

**The
Continuing Education Coordinating Board
for Emergency Medical Services**



**ACCREDITATION MANAGEMENT
SYSTEM (AMS)**

**OPERATIONS MANUAL
CE PROVIDERS EDITION**

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This manual is the property of CECBEMS. It is intended solely for accredited continuing education providers who use the CECBEMS Accreditation Management System and their employees or vendors who are directly involved in the AMS reporting process. Distribution to other than those who need to know this information, either employees of the provider of CECBEMS accredited courses or to contract service providers, is prohibited.

FOREWORD

As the emergency medical services (EMS) profession has matured and EMS professionals have become a more mobile group, the need for a centralized national accrediting body for EMS continuing education (CE) resulted in the founding of the Continuing Education Coordinating Board for Emergency Medical Services (CECBEMS). CECBEMS was created to provide nationwide integrity and standards for EMS CE. This includes setting standards, reviewing and approving CE providers, reviewing and approving CE activities, and gathering data and auditing CE providers and course delivery to ensure EMS professionals receive high quality continuing education that national, state, and local EMS agencies can rely upon.

In its role as the nationwide accrediting body for EMS CE, CECBEMS has always required its accredited CE providers to collect and report a list of specific data, including data for course completions. In the past this data was reported to CECBEMS, but because it was not always reported in a standard format, auditing these course completion reports was difficult and was done on a random basis.

The CECBEMS Accreditation Management System (AMS) is designed to standardize the reporting format for the same data that has been required since January 2000. While the reporting tools have changed, the data that CE providers are required to collect, maintain, and report has remained the same. The CECBEMS AMS is designed with three tools for reporting course completion data: manual entry for CE providers reporting a small number of students or who are not automated, an XML file upload tool, and the ability to submit course completion data in real time using web services.

The CECBEMS AMS is also designed to automate the auditing of course completion records and to make password-protected course completion records instantly available to students and verified regulators. This feature will bring a new level of integrity to EMS CE as well as provide new economies for the management of course completion data by CE providers, students and regulators.

This manual provides instructions and examples for each of these tools. Instructions for a test tool for the XML upload applications are also provided. This test tool will assist CE providers by checking XML file formatting prior to upload. The manual entry tool uses pull down menus and forms validation to help prevent incorrect course completion record entries. CECBEMS will also provide ongoing updates via the [Providers Only](#) page, the [FAQ](#) section of the CECBEMS.org website and via email notices.

CECBEMS understands that the implementation of these new tools may initially require some additional work and adjustment for CE providers but believes the automated system will make reporting easier and more economical in the long run. The CECBEMS AMS manager is available to provide comprehensive support under contract with individual CE providers.

Thank you for your support as we use the CECBEMS AMS to bring EMS continuing education to a new level of quality, integrity, and ease of use.

GENERAL CECBEMS AMS TOOLS AND RESOURCES

About CECBEMS

The [About CECBEMS](#) link at cecbems.org contains contact information for CECBEMS staff and board members, upcoming board meeting agendas, and board meeting summaries.

Find a Course

Students can find a list of both live activities and distributed learning courses at cecbems.org. Live activities are found using a pull-down menu with selection of a state. These live activities will appear in the list until they are held. Live activities that have already occurred are archived for future reference and can be found using the Past Live Courses link by submitting a date range within which the course was held.

Distributed learning providers are listed in the [Find A Course](#) tool if they have at least one currently approved course entered in the AMS. Providers are listed alphabetically by name. Students can view email contact, website link, and comments. CECBEMS controls these entries.

Applications

The CECBEMS AMS makes applications, standards, and related documents available online. Look under [Applications](#) or [Providers>Organizational Application](#) to view and download these documents.

FAQs

The [Frequently Asked Questions](#) tool includes two sections for CE providers – “Submitting Course Completions” and “Documenting Course Completions.” Answers about using the CECBEMS AMS, including data entry and uploads, are available here and can be a valuable tool for finding quick answers. CE providers can also download AMS documentation and this manual from the FAQ page.

Reviewers

The individuals that review courses for CECBEMS approval are listed here.

Provider List

Upon application to be a CE provider, your firm’s name will appear in the list of providers (Providers>Provider List). While under review, only your name and state will be displayed. Subsequent to approval, your contact information, including email and website link will appear. The CECBEMS AMS administrator controls these entries. Accredited organizations must enter at least one currently approved course into the system before their name will appear on this list.

CE PROVIDER TOOLS AND RESOURCES

Log In

The CECBEMS AMS administrator will issue each CE provider one login. Security is role-based, and access to specific AMS resources is controlled by your login. A CE provider login allows access to CE provider tools only. If you have multiple CECBEMS roles, you will have a different login for each role (e.g. your reviewer login will be different from your CE provider login).

This username and password must be kept secure. Misuse allows entry of data that can affect your standing with CECBEMS. To enhance security, your login is set to expire regularly. If your login does not work, please contact CECBEMS to reset your expiration date. If your login security has been compromised or you have experienced a staffing change that impacts the integrity of the login, contact CECBEMS and request issue of a new login.

The CECBEMS AMS includes a tool that allows a CE provider to modify the course completion records it has already submitted. This tool requires a special login and is done on a special login page. For data security purposes, these special logins are issued only by the CECBEMS AMS administrator, are valid for a short period and can be used only once.

Providers Only

You may access the Providers Only page by logging in with your CE provider username and password.

Providers of CECBEMS-accredited activities have always been required to maintain specific records as a condition of holding accreditation. These records include (but are not limited to) copies of all advertising (e.g. brochures); certain policies and procedures adopted and implemented; lists of instructors and their credentials; and course completion records for each course completion. Many of these records are to be held by the CE provider and will be reviewed by CECBEMS during an audit. Course completion records, however, must be submitted to CECBEMS periodically in addition to being maintained by the CE provider. The CECBEMS AMS provides three tools that CE providers may use to submit these records: XML file upload, manual entry, and real time submission via web services.

The manual entry tool requires the CE provider to enter all of the required data for each course completion into the system using the Manual Entry tool on the Providers Only page. This tool is designed for CE providers with a small number of records or those who do not maintain these records in an automated database system.

The XML Upload tools are designed to let CE providers submit batches of course completion records using a file that contains all of the required data. The XML file must be produced in a specific format as shown in the *Sample XML File* and *Sample XML File with Sample Records* files available on the Providers Only page or the FAQ page. There is also a test tool that allows you to submit your XML file for format testing prior to submitting it for entry into the CECBEMS AMS.

Records can also be submitted in real time to the CECBEMS AMS using webs services.

REQUIRED COURSE COMPLETION DATA AND AUDITING

All CECBEMS approved CE providers are required to obtain and maintain specific data in several areas. For each course completion, CE providers are required to obtain and maintain the following data:

Course Title¹
Course Number (CECBEMS assigned number)
Instructor¹
Location¹
Date of course completion
Student's first name
Student's last name
Student's city of residence
Student's state license number²
Student's state of licensure²
Student's state license expiration date²
Student's NREMT certification number²
Student's NREMT reregistration date²
Number of CE units
Type of CE (Basic, Advanced, First Responder, Educator, Management)
Student's state license type

Optional reportable data:

Student's email address
Student's middle name or initial
Student's street address, state, and zip code
Student's phone number

¹ This information must be maintained, but is not reported to the CECBEMS AMS.

² If a student has a state license, the state of licensure, license number and license expiration date must be obtained. If the student has an NREMT certification, the certification number and reregistration date must be obtained. If the student has **both** a state license and NREMT certification, all of this data must be obtained and reported in the appropriate fields. See page 21 for detailed information about reporting license information.

Regardless of the method used to submit course completion data, the CECBEMS AMS has automated tools that allow CECBEMS to audit each CE provider's course submissions. These audit tools will provide summary and detailed reports that are used by CECBEMS to ensure CE providers are collecting and maintaining required data.

MANUAL ENTRY INSTRUCTIONS

To enter course completion data manually, be sure you have all the required information at hand and then log on using your CE provider User Name and Password. You will be taken directly to the Providers Only page. Click on the “Manual Entry” link.

1. Using the pull-down menu, select the course you are reporting and click “Start” (only your approved courses will appear in this menu.)
2. Enter License and Student Information:
 - A. If the student is already in the CECBEMS AMS system (has previously had a course completion reported by any CECBEMS-approved CE provider), use the Autofill tool by entering the student ID and then clicking on the Autofill link. The student ID is one string without spaces consisting of the license number, state of licensure, and last name (e.g. 1234TXSmith). If the student is in the system, the form will automatically be filled in with the data already in the system. Compare this data with the data you have collected, update anything necessary that has been autofilled then move to item #3.
 - B. If the student’s data does not autofill, you will have to enter the following information in the appropriate spaces:
 1. License Information. Each EMS student must have either a state license, an NREMT certification, or both. Insert the license information in the correct field. Dates are entered as mm/dd/yyyy. If the student has only an NREMT certification, enter “National Registry” (located below “Yukon Territory” on the pull-down menu). If the state or Armed Forces designation does not appear in the drop down list, select “Other.” Use the pull-down menu to enter the license or certification type. If the exact type is not on the list, select the type that most closely represents the license (e.g. Paramedic should be EMT-P, all types of EMT-Intermediate should be EMT-Int, etc. Note that EMT-1 is the number one, not the letter I). Use the “Other” only for non-EMS licenses (e.g. RN, PA, etc.)
 2. Student Information. At a minimum, you are required to have first name, last name, city of residence, and state. If you have the optional information, enter it in the appropriate boxes.

3. Enter Course Information:

Enter the course completion date (mm/dd/yyyy), select the category of credit (basic, advanced, etc), the number of CE hours (using digits up to two decimal places, e.g. 1, 1.5, 1.75, etc.), and then click Submit. (The course number was automatically entered when you started the session and selected the course that you were reporting). Note that each

course can only have one category of credit. If you have a course with multiple CE category types to report, you must make a separate course completion entry for each category of CE. If you submit course information different from the information stored in the CECBEMS database, the record will be flagged for lack of compliance.

4. Repeat this for each course completion you are reporting. When you have finished entering all students for a particular course, go back to the Manual Entry page, select the next course you are reporting, and continue as above.

XML UPLOAD APPLICATION INSTRUCTIONS

XML is a markup language for documents containing structured information. The XML upload application is designed to upload, check, and insert data into the CECBEMS AMS quickly and efficiently. The Providers Only page offers two XML tools to CE providers – a file upload application and a test tool. Also included are links to download .pdf files with a *Sample XML File*, a *Sample XML File With Sample Records*, the AMS Operations Manual, the XML test tool instructions, and instructions for Real Time Reporting via web services.

We highly recommend the use of the XML upload application. While CE providers may incur an initial cost to build an XML file creation tool, the savings over time should make these applications very attractive. Competent programmers should be employed to build a tool that is designed to extract the required data from your specific database and then create the XML file so that it contains all the required data in the format specified in the *Sample XML file*. Once you own this tool, you can use it whenever needed to create an XML file and upload it to the CECBEMS AMS. There is no charge to use the XML test or upload tools.

When an XML file is uploaded to the CECBEMS AMS, each course completion entry is checked for the required data. If all of the required data is present and in the proper format, the course completion is entered into the AMS. If required data is missing or is in an unreadable or inappropriate format, the CECBEMS AMS insets nulls in these fields, the entry is flagged as being out of compliance, and the course completion is entered into the CECBEMS AMS. Note that all course completions in the XML file are entered into the system when the file is uploaded, even those with missing or corrupt data elements. Course completions that are out of compliance with CECBEMS requirements are reported to the CECBEMS AMS administrator in an audit report and are addressed by CECBEMS. The AMS has audit features that check each data element in each course submission to find and report missing, corrupt, or spurious data elements. The logic table for the XML checking application and a description of each data element, whether it is required, and specific notes about the format for each element as well as an explanation of the audit process can be found in the appendices to this manual.

XML Test Application

The XML Test Application is designed to provide you a means to check the format of your XML file prior to submitting it to the CECBEMS AMS. You can run the test application as often as you like without cost and without submitting data to the AMS production database. The test tool is limited to XML files less than 1 MB in size. If you wish to test a larger file, break it down into smaller files and submit each of those. (Techie note: Browsers all have limitations on the amount of data they can handle. Each browser make and model may have a different capacity. A large file may cause extended delays or cause your browser to crash due to the amount of data returned from the test.) Please read the *XML Test Tool* instructions in the next section of this manual prior to using the XML test tool.

XML File Upload Application

This application is designed for XML files that are less than 8 MB in size. To use this application, click on the “XML Upload Application” link, click on the “Browse” button to browse to and select the appropriate XML file, and then click on “Upload.”

The file will be uploaded to the CECBEMS AMS. At the next scheduled run time (several times each business day), the CECBEMS AMS will process the file. After processing, a report will be emailed to the email address of record for the CE provider. That email will report the number of records entered and a list of errors encountered. Below is a sample of this confirmation email:

This is a message from an automated system. Please do not reply.

23 records were successfully entered.

Your session code is: DEMO1-e357f316-c5c2-4803-b4e5-1a4e05b28514.

Please retain this information for your records.

Warning! The following records contain errors:

Record 1: Error entering course completion date. A completion date is required.

Record 1: Error entering CE Units.

Record 1: Warning. No License information was provided for this record.

Record 1: Warning. No license expiration was provided for this record.

Record 11: CE Units Error. 0 units were submitted.

Record 12: CE Units Error. 0 units were submitted.

Record 13: CE Units Error. 0 units were submitted.

Record 23: CE Units Error. 0 units were submitted.

In this case, you submitted 23 course completion records, all of which were entered into the CECBEMS AMS. However, records number 1, 11, 12, 13, and 23 had errors that are specified in the report. The CECBEMS AMS auditing tools will report each of these records as a non-compliant course completion record

Note that when errors are encountered, each will be reported with the record number and each of the specific errors encountered. If you submit a file that contains a large number of errors, be prepared for a very large email! This is why we highly recommend that you use the XML Test tool before you submit data to the system.

Note also that each file submitted will be given a unique session code (like a serial number). This code is recorded in the confirmation email and is associated with each course completion record. We highly recommend you print out and save this report and the session number as a receipt and to identify a file if you need to make modifications to the submitted data in the future. It is a good idea to make a note on the printed confirmation email that will identify the information uploaded in that session, e.g. date range of course completions or the name of the file in your system.

Finally, be aware that the upload report includes a test of the existence of required data, and does not audit the data itself. The AMS periodically performs an audit of all new data loaded into its database and checks the individual data elements. The AMS also performs security tests of the data. You can read a description of the audit and security tests in Appendix C of this document.

Note that effective July 1, 2007, course completion records that are flagged for missing, incomplete, or erroneous data will incur an additional charge and CE providers will also be required to correct these flagged course completion records.

XML TEST TOOL INSTRUCTIONS

The CECBEMS AMS XML Test Tool is designed to test the format of your XML file. This is done in two steps. First, the tool removes the schema from your XML document and then compares it to the required schema. This is a very strict character-by-character test, and the slightest deviation in your schema from the required schema will result in an error. Next, you may attempt a test load of your file to the system. This mimics the behavior of the actual upload – while your test file and the results of your test are stored by the AMS, none of your data is entered into the production database.

Prior to uploading an XML file, we strongly recommend you run at least a sample of your XML file through the test tool. The test tool is not designed to handle large files, and files run through this tool should be no larger than 1 MB in size.

The test tool is not designed to replace in-house checks by the CE provider for proper formatting and testing of your XML files. All CECBEMS-accredited CE providers are required to have sufficient resources to properly capture, maintain, and report course completion data. All XML files should be parsed and confirmed by the CE provider prior to uploading. If you are not able to conduct parsing and confirmation functions, the CECBEMS database manager will be happy to give you a bid for performing these tasks and providing you with a detailed evaluation of your file before you use the XML test tool.

CECBEMS chose the XML format as the standard for reporting for many reasons, including it is a simple and reliable method of transmitting data between computer systems. Once you successfully build an XML file creation tool, it can perform your reporting duties with no additional programmer cost. Prior to building your XML creation tool, please download and read the AMS Instruction Manual and the sample XML files that include the schema from the CECBEMS web site. Links to these documents can be found in the **For CE Providers - Documentation** section of the FAQ page of the CECBEMS website. Also, be sure that your programmer has this information and has read it carefully.

All XML files sent through the test tool and the resulting messages are archived by the AMS. CECBEMS is able to determine if you have used the test tool and have successfully tested an XML file prior to an actual upload of an XML file to the system.

INSTRUCTIONS

1. Create your XML file according to the instructions and the examples. **Prior to submitting an XML file to the AMS, use any standard XML parser to validate your file to the supplied schema.**
2. Log in to the Providers Only page of the CECBEMS website.
3. Click on the “XML Upload Test Area” link.
4. Click on the Browse button, navigate to and select your XML file (no larger than 1 MB).

5. Click the “Upload” button. Wait until you have received the message, “Your file has been loaded. Click "Validate" button to validate. Your XML file has now been loaded into the testing section of the CECBEMS AMS.
6. The XML test tool consists of two steps – first schema and XML validation and second a test load of the data in the file. The first step includes a schema validation test and an XML formatting validation test. To start the first step, click the “Validate” button. This will order the AMS to check the formatting of the schema in your XML document. The AMS strictly compares your schema character-by-character to the required schema. The AMS will then check the XML formatting of your entire file to ensure it is a valid XML file. If your schema and XML formatting are correct, you will receive the following message:

Formatting validation is complete.

✓ **Schema matches approved document.**

✓ **Xml formatting valid**

No document formatting errors were returned. [Click here](#) to perform a load test.

If your schema does not match the required schema or your formatting has errors, you may receive messages similar to:

Formatting validation is complete.

⚠ **Schema does not match approved document**

✓ **Xml formatting valid**

No document formatting errors were returned. However, your schema does not match the required schema and your document cannot be reliably validated. Please carefully review the schema at <http://www.cecbems.org/schema.pdf> However, if you wish to proceed anyway, [Click here](#) to perform a load test.

Formatting validation is complete.

⚠ **Schema does not match approved document**

Errors Returned were:

The 'units' start tag on line 103 does not match the end tag of 'admin_reports_xmlReports'. Line 105, position 3.

If you receive an error at this point you should go back to your XML document, run it through your XML parsing tool, correct the error, and try again. Remember you can find sample XML files with the correct schema on the CECBEMS website on both the [Providers Only](#) page and the [FAQ](#) sections.

7. Step two of the XML test is the load test. This test simulates the loading of your data into the AMS. This test does not load your data into the production database. To perform a load test, click on the “Click here to perform a load test” at the bottom of the results from step one of the test process. If your data meets the basic requirements for loading, you will receive a message similar to this:

Test Course Load

Congratulations. You have successfully completed our formatting and load test.

3 records were entered. Your session code is: ce24a375-0f00-4e7e-bd5d-f31760b64f52.
Please retain this information for your records.

If the AMS finds problems with your data, a message similar to the following will be displayed:

Test Course Load

3 records were entered. Your session code is: 8d0e38bf-c719-4594-abb7-2e0649e15893. Please retain this information for your records.

The following errors were encountered:

 Record 2: CE Units Error. 0 units were submitted.

The Record number will direct you to the specific record in the file that has a data problem. In this example, the “CE Units” data is. Check your XML file and check the AMS manual for a list of the required data and the acceptable data types for each data field.

8. CECBEMS requires CE providers perform a test of their XML files prior to actually uploading to the AMS. If malformed XML files are uploaded to the production database (an actual upload), you will be charged a fee to manually remove these files from the AMS. You can perform an actual upload of any XML file that has passed the validation test whether it has any errors or not. However, submitting course completion records containing errors will result in higher course submission fees and an excessive or continued entry failure rate may put your accreditation at risk. Note that the AMS stores all test files uploaded and records all messages created during your test session.
9. To submit an XML file that has successfully passed validation, from the Providers Only page of the AMS, click on “XML Upload Application,” browse to and select your XML file, and then click “Upload.” If successful, you will receive the message, “Your file was successfully uploaded. You will receive an e-mail regarding its error status after it has been processed.” XML files are processed hourly during business hours, and after successful processing an email message with the results of your upload will be sent to your email address on record in the AMS.
10. Finally, note that the test tool is designed to check your schema, your XML formatting, and performs limited checks on the existence of required data tags. The test tool does not audit the data in your file. Subsequent to your loading of a file into the production system, the AMS performs detailed audit and security tests of the data submitted. If invalid data has been submitted or if required data is missing, commencing July 1, 2007, CECBEMS will charge you a penalty for each incomplete or incorrect record and will require you to correct these records.

REAL TIME UPLOAD INSTRUCTIONS

The CECBEMS AMS is capable of receiving your course completion data directly from your learning management system and its database via web services in real time. Essentially, your database can talk directly to the CECBEMS database and at the same instant that a course completion is entered in your database it will be simultaneously sent to the CECBEMS database. There are great values in this method for everyone – once built, CE providers do not have to ever prepare, test, or submit course completion records to CECBEMS manually; students do not have to wait for their records to be reported to CECBEMS; licensing agencies will have instant access to the current CE status of their licensees instead of having to wait for two months following the quarter in which the course was completed; and everyone benefits from not having to perform manual audits if a licensing entity needs corroboration at the time of relicensing.

The real time course completion upload application uses a technology called "web services" that is designed to facilitate the exchange of data between computers via the Internet.

The required data and datatypes are the same as for any course completion record being reported through the XML batch upload system, and the formatting of the data, the request, and the response are fully described in the WSDL (Web Services Description Language -- pronounced "wiz-dle") at: <https://www.cebems.org/reportingservice/realtimereporting.asmx?WSDL>. The system uses a communications protocol called Simple Object Access Protocol (SOAP). There are two SOAP protocols, 1.1 and 1.2, and the AMS will accept either version.

This reporting methodology requires that the CE provider's programmer be knowledgeable in both web services and in using SOAP. It is the CE provider's responsibility to ensure their programmer has the requisite knowledge and expertise in these areas. CECBEMS will not provide training, troubleshooting, or other support for real time reporting at no cost; however, support is available to CE providers at the current hourly rate.

Submitting Courses

When submitting course completion data via web services, you are required to include a username and password in your post. The username for web services is different from the username used to log into the AMS. Please contact CECBEMS for your web services username.

To submit actual course completions using web services, CE providers can direct their posts to: <https://www.cebems.org/reportingservice/realtimereporting.asmx>

To view the web service description using your web browser, you may also navigate to: <https://www.cebems.org/reportingservice/realtimereporting.asmx> and click on "Service Description" to view the WSDL. Again, the WSDL describes the request, response, and data formatting required to submit course information to the CECBEMS system via web services.

Click on "Submit Report" to see the SOAP layouts for both versions 1.1 and 1.2. You will notice that there are two sections for each SOAP version -- the first and longer section is what the CE provider's computer must send to the CECBEMS AMS. The second and shorter section is the response the CECBEMS AMS sends back to the CE provider's computer if everything

went OK. (If there is a problem the response will be an error message). The string value returned in response to a successful post will be a unique serial number. We recommend that CE providers retain these responses in their databases as a "receipt" that proves they sent the course completion record and that CECBEMS received it. We recommend that you set the field in your database to store this receipt with the following characteristics: NVARCHAR, 255 characters. Note that during an audit, CECBEMS may review these receipts for every course completion in the CE provider's database.

Information being sent includes sensitive data including your Username and Password. Always use the secure protocol (https) when sending course completion reports via web services.

Testing

The CECBEMS AMS offers a real-time upload test mechanism. CE providers may test their posts at: <https://www.cecbems.org/reportingService/ReportTesting.aspx>. This application is identical to the production reporting service with the exception that the code that inserts data into the database is commented out.

Summary

When a CE provider wants to try real time reporting via web services they must have:

- a valid and active username and password for the CECBEMS AMS. Note that the username for real time reporting is different than for XML reporting. Contact CECBEMS for the correct username.
- all of the required data in the proper format (as noted in the existing CECBEMS AMS manual)
- the URLs for the test and upload applications
- web services established and programmed in the proper format (see the URLs to the WSDL above)

Uploads must be successfully tested using the test mechanism prior to performing actual uploads.

All data sent via web services to the CECBEMS AMS must be encrypted under SSL (https).

Data sent via real time reporting to the CECBEMS AMS that requires troubleshooting or removal will incur a charge, as will assistance in setting up client systems or troubleshooting client system implementation of the real time reporting tools.

REVIEWING YOUR COURSE COMPLETION ENTRIES

At any time you may review, but not edit or delete, your course completion records that are in the CECBEMS AMS. To do this, click on the “Student Records” link on the Providers Only page. Enter a beginning and ending date using the drop-down calendars, and then click Go.

You will see a report that lists all of the students in the system who have completed a course from you within the date range you entered. Click on the “Student Summary” link for a particular student to view a list of all your courses that student has completed.

MODIFYING YOUR COURSE COMPLETION ENTRIES

CE providers can modify course completion data already entered into the CECBEMS AMS only upon special approval of the CECBEMS Executive Director. This is a security measure designed to ensure the integrity of the database.

To modify a record, contact the CECBEMS Executive Director and obtain authorization. If approved, you will receive a special User Name, Password and a link to the Special Access page (this User Name and Password will not work on the regular AMS login page). This User Name and Password can only be used once and will expire in 24 hours. (If it is not used in 24 hours, it will expire. Once used, it can never be used again, even if it is within the 24-hour period.)

When you log in on the Special Access page, a list of all of the entries by session code will be presented (one reason to print and file the confirmation email you receive after each upload which gives the session codes). To edit records in a session, click on the “Records” link. You will then see a list of all the entries made in that session. Click on the “Detail” link next to the course completion record you need to edit.

A screen with all of the data entered for that course completion record is presented. Modify the necessary data and click on Update. That record has now been modified.

Be sure you have completed all of the necessary modifications and then close your browser.

Note that logging in to this Special Access application does not log you into the site as a CE provider, and you will not have access to the other CE provider tools using this login.

APPENDIX A

AUDIT LOGIC TABLE

Data	Error If Missing?	Comments
emailAddress	No*	See * comment below
licenseType	Yes	See list of approved types
stateIssued	Yes	Enter NR if only NREMT license
licenseNo	Yes, See Note A, page 21	Both licenseNo and nremtNo must be absent to cause an error
expiration	Yes, See Note B, page 21	Both expiration and nremtReReg must be absent to cause an error
dateOfCompletion	Yes	Use proper format. See Date Format, p. 22
provider	Yes	Use CECBEMS assigned CE provider number
city	Yes	
nameLast	Yes	
nameFirst	Yes	
nameMiddle	No	
street	No	
nremtReReg	Yes, See Note B, page 21	Both expiration and nremtReReg must be absent to cause an error
state	No	
zip	No	
nremtNo	Yes, See Note A, page 21	Both licenseNo and nremtNo must be absent to cause an error
phone	No	
courseNo	Yes	Use CECBEMS assigned number
units	Yes	Also generates an error if 0 is entered or if the number entered does not agree with the course record in the AMS.
Type	Yes	See list of License type definitions, p. 22.

If a required piece of data in a course completion record is missing or is in a format that the system cannot read or convert, the system will flag that course completion record as being out of compliance with CECBEMS requirements. The CECBEMS Administrator will receive audit reports for all course completion submissions showing the CE provider number and the non-compliant course completions reported. CECBEMS will charge higher submission fees for non-compliant completion records and will take appropriate enforcement action based on these reports commencing July 1, 2007.

* The AMS is designed to notify students by email when a course completion is entered on their individual records. This feature will be activated in the near future. If students cannot access their individual records to confirm courses, their recourse will be to contact you, the course provider. You will then have to arrange special access to the AMS to enter the student's email address into the system.

Students who do not have personal email accounts should be encouraged to set up an account with one of the many free email services, or they can use the email address of a friend. One need not own a computer to have an email address – these free email services can be accessed from any computer. CECBEMS strongly recommends that you encourage students to provide an email address (or arrange for an email account) prior to your uploading of course completion records.

APPENDIX B

XML FIELD DEFINITIONS

Data Type	Required	Definition
emailAddress	No*	Student's email address – See * note below
licenseType	Yes	See License Type Definitions for acceptable entries.
stateIssued	Yes	Two letter abbreviation from USPS abbreviation table. If NREMT license only, enter NR
licenseNo	Yes, See Definition at right.	Must have unless student has only an NREMT license. See note A below.
expiration	Yes, See Definition at right.	Must have unless student has only an NREMT license. See Note B below. See date format below.
dateOfCompletion	Yes	Date course is completed. See date format below.
Provider	Yes	CE provider's CECBEMS-assigned number
City	Yes	Student's city of residence
nameLast	Yes	Student's last name
nameFirst	Yes	Student's first name
nameMiddle	No	Student's middle name or initial
Street	No	Student's residence address
nremtReReg	Yes, See Definition at right	Must have unless student has only a state license. See Note B below. See date format below.
State	No	Student's state of residence.
Zip	No	Student's residence zip code
nremtNo	Yes, See Definition at right.	Must have unless student has only a state license. See Note A.
Phone	No	Student's phone number
courseNo	Yes	CECBEMS' assigned Activity Number
Units	Yes	Number of CEHs awarded. See Units format.
Type	Yes	CEH type. Enter only one type of CE as approved for the reported activity: Basic, Advanced, Educator, First Responder, Operational, or Management.

* The AMS is designed to notify students by email when a course completion is entered on their individual records. This feature will be activated in the near future. If students cannot access their individual records to confirm courses, their recourse will be to contact you, the course provider. You will then have to arrange special access to the AMS to enter the student's email address into the system.

Students who do not have personal email accounts should be encouraged to set up an account with one of the many free email services, or they can use the email address of a friend. One need not own a computer to have an email address – these free email services can be accessed from any computer. CECBEMS strongly recommends that you encourage students to provide an email address (or arrange for an email account) prior to your uploading of course completion records.

Note A: CE providers must collect and report the EMS license(s) held by each student. There are three possible license scenarios: a student can have only a state license, only an NREMT certification, or both a state license and an NREMT certification. If the student has only a state license, report the state of licensure in the stateIssued field and the state license number in the licenseNo field. **If the student has only an NREMT certification, report NR in the stateIssued field** and the NREMT certification number in nremtNo field and the re-registration date in the NREMTReReg field. If a student has both a state license and an NREMT certification, enter all these data in their respective fields.

Note B: CE providers must collect and report the EMS license expiration or re-registration date for each EMS license and certification held by the student. If a student holds a state license, enter the state license expiration date in the expiration field. If a student holds an NREMT certification, enter the NREMT re-registration date in the nremtReReg field. If a student has both a state license and an NREMT certification, enter both the expiration and re-registration dates in the appropriate fields.

If a student holds a license in more than one state, the options are as follows:

- 1. Have the student select one state for CECBEMS reporting purposes, but make the student aware that regulators from the other states in which he/she holds a license will not be able to access his/her course completion record.**
- 2. Create multiple records for the student, one for each state of licensure, but be aware that you, the CE provider, will be billed the current rate for each record submitted.**

In those rare instances in which a student is a professional but does not have a license number and wants a course completion certificate with CECBEMS accreditation, insert the student's birth date (mm/dd/yyyy) in the license # field.

Note C: If any required data are missing, the course completion record will be noted by the system as being out of compliance with CECBEMS requirements. If neither a state license number and expiration date nor an NREMT number and re-registration date are entered, the course completion record will be noted by the system as being out of compliance with CECBEMS requirements.

Note D: CECBEMS standards require you to obtain license information for all CECBEMS approved courses you deliver. If a student does not hold an EMS license but still wants a course completion certificate with CECBEMS accreditation (for example, a registered nurse or other health professional), collect and report the license information for the student's appropriate profession and enter Other as the license type.

If a student wants to take a course but has no professional license, you cannot issue a course completion certificate to that student with CECBEMS accreditation information. In such a case, you must either not issue a completion certificate or must issue a special certificate that contains no CECBEMS accreditation information.

State Abbreviation Format: Use only the two-letter abbreviations for states found in the US Postal Service abbreviations table: http://www.usps.com/ncsc/lookups/usps_abbreviations.html This table contains abbreviations for the 50 U.S. states, U.S. protectorates, and for the Armed Services. For the stateIssued field, if the student has only an NREMT certification, enter NR. If the student is licensed or resides outside the U.S. or its protectorates, enter XX.

Date Format: The date must be an actual date (you cannot enter a date that does not exist, such as February 29 or September 31). The month, day, and year are required.

Acceptable Examples:

2007-01-01T00:00:00.0000000-08:00;

2007-01-01; 01/01/2007;

January 1, 2007

Unacceptable Example: February 29, 2006 (a non-existent date)

Units format: Units must be entered as a digit(s) or digit(s) plus a dot and one or two digits. Units cannot be zero (0).

Acceptable Examples: 1 1.0 1.5 1.75

Unacceptable examples: 1 ½ 3/2 1 ¾

License Type Definitions: The following table lists the only allowable entries for the licenseType field. If a license level or type does not fall within any of the categories, list it as “Other.” These were chosen to represent the vast range of license types in EMS. **Students should select the license type that most closely represents their license type, even if it is not exact.** For example, all EMT-Intermediates regardless of specialty should enter “EMT-Int”. All paramedics should enter EMT-P. Be sure that there are no leading or trailing spaces in your entries. Data entries must match exactly what is in this list.

License Type	Comments
CFR	
EMT-1	Use the Arabic number one (1), not the Roman numeral one (I)
EMT-B	
EMT-D	
EMT-Int	EMT-Intermediate (all levels); capitalize the I, do not use a period
EMT-2	
EMT-CC	
EMT-P	Use for all levels of Paramedic and equivalent license types
Other	Use this only when no EMS license type exists (e.g. for an RN)

APPENDIX C

CECBEMS AMS AUDITING

The CECBEMS AMS performs regular audits of all course completion data submitted by CE Providers. The purpose of the audit is to ensure the integrity of the data collection, reporting and maintenance practices of providers of CECBEMS-accredited activities. Failure to maintain proper and complete records of courses offered and courses completed is a serious breakdown in the continuing education process. EMS professionals complete continuing education to update their base knowledge; to learn new concepts, techniques, and information; and to update base knowledge that may have deteriorated through lack of use. EMS professionals must also complete continuing education as a prerequisite to maintaining their license or certification, and if course completions cannot be fully validated it places the student's professional standing at risk as well as bringing the CE provider's record keeping and reporting process into question.

After a CE provider enters course completion data into the CECBEMS AMS, the system performs an automated audit and security routine and reports the findings to the CECBEMS staff. The audit routine, detailed below, consists of checking that all required data elements are present and that the data elements are in the proper format. Additionally the routine includes security tests that indicate a CE provider may be deliberately or inadvertently circumventing CECBEMS requirements. These security tests are confidential and are released only to essential CECBEMS personnel.

Audit Tests

1. Is there a license type and is it on the approved list of license types? (See page 22)
2. Is there a state issued and is it on the approved list of state abbreviations? (See page 22)
3. Is there both a license number and state issued, and is the state on the approved list of state abbreviations? If not, the state issued must be NR and an NREMT number and NREMT Reregistration date must be entered.
4. Is there a license expiration date in the proper format?
5. Is there a date of course completion and is it within the course approval period?
6. Is there a city?
7. Is there a first name?
8. Is there a last name?
9. Is there both an NREMT number and NREMT Reregistration date? (required if there is no state license information or if the student is licensed by both their state AND registered by NREMT.)
10. Is there a course number and is that course and number entered in the CECBEMS AMS?
11. Is there a number of units (CEHs) and is it in the proper format? (See page 22)
12. Is there a CE type and is it on the approved list of CE types? (See page 20 and check the approved CE type(s) for the course)

Note: All dates must be in the proper format as noted on Page 22.

APPENDIX D COMMON PROBLEMS

As a condition of being granted accreditation from CECBEMS all CE providers agree to comply with several requirements, including the collecting and reporting of specific pieces of data. CECBEMS is committed to the provision of quality continuing education activities. We feel strongly that maintenance of reliable records is paramount to recertification of practicing EMS providers.

To make recertification easier for providers, we have been phasing in the CECBEMS Accreditation Management System (AMS). The CECBEMS AMS allows CE providers to report data in three ways: manual entry, XML file, and real time reporting. All methods require the same data be reported, differing only in the method in which the data are reported.

Since the AMS has been in operation, we have found that some CE providers have had problems successfully submitting their data to the AMS. We have analyzed these problems and have found the following common issues:

1. CE providers have failed to collect the required data.

All CE providers are required to collect and report the same data. The most common pieces of data that are not collected include state license number, state license expiration date, NREMT number and re-registration date, and date of course completion. These are key pieces of data that are necessary to ensure EMS professionals receive credit for their CE activities.

One reason providers of distributed learning (DL) courses have failed to collect this data is that their learning management systems were not designed to meet the special requirements necessary to deliver CECBEMS accredited continuing education. DL providers must ensure this, and all required data, is collected prior to delivering a course with a CECBEMS accreditation. Likewise, providers of live courses must ensure their data collection procedures collect all required data either during the registration process or before the certificate is issued.

2. CE providers have collected data in ways that make retrieval and reporting difficult.

Regardless of how you collect data, you must maintain it in accordance with CECBEMS requirements. Providers of live courses using written registration pages must ensure all data is legible and is securely retained for the proper amount of time following course completion.

Of those CE providers using electronic methods of capturing and storing data, many are using a spreadsheet program such as Excel. Excel is not a database program and is designed for the manipulation of numbers, not data. Its ability to output and share data is very limited.

A true enterprise class Database Management System, such as Microsoft SQL Server, Oracle, or IBM DB2 is the ideal tool for capturing data. If you are using a database, be sure it is robust enough to handle the types and amounts of data you are required to collect. Be sure it collects and stores all required pieces of data and is set up to retrieve those pieces of data.

3. CE providers do not have (or have not dedicated) sufficient or appropriate resources to collect and submit the data to the CECBEMS AMS.

The CECBEMS AMS is built on the newest platform that is designed to share data between systems via the Internet. The easiest and most efficient tool for this transfer is an Extensible Markup Language (XML) file. XML is a W3C initiative that allows information and services to be encoded with meaningful structure and semantics that both computers and humans can understand. In the simplest possible terms, an XML file is a text file in a specific format that contains individual pieces of data written to conform to a specific set of rules or “schema.”

There are many ways to create this kind of text file, including simply typing it into notepad (although this is not efficient for large amounts of data.) Ideally, a programmer can create a tool that will essentially copy the required data from your database and then write the XML file in the correct format and syntax. Once you have this tool it can be used repeatedly by any non-programmer to create and submit the required reports to CECBEMS. CECBEMS-approved CE providers who consistently submit problem-free uploads have such a tool that allows any non-tech person to simply enter the beginning and ending date of the report, enter their CECBEMS AMS log-in name and password, and click one button to create and submit the XML file to the AMS. This is the beauty of the XML reporting tool – build one small application and reporting will not require technical resources from then on.

Our analysis of the troubles CE providers have been experiencing in successfully writing the XML files shows that the single biggest problem has been that the technical resources assigned to create the XML file are not sufficiently trained in XML syntax.

We want to be sure that you understand that we are not commenting on any individual’s abilities, but rather have found that many Web Designers have not had the benefit of training or experience in XML. Our goal here is simply to try to help CE providers understand that the resources you may successfully use on a daily basis may not be the best resources to use when confronted with the demands of business to business data transfer.

If you are having difficulty finding a resource that can successfully produce your XML file, we suggest you evaluate a prospective XML programmer the using following questions:

- A. What database experience do you have?
- B. What development environment(s) do you use? (“translation program”)
- C. Can you write code directly without the development environment?
- D. What training/experience have you had with XML?
- E. Are you familiar with XML syntax?
- F. Have you ever transferred data between Database Management Systems using XML?

4. CE providers have failed to utilize the resources we have provided them, including the AMS CE providers Manual and sample XML files.

We encourage CE providers to download these resources, make them available to your XML programmer, and refer to them when building files for submitting data to the AMS. These resources can be found in the “For CE Providers – Documentation” section of the FAQ page on www.cecbems.org

APPENDIX E

ORGANIZATIONALLY APPROVED CE PROVIDER SUPPLEMENT

Organizationally Approved CE providers have the added responsibility of entering and maintaining in the AMS all of the courses they approve. Courses must be entered into the AMS and be marked approved prior to being offered to students.

The Supplement to this Manual with instructions explaining how to insert a new course and modify an existing course is available on the AMS. Once logged in, Organizationally Approved CE providers will find a box with Course Management Tools at the bottom of their Providers Only page. A link to the Supplement to this Manual will be in that box.