</p> <p style="text-align: center;"><b>Solution</b></p> <p>See wlg017 Support for UK Spatial Comment".</p>	Closed as Spatial Opportunity 3-414 RESOLVED ☺
154	USA-P03-107		2-Minor Technical	P03-20.03, Claims of conformance	<p>3) Which of the following optional user-defined types and routines are supported:  missing method</p> <p style="text-align: center;"><b>Solution</b></p> <p>Add:  q+1) The method ST_3DEquals(ST_Geometry) (Subclause 5.1.34+1, "ST_3DEquals Method").</p>	See Comment RESOLVED ☺

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
165	USA-P03-108		2-Minor Technical	P03-99, Annex A	<p>missing method</p> <p><b>Solution</b></p> <p>After 33) Subclause 8.1.2, "ST_Area Methods" add:</p> <p>30 Subclause 8.1.3, "ST_3DArea Methods"</p> <p>a) Description 2) a) ii)</p> <p>Otherwise, return the implementation-defined area of SELF, such that z (but not m) coordinate values are not considered in the calculation, as measured in its spatial reference system.</p> <p>b) Description 2) b) ii)</p> <p>Otherwise, the value returned by <i>ST_3DArea()</i> is in an implementation-defined unit of measure.</p> <p>c) Description 4) d) ii)</p> <p>Otherwise, return the implementation-defined area of SELF, such that z (but not m) coordinate values are considered in the calculation, as measured in its spatial reference system.</p>	See Comment RESOLVED ☺
166	USA-P03-109	USA-P03-113	2-Minor Technical	P03-99, Annex A	<p>mistakes in:</p> <p>11) Subclause 5.1.33, "ST_3DDistance Methods"</p> <p>c) Description 4) d) iv),</p> <p>22) Subclause 7.1.3, "ST_3DLength Methods"</p> <p>a) Description 2) a) ii),</p> <p>c) Description 4) d) ii),</p> <p>35) Subclause 8.1.5, "ST_3DPerimeter Methods"</p> <p>a) Description 2) a) ii),</p> <p><b>ac</b>) Description 4) d) ii)</p> <p><b>Solution</b></p> <p>Modify as follows:</p> <p>... z <del>and m</del> <b>(but not m)</b> coordinate values are <del>not</del> considered ...</p>	See Comment RESOLVED ☺
162	CHN-P03-004		3-Major Editorial	P03-99, Annex D	<p>For the title:</p> <p>The date is wrong.</p> <p><b>Solution</b></p> <p>Propose to replace "13249-3:2003" with "13249-3:2006"</p>	See Comment RESOLVED ☺
163	CHN-P03-005		3-Major Editorial	P03-99, Annex D	<p>For the first paragraph:</p> <p>The date is wrong.</p> <p><b>Solution</b></p> <p>Propose to replace "13249-3:2003" with "13249-3:2006"</p>	See Comment RESOLVED ☺

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
167	CHN-P03-006		3-Major Editorial	P03-99, Annex D	For the second paragraph:  The date is wrong.  <b>Solution</b> Propose to replace “13249-3:2003”with“13249-3:2006”	See Comment RESOLVED ☺
168	CHN-P03-007		3-Major Editorial	P03-99, Annex D	For the first and second item:  The two items are the incompatibilities of ISO/IEC 13249-3:2006 with ISO/IEC 13249-3:2003 ,not the incompatibilities of ISO/IEC 13249-3:201X with ISO/IEC 13249-3:2003;  <b>Solution</b> Propose to remove this two items.	See Comment RESOLVED ☺
169	USA-P03-115	CAN-P03-012 USA-P03-114 JPN-P03-001 GBR-P03-004	2-Minor Technical	P03-99, Annex E	Bibliography missing addition as per agreed change at Portugal WG4 meeting  <b>Solution</b> Add the following reference: [2+1] de Berg, Mark, Marc van Kreveld, Mark Overmars, and Otfried Schwarzkopf, <i>Computational Geometry, Algorithms and Applications</i> , Springer-Verlag, 1997.	See Comment RESOLVED ☺
164	GBR-P03-004	CAN-P03-012 USA-P03-114 USA-P03-115 JPN-P03-001	3-Major Editorial	P03-99, Bibliography	A bibliographic reference is required for the Delaunay algorithm.  <b>Solution</b> None provided with comment.	Resolved by action on #033 USA-P03-114 and #169 USA-P03-115 RESOLVED ☺
170	CAN-P03-040		1-Major Technical	P03-No specific location	All Possible Problems and Editor’s Notes must be satisfactorily resolved and all problems discovered during the course of the ballot resolution process must be satisfactorily resolved.  <b>Solution</b> None provided with comment.	(Catch All)
171	CAN-P03-043		1-Major Technical	P03-No specific location	In a similar manner as OGC GML, Add support for OGC KML  <b>Solution</b> None provided with comment.	
172	DEU-P03-001		1-Major Technical	P03-No specific location	There are many possible problems that have to be solved.  <b>Solution</b> None provided with comment.	(Catch All)
173	DEU-P03-002		1-Major Technical	P03-No specific location	SQL functions e.g. Euclid distance or mean value for spatial objects are especially expected to reduce spatial data uncertainty problem.  <b>Solution</b> None provided with comment.	

SEQ #	Cmnt ID	See Also	Severity	Reference	Description	Addressed By
174	GBR-P03-001		1-Major Technical	<i>P03-No specific location</i>	As appropriate, all new material should be consistent with corresponding specifications in TC204 and TC211, and referenced accordingly. <b>Solution</b> None provided with comment.	LCY-018 RESOLVED ☺
175	JPN-P03-005		1-Major Technical	<i>P03-No specific location</i>	All Possible Problems, Editor's Notes and problems raised during editing meetings must be resolved. <b>Solution</b> None provided with comment.	(Catch All)
176	USA-P03-116		1-Major Technical	<i>P03-No specific location</i>	All Possible Problems and Editor's Notes must be satisfactorily resolved and all problems discovered during the course of the ballot resolution process must be satisfactorily resolved. <b>Solution</b> None provided with comment.	CJU-014R1 (partial) LCY-016 (partial) LCY-033 (partial) (Catch All)
177	CAN-P03-041		3-Major Editorial	<i>P03-No specific location</i>	Newer text in the CD is not consistent: change "z value" to "z coordinate value" and "m value to m coordinate value" to be consistent. <b>Solution</b> See comment.	LCY-017 RESOLVED ☺
178	CAN-P03-042		3-Major Editorial	<i>P03-No specific location</i>	In the past the CD had defined and attribute as a collection in the following manner:  3) The <i>ST_PrivateInteriorRings</i> attribute is a collection of <i>ST_LineString</i> values Then it is referenced as " <i>ST_PrivateInteriorRings</i> attribute" not " <i>ST_PrivateInteriorRings</i> attribute collection".  However, the Triangle/TIN paper is using "attribute collection" when "attribute" attribute will do because the attribute is already defined as a collection. <b>Solution</b> None provided with comment.	CJU-029 RESOLVED ☺
179	USA-P03-112		1-Major Technical	<i>P03-Various locations</i>	The advent of 3D routine changes made to the 3 <sup>rd</sup> edition clarified z coordinate consideration and retention in most applicable cases. Remaining instances need to be addressed. Similar treatment should also be done for m coordinates. Comments having this comment number as a "See Also" cite specific instances and proposed solutions but there may be other instances which need to be addressed as well. <b>Solution</b> None provided with comment.	(Catch All)

Additional Possible Problems in SQL/MM Part 3: Spatial (4th Edition) resulting from actions taken at the first CD Editing meeting held in Jeju, Korea on June 23th to June 25th, 2009:

			1-Major Technical	<i>P06-09.01.01, ST_MultiPolygon Type</i>	<p><b>PP 3-416:</b> CJU-014R1 removes the following rule:</p> <p>4) The boundaries of any two <i>ST_Polygon</i> values that are coplanar elements of the <i>ST_PrivateGeometries</i> attribute may only intersect at a finite number of points.</p> $\forall m \in ST\_MultiPolygon, \forall p_i, p_j \in m.ST\_Geometries() \quad p_i, p_j \text{ coplanar, } \forall c_i \in \text{Boundary}(p_i), c_j \in \text{Boundary}(p_j) \quad c_i \cap c_j = \{ p_1, \dots, p_k \mid p_i \in ST\_Point, 1 \leq i \leq k \}$ <p>By removing this rule, current implementations of SQL/MM Spatial are no longer compatible, ie a breaking change. It was done to supposedly align with ISO 19107. However, ISO 19107 does not define a type called MultiPolygon. This change should be reversed and if there is some need to have a type that does not have this restriction, then another subtype of <i>ST_MultiSurface</i> should be defined.</p> <p style="text-align: center;"><b>Solution</b></p> <p>Reinstate the deleted rule.</p>	
			1-Major Technical	<i>P06-09.01.01, ST_MultiPolygon Type</i>	<p><b>PP 3-417:</b> The definition of the boundary of an <i>ST_MultiPolygon</i> needs to be reworded as a result of this paper and the paper entitled mod 2 [CJU-015R1].</p> <p style="text-align: center;"><b>Solution</b></p> <p>None provided with comment.</p>	
			1-Major Technical	<i>P03-03.01.02.36, mod 2 union rule</i>	<p><b>PP 3-418:</b> Applying the mod 2 union rule to determine the boundary of a geometry collection gives erroneous results. An alternative approach is required.</p> <p style="text-align: center;"><b>Solution</b></p> <p>None provided with comment.</p>	
			2-Minor Technical	<i>P03-05.01.35, ST_3DEquals</i>	<p><b>PP 3-419:</b> The PSM definition of <i>ST_3DEquals</i> does not match DS 2) (i.e. the PSM code does not raise an exception).</p> <p style="text-align: center;"><b>Solution</b></p> <p>None provided with comment.</p>	LCY-016 RESOLVED ☺