CONNECTICUT DEPARTMENT OF TRANSPORTATION

RMS PROVIDER TESTING AND CERTIFICATION PROCEDURES

FOR THE SUBMISSION OF MMUCC PR-1 ELECTRONIC CRASH DATA

Revised July 30, 2014

Document Version 1.1

This document is intended to provide guidance to RMS providers in the State of Connecticut relative to the submission of electronic crash data in anticipation of the State's new requirements for the collection of MMUCC compliant PR-1 crash data beginning January 1, 2015. Local law enforcement agencies are strongly encouraged to work with their RMS provider to take advantage of the opportunity to capture and submit crash data electronically. Given the scope and complexity of crash data to be collected, electronic capture of crash data will be the most cost effective and efficient method for new PR-1 crash data collection for most law enforcement agencies in the State.

The following procedures adopt a three phase approach to testing and certification as follows: 1) an RMS provider certification phase testing vendor software with crash test scenarios 2) a beta test law enforcement agency phase with "live" crash test cases and 3) a fully operational phase in which law enforcement agencies will be able to submit all cases directly to the FTP site. DOT anticipates its FTP site to be ready by July 21, 2014.

RMS providers are required to complete the information form in Appendix A of this document and to submit it to Rory.Belanger@ct.gov (860-594-3535) and Michael.Gracer@ct.gov (860-594-3536).

The following links are designed to provide RMS providers with the necessary resources to begin the process for electronic submission:

- www.ct.gov/dot/crashinitiative contains links to the DOT Specifications document, xml schema, Crash Report Reader app, Testing and Certification Guide, crash scenarios, static version of the fillable PDF, an Investigator's Guide, and guidance on free diagramming software.
- http://s.uconn.edu/ctsrc also contains updated links to:
    o DOT Specifications document,
    o Static version of the fillable PDF,
    o Investigator's Guide,
    o CTDOT crash scenarios
- The following is a copy of the Crash Report Reader app for use in testing software internally against DOT's xml schema and validation and edit program:

    CrashReportReader.
        zip

Other background information:
- http://www.mmucc.us/ Uniform national guidelines for the collection of crash data
- www.ct.gov/dot/crashinitiative Overview of Crash Data Improvement Initiatives

Section 1:   Rules for Accessing the Connecticut DOT FTP Server:

Securing Credentials:
- Before new MMUCC PR-1 crash data can be submitted electronically, RMS providers must contact the CTDOT to obtain *unique credentials* to use the Department's secure FTP site. Credentials will include a unique address, user name, and password to log in to the CTDOT FTP site. Credentials will be issued to RMS providers to view and edit submissions in their customer folders. Separate credentials will be issued to law enforcement customers to begin the testing and certification process.

- In order to secure credentials, RMS providers must complete *the attached DOT information form* which will include a beta test law enforcement agency ID and contact information for electronic submission.

- Once credentials have been issued, law enforcement agencies should access the secure FTP site initially using their browser in order to be able to create their own *unique password*. (Agencies using FTP client software will not be able to execute this function and will encounter problems accessing the site).

Submission Protocols
- File submissions will be made via Secure FTP to ftp://sfile.ct.gov *(Please note that secure FTP is an enhanced secure form of the FTP protocol that requires the use of special client software. One such client software is WinSCP, which may be obtained for free from http://winscp.net).*

Formatting Requirements:
- Crash files are to be submitted electronically as XML files that conform to the XML schema as defined by the Connecticut DOT. The xml schema can be accessed at the following link: *www.ct.gov/dot/crashinitiative*. An xml file that does not conform to the xml schema will be rejected and the RMS provider and submitting agency notified of the need to resubmit files in a conforming XML format.

- Each crash data file shall contain *only one* crash report. The name of each file submitted should be unique and consist of the town name, agency ID, and case number. For example, for the file name West Hartford_CT0015501_111-222-333.xml, West Hartford is the town name, CT0015501 is the agency ID, and 111-222-333 is the case number.

Folder Structure:
- CTDOT will set up *unique folders on its FTP site* for each RMS provider's customers that will include each police department's name and law enforcement agency ID code.
    - Each agency will initially be subscribed to a "test" account with their unique user ID. When an agency has passed DOT acceptance standards for initial "live" test files, the "test" account will be disabled and a "production" account activated with the same user ID. The following is an example of how test and production files might be identified: DOT_ECRASH_ANSONIA_POLICE_TEST AND DOT_ECRASH-ANSONIA_POLICE.
    - Test files will be set up to import CTDOT approved crash test scenarios as well as initial "live" crash data from RMS provider customers. A sampling of "live" crash data based on time and/or number of reports will be monitored by CTDOT for data quality.
    - When CTDOT has determined that "live" crash data quality conforms to validation and edit standards and has issued a certification for full electronic submission, agencies will be asked to re submit their corrected "live" cases to their assigned "production" file.

- When a file is processed for submission by CTDOT, a log file with the same name will be placed in the same FTP folder as the data file. If data is processed successfully, the XML file will be removed. If there are errors, an email notification will be sent to any address specified in the transmitter email address field in the XML file as well as any transmitter technical contact email addresses in the CTDOT data base.

Submission Schedule:
- Beginning January 1, 2015, DOT will be implementing for the first time in cooperation with RMS providers a mutually agreed upon *schedule* for the regular submission of electronic crash data. This will enable the Department to better manage and address case file errors and omissions without major disruption to the acceptance and processing of crash

data. *(RMS providers and law enforcement agencies are also reminded that State law requires that law enforcement agencies submit crash reports to the DOT within five days of the completion of an investigation.)*

- *Each RMS provider and its customer agencies must be certified by CTDOT before crash data can be submitted electronically*. Vendor approval and certification will take place in three phases: 1) acceptance of CTDOT crash scenario test data using RMS provider software. RMS providers will be issued an approval statement from CTDOT that their software may be used for electronic transmission of "live" crash data from an approved beta test law enforcement agency 2) acceptance of "live" crash data from individual law enforcement agencies for a defined period of time or until an appropriate sample of crash reports is generated. If error rates are minimal, DOT will issue a certification statement to the vendor and its beta test agency for electronic submission 3) submission of "live" crash data on an unlimited basis from all sources within a law enforcement agency.

Section 2:   RMS Provider Certification: CTDOT Crash Scenario Test Cases

- DOT will provide a series of *sample crash test scenarios* (on completed electronic PDF copies of the new MMUCC PR-1) to each RMS provider for completion and submission testing to the FTP site.

- DOT will also provide a copy of its crash report reader tool to each RMS provider to internally test xml files generated against CTDOT's schema and validations and edits before engaging CTDOT for testing.

- Each RMS provider's beta test law enforcement agency will enter crash scenario data and send a transmission for each crash scenario type to the *secure FTP site* for full acceptance testing of the xml schema and validation and edit rules.

- CTDOT will send an *email notification* back to the submitting law enforcement agency (copy to the RMS provider) within 24 hours confirming acceptance/non acceptance of the xml schema and/or providing a comprehensive report on edit results.

- RMS providers will test their software for technical issues and work with their beta law enforcement agency to resolve all errors noted with crash scenario submission.

- Law enforcement agencies *will resubmit* revised crash reports to the FTP site test folder for follow up xml schema acceptance testing and validations and edits.

- Upon successful submission and acceptance of all of CTDOT crash scenarios using the RMS provider's e-crash product, DOT will issue an *email notification* to each RMS provider authorizing the electronic submission of "live crash" xml files by the beta test law enforcement agency.

Section 3:   Law Enforcement Agency Certification: Initial "Live" Test Case Submissions

- RMS providers will work with their beta test law enforcement agency to begin submission of "live" crash test data to the FTP site. CTDOT wishes to initially monitor data quality under actual crash data collection conditions in the field for this purpose. As needed, CTDOT will offer training tools and guidance to RMS provider designated agencies to assure that MMUCC PR-1 data definitions are understood within an RMS provider's e-crash product.

- Each law enforcement agency will be expected to enter "live" crash test cases onto their RMS provider's e-crash product, apply all validations and edits, save as an xml file, and transmit that file to their respective test folder on the FTP site.

- CTDOT will monitor "live" test cases for xml schema conformance and acceptance of validation and edits. An error log will be generated and email notification sent to the submitting agency and their RMS provider. If crash data has been rejected for any reason, the RMS provider and its submitting agency will work together to resolve any issues and resubmit files to their test folder.

- DOT will monitor a *sampling of cases* for a period of up to four weeks or at least 100 crash reports whichever comes first. During that period of time, the process of submission to the FTP site, execution of import program protocols, email

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notification and error reports, and follow up submissions will be tested and adjustments made to software and/or data collection protocols as needed.

- Once all "live" crash test files have passed the xml schema and validation and edit requirements, law enforcement agencies will be asked to resubmit files to a production folder on the FTP site to enable the CTDOT to process data onto its official data bases. The CTDOT does not anticipate that this process will be required for any extended period of time.

- To proceed forward with full submission, law enforcement agencies must be able to assure that their PR-1 cases pass xml acceptance including narratives and diagrams *for every submission* and a validation and edit rule acceptance rate that meets CTDOT standards. Test crash files will be monitored based on length of time and sample size Error rates will be determined based on cumulative submissions over time until a submitting agency has attained the DOT recommended standard. The CTDOT must feel comfortable that high quality crash data submissions can be sustained once full certification has been provided.

Section 4: Law Enforcement Agency Certification: Electronic Submissions To CTDOT Production Folders

- Upon approval of initial "live" crash testing outcomes by the CTDOT, the beta test law enforcement agency will be authorized to proceed with *unlimited MMUCC 4 PR-1 crash file submissions* for the remainder of the 2014 calendar year.

- Once approved for unlimited live crash report submissions, each beta test agency may routinely submit e-crash files to their designated production folder on the FTP site. CTDOT will continue to monitor crash data quality and provide feedback as appropriate.

- **Note: Once a beta test law enforcement agency has been certified for electronic submission, RMS providers should assist *remaining customer agencies* with the application process to secure DOT credentials for electronic crash report submission. Each new agency will be asked to submit its initial crash files to a CTDOT test folder for data quality monitoring. If crash data quality meets the DOT recommended standard, agencies will be quickly approved to begin submissions to their assigned production folder on the CTDOT FTP site. Crash data samples for subsequent agencies may not need to be as large as those for the initial beta test agency unless specific crash data quality issues begin to emerge.**

- CTDOT will create a spreadsheet tracking the status of the testing and certification process by RMS provider and their respective customers on a weekly basis until all customers have been certified to submit crash data electronically in some form. This data will be made available to RMS providers to assist them in monitoring progress against CTDOT testing and certification requirements.

Section 5: Certification Process for the CT State Police and Local Agencies with The Same RMS Provider

- The certification process for the CT State Police and local customers of the same RMS provider will vary slightly and be as follows:
    a. RMS provider will generate crash test scenarios using both CTDOT cases and those generated from its own files using the State Police Training Academy as its initial beta test agency. Crash test scenarios will be submitted as xml files to a test folder on the CTDOT site and monitored for data quality issues.

    b. Upon acceptance of crash test scenario submissions, CTDOT will issue an email notification to the RMS provider that crash scenarios have passed xml and validation and edit standards to its satisfaction.

    c. CTDOT will work with the RMS provider to monitor "live" crash submissions from the CT State Police network to a test folder on the FTP site. If a sampling of the xml files in that "test' folder meet CTDOT's crash data quality standards, the CT State Police will resubmit xml files to their designated production folder. CTDOT will issue approval for unlimited transmissions to the agency's production folder by all users of the State Police network who have access to the e-crash module.

d. RMS provider will designate a local beta test agency for 'live" crash submission testing and work with the CTDOT to secure user credential to the FTP site. Initial test cases will be submitted to the agency's designated test folder on the FTP site and monitored for data quality. When CTDOT's data quality standards have been met, an email notification will be issued authorizing that agency that it may submit its electronic reports to its designated production folder.

e. Subsequent installation of e-crash software for other local law enforcement agencies using the same RMS provider will follow the same procedure using smaller case samples. The CTDOT anticipates that approval for full submission of electronic crash reports to production folders of other local law enforcement agencies will proceed quickly.

Section 6:   Certification Process for PDF Submissions Only

There may be a number of local law enforcement agencies that may wish to directly access the CTDOT's fillable PDF document, save it as an xml file, and submit it to the FTP site. The PDF may function as their primary tool for submission either on a temporary basis (RMS provider software not ready) or on a permanent basis. Agencies should complete the form in Appendix A and work with CTDOT contacts to gain user credentials to the FTP site. CTDOT will set up a test folder for those agencies to begin "live" test case submissions for monitoring purposes.

A sample of crash test cases will be collected and monitored to assure that the PDF submission (which has been pre tested by the CTDOT extensively) is functioning effectively on the submitting agency's server. Once CTDOT has determined that PDF submissions meet CTDOT data quality standards, the submitting law enforcement agency will be enabled to directly access their assigned production folder on the FTP site for unlimited submissions.

Agencies wishing to save the PDF as an image document in their files and submit a copy to the FTP site should contact the CTDOT for further guidance.

Section 7:   Crash Report Form Requirements

As part of the electronic submission process, CTDOT anticipates that the new MMUCC PR-1 will also be generated as a print document to support individual and FOI requests. The law enforcement agency will still be the department of record for the completed police reports. The following guidance applies to the generation of PR-1 documents from RMS provider systems:
- The MMUCC PR-1 must look exactly like the fillable PDF made available on the CTDOT Web site
- Font sizes and headings should match those used on the MMUCC PR-1 form
- Documents to be produced must have as many pages as required to display all reported crash information (e.g. all units, passengers, trucks, etc.)

For further guidance regarding the printing of the MMUCC PR-1, please contact Eric Jackson of the UCONN Transportation Safety Research Center at 860-284-8426 or at erj02003@engr.uconn.edu

Section 8:   Access To Easy Street Draw Diagramming Software

To enhance electronic reporting, law enforcement agencies will be offered licenses for the use of Easy Street Diagramming software to integrate with their e-crash module. The current 5.2 Version will be issued first with an automatic update to Version 6.0 to follow when it is published. Law enforcement agencies are advised not to expend funds to renew their current Easy Street Draw license as it may be difficult to reimburse those funds if they then elect to access Easy Street Draw through DOT sponsored licenses. Training courses and Webinars will be available to interested agencies. For more information on license purchases, contact Rory Belanger at Rory.Belanger@ct.gov. For information on training opportunities, contact Mario.Damiata@ct.gov.

CT DOT Agency Certification of Electronic Crash Data in MMUCC 4 Format

Please complete the following information:

Law Enforcement Agency Name	
Law Enforcement Agency ID (ORI #) (up to 9 characters, e.g. CT1234567)	
Primary Contact Name	
Primary Contact Phone	
Primary Contact Email	
Additional technical contact email addresses	