

PPDM Association
Head Office: Bankers Hall PO Box 22155
Calgary, Alberta T2P 4J5
(phone) +1 (403) 660-7817
(fax) +1 (403) 660-0540
info@ppdm.org ♦ www.ppdm.org



Houston Office: PO Box 79114
Houston, TX 77279-9114
(phone) +1 (713) 819-1739
(fax) +1 (713) 465-7811
houston@ppdm.org ♦ www.ppdm.org

PPDM COMPLIANCE Technical Specifications

(Approved by Board of Directors 18 December 1997, Updated 28 March 2002)

CONTENTS:

A. Compliance General Characteristics	1
B. Compliance Rating Definition	1
C. Compliance Provisos	3
Appendix I: Gold Level Compliance Percentage Indicator Definition	6

A. Compliance General Characteristics

1. The PPDM Compliant designation rating is given only to a product that utilizes a Production Release of the Model. The PPDM Board decides which Releases are supported at any time for Compliance review.
2. Compliance is verified only for conformance to a PPDM Version as defined by the published Data Definition Language specifications. This can only be applied to software that contains PPDM model definitions and references. Generic software tools (e.g. browser) that may access a PPDM defined database but do not contain PPDM model definitions or references cannot be measured for Compliance. The PPDM Association reserves all copyright to the term “PPDM Compliant”. The Association also reserves the right to enhance or modify the definition, characteristics or process of “PPDM Association Compliance Process”.
3. The procedure to obtain a Compliance rating is through a vendor that is approved by the PPDM Association. The PPDM Association will, from time to time, audit the technical processes and reporting of the vendor.
4. Member companies of the PPDM Association may incorporate a product’s Compliance Rating and the PPDM Association Compliance Trademark on the product and/or in their literature after registering the results of the Compliance Rating with the PPDM Association. Results will then be publicized on the PPDM Association’s web site.

B. Compliance Rating Definition

PPDM Compliance is documented in the following manner. The term “PPDM Compliant” should not be used in a general binary sense (i.e. simple yes or no) or simple percentage.

The Compliance Rating Code applies to a specific product. The product must therefore be uniquely defined by stating the vendor name, the product name and the product version number. It may also be necessary for the vendor to supply potential customers with additional information, such as the appropriate database management system or operating system environment.

The Code contains:

1. PPDM Version number.
2. Product scope: total number of tables (or views) implemented or referenced within the product, including tables that are beyond the PPDM Footprint.
3. Footprint name & size: Name of footprint published by PPDM, number of tables (or views) within the product that map to PPDM table definitions.

4. Table congruence: number of product tables in the Footprint that exactly match PPDM definitions.
5. Compliance Level: Gold (table-based) or Silver (view-based).
6. Congruence measurement (Gold Level only): a percentage indicator of the average level of compliance for all non-compliant tables within the Footprint. For a fully compliant product, this number is automatically set to 100%. Appendix 1 defines the measurement process.

The concept of the Footprint is central to the Compliance rating. The product may include functional scope or table structures that are beyond PPDM's definitions, or it may employ a different model for part of the PPDM functionality. These choices are entirely in the domain of the product vendor. PPDM Compliance is measured only for the Footprint identified by the vendor. The exception is that the vendor must include in the Footprint any table whose name matches a table anywhere in the PPDM DDL.

Gold Level Compliance is determined for software that implements the PPDM Table definitions. Table-Based Compliance offers the possibility (but no guarantee) of multiple software applications having update interoperability on the database. Referential integrity is maintained between tables with PPDM defined constraints. Unique Identification of each row of a table is maintained within the table structures by primary key unique index constraints defined by PPDM.

Silver Level Compliance is determined for software that employs database Views to mirror or represent PPDM tables. These views may not be updateable via the database system. Referential integrity between views is not guaranteed. The base tables for these views may be in any legacy schema, including older PPDM versions and other relational models.

Example One: Vendor A, Product B, Version X.y: **CRC V3.6 - 25:Land:10:7 Gold 90%**

1. The example specifies the software (including the exact version of the product) which has been assigned a Compliance Rating Code (CRC).
2. The CRC has been determined with reference to the production version of PPDM 3.6.
3. The product uses a total of 25 tables in a relational database.
4. The product's PPDM Footprint is named "Wells" and has 10 tables.
5. Within the Footprint, 7 tables are exact matches (or do not conflict as defined).
6. The Compliance type is Gold Level (Table-Based).
7. The average level of Compliance within the three (i.e. $10-7=3$) non-compliant tables is 90%.

8. The average level of Compliance within the three (i.e. 10-7=3) non-compliant tables is 90%.

Example Two: Vendor C, Product D, Version X.y: **CRC V3.6 - 100:Land:10:8 Silver**

1. The example specifies the software (including the exact version of the product) which has been assigned a Compliance Rating Code.
2. The CRC has been determined with reference to the production version PPDM 3.6.
3. The product uses a total of 100 tables in one or more databases.
4. The product includes a VIEW Footprint named "Land" and is addressing 10 PPDM tables.
5. Within the Footprint, 8 views are fully updateable to the original tables and include every column of the PPDM table definition.
6. The Compliance type is Silver Level (View-Based).

The utilization documentation includes:

1. The name of each table in the Footprint *
2. Name of the tables which are fully 100% compliant.
3. The name of each table which is not 100% compliant.
4. The congruence measurement of each non-compliant table (Gold Level only). The average of these measured values appears as the Percentage Indicator in the Compliance Rating Code.

* Note: PPDM table names are "reserved words" for the purpose of measuring compliance. Within the product, any table having a PPDM table name must be included within the Footprint, even if that table is not otherwise referenced within the Footprint. A Footprint may be composed of, or be a subset of, other footprints.

C. Compliance Provisos

Software seeking the Compliance measurement will utilize, verbatim, the DDL published by the PPDM Association. The following technical details are intended to explain the process:

General:

1. An Approved Vendor selected by the PPDM Association will conduct the technical work required to measure and document Compliance. The PPDM Association will audit the process at planned intervals.
2. A product need not use all tables or columns (or create views based upon all tables) of the PPDM if those tables, views or columns are not required by the product.
3. A product may not permanently remove or drop requirements affiliated with a PPDM table definition (e.g. primary key unique index, foreign key constraints).
4. A product may add any non-mandatory columns to a PPDM-defined table. The product may not add (alter) mandatory (not-null) columns in a PPDM defined table if that would affect update operations of other applications sharing the same database. The addition of mandatory columns or foreign keys to PPDM tables will result in the deduction of all column measurement points for that Percentage Indicator of the table. See Appendix I.
5. A product may add permanent tables or views with relationships to PPDM tables. Such additions or alterations may not add mandatory columns or mandatory foreign keys to PPDM tables, as that would affect update operation of other applications sharing the same database.
6. A product may add constructs in addition to those defined by PPDM as long as they do not interfere with operation of other applications sharing the same database.

Gold Level Compliance (Table-Based):

7. For “Table-Based” Compliance, an installed software product must be able to work upon a PPDM database schema. The “Table-Based” product must allow for other PPDM Compliant “Table-Based” products to operate on the same database installation. A product may extend the length of a column within a type (for example, a column defined as “VARCHAR 10” may be extended to “VARCHAR 12”) and still be considered Compliant. Column length may not be reduced from PPDM definitions. Installations that modify and extend PPDM defined column lengths must, during installation, verify that the current column length has not been previously modified to a larger size by another application and take appropriate action to assure no data loss during installation. The Compliance approval of an extended length column is conditional based upon the candidate organization:
 - a) Submitting the column length modification to PPDM for consideration in the next PPDM product version.
 - b) Submitting the business process requirement explaining why the column length was extended.

8. For “Table-Based” Compliance, a product must support the contents of constraints defined between tables within the Footprint. A matrix matching the product’s constraints to PPDM defined constraints must be submitted for the verification process. The names of the constraints need not match PPDM definitions.
9. For “Table-Based” Compliance, a product must use primary key constraints defined by PPDM to support each table within the Footprint. The names of the primary key constraint definitions need not match PPDM names. A matrix matching the product’s primary key constraint names to PPDM defined constraints must be submitted for the verification process. Additionally, the order of columns defined with the product primary key constraint need not match the order defined by PPDM. Although the unique identification of each row is not affected by the ordering of columns in the constraint, differences in retrieval response time should be expected.
10. PPDM “Table-Based” Compliance is valid during “Normal Production Operations” (NPO). NPO exist when the database is open to:
 - a) Multiple (production) user access, AND
 - b) Multiple (potentially) PPDM Compliant applications, AND
 - c) Database Constraints enabled.

Silver Level Compliance (View-Based):

11. For “View-Based” Compliance, a software product may provide database views that mimic PPDM table definitions. The product developer must provide mappings between the PPDM Compliant VIEW and proprietary base tables by submitting documentation to PPDM and releasing this information with the product. VIEWS need not be updateable. View-Based PPDM Compliance does not assure referential integrity between VIEWS.

Appendix I: Gold Level Compliance Percentage Indicator Definition

For Gold Level Compliance, a “Percentage Indicator” is calculated for each non-compliant table in the Footprint. This is a number that shows “how close” to compliance each table is, based upon the following process and algorithm. The weighted average of Percentage Indicators for every non-compliant table (i.e. every table having a value of less than 100%) is calculated and reported in the Compliance Rating Code.

Step 1 - What is important for compliance measurement in the “Percentage Indicator”?

For each table:

<i>Important Characteristic</i>	Rank	<i>Comment</i>
Table name	1	If name matches, then in Footprint
Constraints		
Primary key – components are the same	2	
Foreign key constraint components are the same	3	only for FKs which are in the Footprint.
Check constraints match	2	Must match exactly, unless a new subtype is added to a super-sub type set. In that case, may add the new table name to the check constraint, but cannot delete or change existing values.
column name	4	-
column format (Date, Char, Number, Long Raw)	4	Variations on the SQL 92 standard accepted.
column length (longer, precision)	4	shorter than not acceptable
optionality (NULL, NOT NULL)	4	-
<i>Not important</i>	-	-
Name of FK constraints	-	-
Order of PK and FK components	-	-
Order of columns in tables	-	-
Non-unique indexes	-	-

Step 2 - Determine the possible scoring points.

Each table can earn 100 points indicating (with the exception of non-Foreign Key constraints) complete compliance.

- Every table is worth a maximum of 100 points, regardless of its size (number of columns).
- All PPDM defined columns of Footprint tables must be present in the tested product. Points are lost for every missing column. The score for columns is applied so that if the column name does not match, no other points can be awarded for optionality, format or length.
- The scoring points algorithm for constraints assumes that all the tables in PPDM are used. If the Footprint is a subset of the complete PPDM, the algorithm must be modified to remove the effect of tables, which are outside the Footprint. Points are not lost for constraints that reference a table outside the Footprint.
- Foreign and Check constraints are part of the compliance measurement. Check constraints are used to manage the integrity of model structures and foreign keys manage referential integrity between tables.

Characteristic	Value	Formula	Comments	Score
Table name	25%		Score is all or nothing	25
Primary Key	25%		score is all or nothing If a check constraint is part of a column in the PK, the check constraint must pass.	25
Constraints	25%	25/n (for each FK)	n = # of PPDM defined FK or check constraints within each table in the Footprint (If all referenced PPDM tables are included in the Footprint)	Maximum Score of 25
Columns	25%	25/4n (for each column)	n = # of columns in the PPDM table (score for name, format, length, null-ability) If any non-PPDM mandatory columns exist for table, this section equals zero for the table.	Maximum Score of 25

Example: The PPDM table LR_STATUS

PPDM Definition:

Potential Score:

Table name: (25 points)

Column name	Data type	Length	Null	PK	FK Chk	Col Name	Col Type	Col Len	Col Null
LAND_RIGHT_ID	VARCHAR2	20	N			.33	.33	.33	.33
LAND_RIGHT_TYPE	VARCHAR2	24	N		5	.33	.33	.33	.33
LAND_RIGHT_STATUS	VARCHAR2	12	N		5	.33	.33	.33	.33
STATUS_SEQ_NO	NUMBER	8	N			.33	.33	.33	.33
ACTIVE_IND	VARCHAR2	1	Y		5	.33	.33	.33	.33
EFFECTIVE_DATE	DATE		Y			.33	.33	.33	.33
EFFECTIVE_TERM	VARCHAR2	240	Y			.33	.33	.33	.33
EFFECTIVE_TERM_OUOM	VARCHAR2	12	Y			.33	.33	.33	.33
EXPIRY_DATE	DATE		Y			.33	.33	.33	.33
REASON	VARCHAR2	240	Y			.33	.33	.33	.33
REMARK	VARCHAR2	2000	Y			.33	.33	.33	.33
SECTION_OF_ACT	VARCHAR2	240	Y			.33	.33	.33	.33
SECTION_OF_ACT_DATE	DATE		Y			.33	.33	.33	.33
SOURCE	VARCHAR2	12	Y		5	.33	.33	.33	.33
UNDETERMINED_TERM_IND	VARCHAR2	1	Y		5	.33	.33	.33	.33
ROW_CHANGED_BY	VARCHAR2	30	Y			.33	.33	.33	.33
ROW_CHANGED_DATE	DATE		Y			.33	.33	.33	.33
ROW_CREATED_BY	VARCHAR2	30	Y			.33	.33	.33	.33
ROW_CREATED_DATE	DATE		Y			.33	.33	.33	.33
Possible points:				25	25	6.25	6.25	6.25	6.25

Possible Points for this table:

Characteristic	Value	Formula	Comments	Score
Table name	25%	1	Score is all or nothing	25
Primary Key	25%	1	Score is all or nothing	25
Constraints	25%	25/n	n = # of PPDM FK and check constraints tables in the footprint (If all referenced PPDM tables are included in the footprint)	n = 4 6.25 pt. for each constraint
Columns	25%	25/4n	n = # of columns in the PPDM table (score for name, format, length, null-ability)	n = 10 .625 pt. for each column characteristic
Total Points				100

Step 3. Measure compliance of each non-compliant footprint table

Use **LR_STATUS** (Hypothetical) as an example

Table name: (25 points)

Column name	Data type	Length	Null	PK	FK Chk	Col Name	Col Type	Col Len	Col Null
LAND_RIGHT_ID	VARCHAR2	20	N			.33	.33	.33	.33
LR_TYPE	VARCHAR2	24	N		5		.33	.33	.33
LAND_RIGHT_STATUS	VARCHAR2	20	N		5	.33	.33	.33	.33
EFFECTIVE_TERM	VARCHAR2	100	Y			.33	.33		.33
IN_EFFECT	DATE		Y						
OUT_OF_DATE	DATE		Y						
EFFECTIVE_TERM_UNIT	VARCHAR2	12	Y			.33	.33	.33	.33
SOURCE	VARCHAR2	12	Y		5	.33	.33	.33	.33
ROW_CHANGED_BY	VARCHAR2	30	Y			.33	.33	.33	.33
ROW_CHANGED_DATE	DATE		Y			.33	.33	.33	.33
ROW_CREATED_BY	VARCHAR2	30	Y			.33	.33	.33	.33
ROW_CREATED_DATE	DATE		Y			.33	.33	.33	.33
Possible points:				25	15	3.00	3.33	3.00	3.33

The score for this example:

Characteristic	Value	Formula	Comments	Score
Table name	25%	1	Table name is the same	25
Primary Key	25%	1	Primary key components not same	0
Foreign keys	25%	25/n	n = 5, score 5.00 each	15
Columns	25%	25/4n	n = 19, score .625 each (name, format, length, null-ability) #matches * 4	12.66
Total				52.66

Step 4. Compute the overall score

Add the scores for all the non-compliant tables and divide by the number of non-compliant tables. For example, if a Footprint of 10 tables has 4 non-compliant tables, and the score for each is 80, 83, 75 and 60; the mean "Percentage Indicator" would be 74.5 (i.e. 298/4).