



U.S. Department
Of Transportation

**Federal Highway
Administration**

Memorandum

6300 Georgetown Pike
McLean, Virginia 22101

Subject: **ACTION:** LTPP Directive IMS-141
IMS Software Release Version 2008.12

Date: December 10, 2008

From: Jane Jiang 
Long Term Pavement Performance Team

Reply to
Attn of: HRDI-13

To: Dr. Frank Meyer, PM - LTPP North Atlantic Regional Contract
Dr. Frank Meyer, PM - LTPP North Central Regional Contract
Mr. Mark Gardner, PM - LTPP Southern Regional Contract
Mr. Kevin Senn, PM - LTPP Western Regional Contract

Attached is the Long-Term Pavement Performance (LTPP) Program Directive IMS-141: IMS Software Release Version 2008.12. This directive authorizes implementation of the IMS software upgrade from version 2008.07 to 2008.12. Please ensure that all personnel are aware of this new directive.

Should you have any questions or would like to discuss this directive, please do not hesitate to contact me at 202-493-3149.

Attachments (3)

FHWA:HRDI-13:JJiang:mdeeney:493-3149:12/10/08

File: c:/mdeeney/directive/ims/IMS-141dir.doc

cc:

Jonathan Groeger
Directive Binder
LTPP Team
Official file
Chron



LONG TERM PAVEMENT PERFORMANCE PROGRAM DIRECTIVE



For the Technical Direction of the LTPP Program

Program Area: IMS

Directive Number: I-141

Date: December 5, 2008

Supersedes: I-140

Subject: IMS Software Release Version 2008.12

This directive authorizes implementation of the IMS software upgrade from version 2008.07 to 2008.12. Upgrade instructions are provided in Attachment 1. Please notify the FHWA and TSSC when the upgrade has been installed.

Software Change Notice 102, contained in the file, SCN_102.pdf, lists all of the changes made to the IMS software since the last software release. This notice shall be filed in the Operator's Log.

This software update contains many changes implemented for the 23rd Public Data Release: TRF_MEPDG tables are created and populated, the Data Dictionary is updated, the Section_Layer_Structure view is created, and data tables are updated. In addition, several QC programs are updated and the "frozen" data modules are truncated and repopulated with data from the central database.

The Software Change Notice lists these and other miscellaneous changes.

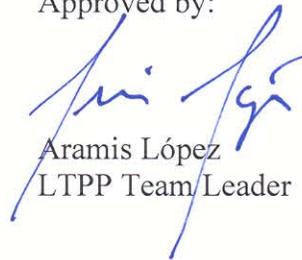
The software for Version 2008.12 is distributed in a master zip file, SoftwareRelease200812.ZIP, and a separate zip file for each region called VR200812ExportsRegion#.zip. These files may be downloaded from the VR2008_12 directory on the ltp.org ftp site.

The following files are contained in the master file:

- VR2008_12.ZIP – A zip file with the batch file (VR2008_12.BAT) and scripts needed to make miscellaneous updates to the database and to run other related administrative commands. Refer to the table included in Attachment 1 for an alphabetic list and descriptions of the scripts called by this batch file.
- LTPP.ZIP - A zip file with all files to go in the LTPP area (and subdirectories) on the server.
- OracleVersions.ZIP – A zip file with listings of all Oracle files and versions loaded on the server at the central site. These are included for reference only.

Prepared by: TSSC

Approved by:



Aramis López
LTPP Team Leader

Attachment 1

Instructions to Apply VR 2008.12 Release

1. Create the subdirectory RELEASES\VR2008_12 on the server or on a workstation with the 10g client.
2. Copy and unzip the VR2008_12.zip file into the subdirectory created in step 1.
3. Copy and unzip the VR2008_12FilesRegion#.zip file into the subdirectory created in step 1. The # sign represents the region number. For All regions, copy and unzip each of the regional files. Each zip file includes two .dmp files, two .log files and one .lis file. **The .lis file is discussed in step 9, below.**
4. Shutdown ORACLE in normal mode and backup Server.
5. Bring ORACLE up.
6. **Due to the use of large dump files created in 10g, this software release must be run in a 10g environment. Therefore, open a DOS prompt window on a workstation with the 10g client, on the server, or through terminal services.** Verify that the files unzipped in step 1 are accessible.
7. From the DOS prompt in the RELEASES\VR2008_12 directory, type

```
VR2008_12 dbusername/dbapassword@instance #
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where # is the number of your region (1, 2, 3, 4), to begin the software update. (The 'All' version will be handled with a separate batch file.) The batch file will export several tables that are updated or repopulated by the release scripts. Be sure to review the VR2008_12ReplacedTables_exp.log file to verify that the exports completed successfully. Keep the export file (VR2008_12ReplacedTables.dmp) until you are satisfied that all changes were successful.

If the export is successful, the batch file will run the scripts listed alphabetically in Table 1, below. The batch file will also truncate all tables in "frozen" modules in order to import the data from the central database.

8. The scripts create new tablespaces, tables, and codes; update data; and import TRF_MEPDG data and data for "frozen" data modules. **Check carefully that all scripts completed successfully by reviewing the *.lis files (refer to list, below).** Ignore errors about dropping non-existent objects. In addition, **compare the import log files (VR2008_12IMSRegion#_imp.log, VR2008_12MEPDGRegion#_imp.log) with the export log files (VR2008_12IMSRegion#_exp.log, VR2008_12MEPDGRegion#_exp.log) provided for your region to verify that all**

records were imported correctly.

9. **Extra Step:** Examine the MissingSurveysRegion#.lis file, where # is your region number. This file contains the list of surveys for which we have a value for SURVEY_WIDTH, but the matching record was not found in any of the MON_DIS_PADIAS% tables. Some of these surveys will be after OOS and may be ignored. Look at the keys provided in the list and determine why each survey wasn't found/updated and what needs to be changed (if anything) to get it to match up with the appropriate survey. Then, put a set of scripts together with the appropriate keys to update the SURVEY_WIDTH field. Send the scripts to MACTEC for approval before applying them to the database.
10. Copy the LTPP.ZIP file into the LTPP subdirectory. Right-click on the filename and choose "Extract to Here" to unzip the file into the LTPP subdirectory. Answer "Yes to all" to overwrite existing files. Delete the LTPP.ZIP file.
11. The OracleVersions.zip file is included for reference only. Extract these files into the OracleVersions directory. It will create an OracleVersions\VR200812 subdirectory.

Table 1. Scripts run from the VR2008_12.bat file

Script and Output Filenames (.sql & .lis)	Description
agg_type_updates_Reg#	Updates aggregate types in TST_PC03, where # = region number.
CNUtilities	Updates CN utility to assign the correct PRE_RHB_CN in RHB_CAUSE_INFO table.
CreateSectionLayerStructureView	Creates new Section Layer view.
LeftPadAtempTimeInRainDay	Updates SMP_ATEMP_RAIN_DAY by left padding the MAX_ATEMP_TIME and MIN_ATEMP_TIME with zeros.
SECTION_COORD_INSERTS#	Inserts new Section Coordinates for Data Release 23 - region specific.
SECTION_COORD_UPDATE	Updates Section Coordinates for Data Release 23 – not region-specific. Some of these statements will update 0 rows.
SPR3831UpdateLTPPDD	Updates UNITS and DESCRIPTION for specified Climate tables.
SPR3839UpdateLTPPDD	Updates DESCRIPTION of TACK_COAT_PERCENT in SPS5_OVERLAY and SPS6_OVERLAY tables.
SPR3841AddPrimaryKey	Adds primary key to SPS_INTERSECTIONS. Also updates LTPPDD.
TrfMepdgCodes	Updates code types particular to TRF_MEPDG tables.
TrfMepdgCreateTables	Creates new TRF_MEPDG tables.
TrfMepdgCreateTablespaces	Creates tablespaces for new TRF_MEPDG tables.
TrfMepdgDataDictionary	Creates the MEPDG LTPPDD entries.
UpdateLTPPDD_SDR23	Updates data dictionary for Data Release 23.
VR2008_12IMSTruncateTables	Truncates tables in the frozen data modules.
VR2008_12MEPDGTruncateTables	Truncates the TRF_MEPDG tables.

Software Change Notice 102

REG #	SAIC #	Program Name	Referred To	Date Rec	Date Comp
Administrative					
4-511	3837	AdminQC_E		7/30/2008	8/14/2008
Description			Resolution		
When running the QC for ADMINQC_E, we receive the error 'SectionCoordinatesLevelE: Fetch – An Oracle error occurred. ORA-03114: not connected to ORACLE.'			Could not reproduce centrally. Asked Linda to try the program again, and it worked.		
CN Assign					
M-3832	3832	CN Utilities		8/4/2008	8/8/2008
Description			Resolution		
Change CNUilities.sql to exclude BIN\$ tables from the main select statement.			Changed CNUilities.sql to exclude BIN\$ tables from the main select statement.		

REG #	SAIC #	Program Name	Referred To	Date Rec	Date Comp
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Data

S-3833 3833 SDR23 Data Changes

8/8/2008 10/30/2008

Description

Data changes applied centrally:

1. Add record for TST_SAMPLE_COMBINE.RECORD_STATUS in LTPPDD
2. Correct configuration_no problems in MON_DEFL_% tables.
3. SPS table updates
4. Addition of TRF_MEPDG tables
5. Removal of null records (records with nothing but key fields)
6. Updates to SECTION_COORDINATES table
7. Updates to AGGR_TYPE_PCC field in TST_PC03 table
8. Other miscellaneous changes

Resolution

1. Created script LTPPDD_SDR23.sql to capture miscellaneous changes to LTPPDD for SDR23
2. See Tommy email 8/15/08
3. In RegionalUploads/20080915 directory on Centraldb, see directories /SPS_Scripts for the SPS scripts run on 9/22/2008 and /FinalScripts for additional SPS scripts run on 10/14/2008
4. See directory (on Centraldb) RegionalUploads/20080915/MEPDG and MEPDG_Final for the MEPDG updates and output from 9/23/2008 and 10/14/2008, respectively
5. See directory (on Centraldb) RegionalUploads/20080915/NullRecords for the scripts and output identifying and deleting null records on 9/23/2008
6. Two scripts used: SECTION_COORD_UPDATE.SQL and NEW_SECT_COORD_FIXES.SQL.
7. One script used to update CENTRALDB. Separate scripts generated for each region (AGG_TYPE_UPDATES_REG#.SQL)
8. Other miscellaneous changes are documented in RgionalUploads/20080915/FinalScripts.

For a complete listing and documentation of data changes for SDR23, see TSSC's historical spreadsheet which captures changes for all data releases.

Database Administration

S-3843 3843 TST_LO5B

10/1/2008 10/1/2008

Description

1. Create view of TST_LO5B tables with the name SECTION_LAYER_STRUCTURE. Change the order of the fields so that STATE_CODE is first.
2. Update PopulateLtpTd.sql to add a record for this new view. Distribute this script to the regions.

Resolution

Created script CreateSectionLayerStructureView.sql and updated PopulateLtpTd.sql.

REG #	SAIC #	Program Name	Referred To	Date Rec	Date Comp
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Materials Testing

M-3842 3842 TST_E QC

9/3/2008 11/25/2008

Description

Add level E check to compare records in TST_L05B where INV_LAYER_NO or INV_LAYER_NO2 are non-null to fields in matching records in TST_L05.

Tables TST_L05B, TST_L05

The entries in TST_L05B.INV_LAYER_NO must equal TST_L05.INV_LAYER_NO1 and TST_L05B.INV_LAYER_NO2 must equal TST_L05.INV_LAYER_NO2 when matching records identified by STATE_CODE, first two characters of SHRP_ID, and PROJECT_LAYER_CODE exists.

Error Message: TST_L05B-E-76. The values of INV_LAYER_NO must be equal for matching records in TST_L05B and TST_L05

S-3708 3708 TST_E

Resolution

11/13/2008 - Clarified intent of QC check.
Added 2 new checks, TST_L05B-E-76,-77, which compare the non-null values of TST_L05B.INV_LAYER_NO and TST_L05B.INV_LAYER_NO_2 to TST_L05.INV_LAYER_NO_1 and TST_L05.INV_LAYER_NO_2, respectively. They must match.

Description

Add the following checks to the TST level E QC:

Tables: TST_PC06 and TST_PC01 and TST_PC02 and TST_PC04

For SHRP_ID, STATE_CODE, LAYER_NO, FIELD_SET, TEST_NO, and SAMPLE_NO:

- Extract TST_PC01.ORIGINAL_LENGTH
Extract TST_PC06.CORE_AVG_THICKNESS
CORE_AVG_THICKNESS must be > ORIGINAL_LENGTH
- Extract TST_PC02.LENGTH
Extract TST_PC06.CORE_AVG_THICKNESS
CORE_AVG_THICKNESS must be > LENGTH
- Extract TST_PC04.LENGTH

MACTEC

9/19/2006 7/11/2008

Resolution

These checks initially attributed to the TST_PC06 table instead of the related table. Therefore, we removed them from the TST_PC06 QC and updated PC01, PC02, and PC04. See related SPR 3840.

REG #	SAIC #	Program Name	Referred To	Date Rec	Date Comp
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Extract TST_PC06.CORE_AVG_THICKNESS
 CORE_AVG_THICKNESS +0.5 must be>LENGTH

These checks ensure that the measurements taken while testing the core are consistent with the measurements from the core examination. Each of those checks should be a check attributed to the non-PC06 table.

S-3840 3840 TST_E QC

MACTEC

9/18/2008

10/1/2008

Description

Resolution

Update the following checks in the TST level E QC, since they were originally attributed to the PC06 table (SPR3708):

Revised TST_E QC program re-working the 3 TST_PC06 checks in question into a TST_PC01, a TST_PC02, and a TST_PC04 check.

For SHRP_ID, STATE_CODE, LAYER_NO, FIELD_SET, TEST_NO, and SAMPLE_NO:

Tables: TST_PC01, TST_PC06
 Extract TST_PC01.ORIGINAL_LENGTH
 Extract TST_PC06.CORE_AVG_THICKNESS
 CORE_AVG_THICKNESS must be>=ORIGINAL_LENGTH

Tables: TST_PC02, TST_PC06
 Extract TST_PC02.LENGTH
 Extract TST_PC06.CORE_AVG_THICKNESS
 CORE_AVG_THICKNESS must be>=LENGTH

Tables: TST_PC04, TST_PC06
 Extract TST_PC04.LENGTH
 Extract TST_PC06.CORE_AVG_THICKNESS
 CORE_AVG_THICKNESS +0.5 must be>=LENGTH

These checks ensure that the measurements taken while testing the core are consistent with the measurements from the core examination. Each of those checks should be a check attributed to the non-PC06 table.

REG #	SAIC #	Program Name	Referred To	Date Rec	Date Comp
P46					
4-510	3836	P46_B		7/30/2008	10/14/2008
Description			Resolution		
<p>The level B checks for P46 are checking the key fields STATE_CODE, SHRP_ID, CONSTRUCTION_NO. These checks should also be checking the key field of LOC_NO / SAMPLE_NO. There are records failing the P46 QCs for 530212, CN1. In looking at the P46 tables, the LOC_NO not passing these checks is BA264. To pass the level B checks, the record must be at E in TST_SAMPLE_LOG. However, in TST_SAMPLE_LOG, while LOC_NO BA264 is at E, there is another LOC_NO that is not at E. This is causing the P46 level B records to fail. LOC_NO / SAMPLE_NO needs to be added to the P46 checks</p>			<p>Investigated the problem and the program appears to be working as written. There is a record in TST_SAMPLE_LOG that is at level B. However, the query against TST_SAMPLE_LOG should include the SAMPLE_NO field to compare the specific records in the check. Added SAMPLE_NO to the P46 checks against TST_SAMPLE_LOG.</p>		
PADIAS					
M-3791	3791	PADIAS tables		6/5/2007	9/9/2008
Description			Resolution		
<p>SQL will be used to populate the SURVEY_WIDTH field in the PADIAS tables. Travis and Gary will provide information on how to auto populate some of the Padias tables with a text file that exists that has this information in it. The text file exists in the AIMS following the AIMS directory structure. We have examples of the available files and file structure.</p>			<p>Provided scripts to the regions based on information sent from TSSC engineering staff. The scripts will update a given state_code, shrp_id, survey_date record in whichever PADIAS table in which it exists.</p> <p>Will provide each region with a list of surveys that did not update from the automated list so that necessary changes/corrections can be made.</p>		
Reference Tables					
M-3839	3839	LTPPDD Table		9/9/2008	9/18/2008
Description			Resolution		
<p>Change the description for TACK_COAT_PERCENT in SPS6_OVERLAY and SPS5_OVERLAY from "Dilution percentage or the mixing rate of water in emulsified asphalt cement tack coat materials." to "Dilution percentage or the mixing rate of asphalt in emulsified asphalt cement tack coat materials."</p>			<p>Created SPR3839UpdateLTPPDD to apply changes to LTPPDD as requested.</p>		

REG #	SAIC #	Program Name	Referred To	Date Rec	Date Comp
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S-3831	3831	LTPPDD Table	MACTEC	7/17/2008	7/17/2008
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Description

In the LTPPDD table, change the units of the following fields to "days" instead of "cycles":

CLM_OWS_TEMP_MONTH.FREEZE_THAW_MONTH
 CLM_OWS_TEMP_ANNUAL.FREEZE_THAW_YR

Also, change description in LTPPDD for those fields to "Number of days in the period when the air temperature goes from less than 0 degree C to greater than zero degree C; assumes minimum daily temperature occurs before maximum daily temperature."

Change the description in LTPPDD to "Number of days used to calculate FREEZE_THAW_MONTH." in the LTPPDD for the following fields:

CLM_OWS_TEMP_MONTH.FREEZE_THAW_DAYS_MONTH
 CLM_VWS_TEMP_MONTH.FREEZE_THAW_DAYS_MONTH

Change the description in LTPPDD to "Number of days used to calculate FREEZE_THAW_YR." in the following fields:

CLM_OWS_TEMP_ANNUAL.FREEZE_THAW_DAYS_YR
 CLM_VWS_TEMP_ANNUAL.FREEZE_THAW_DAYS_YR

Rehabilitation

M-3838	3838	RHB QC		8/20/2008	9/4/2008
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Description

Add RHB_ACO_SP_AGGR_PROP and RHB_ACO_SP_MIX_PROP to the RHB_C QC program. Neither of these tables has any level C checks, but the records should be moved up to level C since there is no check to fail. Both tables need to be included in the output from the level C program - just the header (tablename and key fields) - and the table statistics at the end.

Resolution

Created SPR3831UpdateLTPPDD to apply changes to LTPPDD as requested. Updated QC Manual as necessary.

Resolution

RHB_ACO_SP_AGGR_PROP and RHB_ACO_SP_MIX_PROP were added to the RHB_C QC program in order to promote their records to level C as there are no level C checks on these two tables.

REG #	SAIC #	Program Name	Referred To	Date Rec	Date Comp
Seasonal Monitoring Program					
M-3845	3845	SMP_E QC		11/10/2008	11/18/2008
Description			Resolution		
SMP_FREEZE_STATE_E-101 needs to be modified to accept smp_freeze_state.smp_date = smp_layout_info.install date. Currently, an error is generated if these two dates are equal.			Per Travis, updated SMP_FREEZE_STATE-E-101 to allow dates to be > or = to the SMP_LAYOUT_INFO.INSTALL_DATE.		
SPSM					
S-3841	3841	SPS_INTERSECTIONS		9/29/2008	11/24/2008
Description			Resolution		
Add a primary key to the SPS_INTERSECTIONS table.			Created SPR3841AddPrimaryKey to drop old index and create new primary key for SPS_INTERSECTIONS table.		
Traffic					
S-3717	3717	TRF_MONITOR_AADT Table	MACTEC	10/31/2006	10/1/2008
Description			Resolution		
TRF_MONITOR_AADT is referenced in the level E QC checks on TRF_MONITOR_LTPP_LN. AADT is no longer in the data release and this may be confusing to data users.			Wording added to QC Manual, Chapter 11, to explain that some of the TRF checks are done in the Traffic Analysis Database.		