

BEAMEX CMX

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Product Beamex CMX	Version Version 2, Revision 2.11.4
Related Products Beamex CMX Professional, Version 2, Revision 2.11.414.0 Beamex CMX Professional FS, Version 2, Revision 2.11.424.0 Beamex CMX Enterprise, Version 2, Revision 2.11.424.0	Release date 5th June, 2018
Short description Beamex CMX 2.11.4	

28th Release Note

The following improvements have been included into Beamex® CMX Enterprise and Beamex® CMX Professional FS:

Fixes:

1. When a user tried to change his / her mobile password, CMX did not accept login password if LDAP was used if CMX database had a password stored for the user..
2. If user was created after LDAP had been enabled CMX did not require CMX Login password when mobile password was changed in CMX.

Known issues:

1. If Site User Maintenance is enabled and the same MC6 is used on several sites then only the users from the last used site will be visible in MC6.
2. Long Before/Adjust/After Notes are not supported on all devices, they may work slowly, or have other issues. Fully supported devices are MC6 family calibrators and bMobile 2.0 application.
3. If existing CMX database contains duplicate calibrator/module definitions, because it was possible to create such with earlier CMX versions, then contact Beamex Professional Services to get help to find the duplicates and to solve the issue in the CMX database.
4. The rounding of Error Significance is not following the Beamex standard and is therefore differently rounded than in Beamex MC6 and bMobile 2.
5. Due to a problem in the Microsoft .NET Framework 4.6, included in the CMX release, information of SQL Server Instances found are not displayed correctly. Installing an updated version of the .NET Framework, e.g.

- .NET Framework 4.6.1, solves the problem. It is recommended to update the Microsoft .NET Framework bundled with the CMX release.
6. In CMX manual entry: When saving an Incomplete Switch calibration without any references and 'Calibrator reference required when saving calibration' is enabled, then the calibration will remain incomplete even if entering values for incomplete points after references are added.
 7. When sending an instrument with a newly created User Defined Transfer Function to MC4 the sending may fail the first time, but when resending the same instrument, it will work.
 8. Instruments downloaded to Pocket PC should not be uploaded to another CMX database, because communication uses unique procedure level code to join it to the instrument data. Reading instrument to another database having similar procedure level code might mismatch instrument 's procedure data.
 9. When CMX is used with High DPI displays then the scaling must be set to 100% (default value) for CMX to work properly. CMX currently is a non-DPI aware application. A DPI higher than 96 (100%) will stretch the UI making it somewhat blurry.
 10. Environment, Device, Modules and RJ temperatures for Results will always be converted to degrees Celsius even if another unit is used in the device.
 11. Environment pressure will always be converted to kPa even if another unit is used in the device.
 12. When viewing Weighing instrument calibration results in CMX, the results are arranged according to AsFound/AsLeft status. This means that the repeats are not shown in a chronological order, if an AsFound repeat is made after an AsLeft repeat while performing a Weighing Instrument calibration. This issue exists both with Manual Entry and when receiving results from a device.
 13. If both, Decimal symbol and Digit grouping symbol are defined in Regional Settings, then the user must strictly follow the settings or else the entered value may be stored incorrectly. This may happen e.g. in Function or Procedure view, when entering numerical data and Decimal symbol is , (comma) and Digit grouping symbol is . (dot). If the user accidentally enters 1.5 instead of 1,5, the value will be stored as 15. If only Decimal symbol is defined in Regional settings, then the entered value will be validated before saving and only values with correct decimal symbol are then allowed. Workaround to avoid mistakes is to remove the setting for Digit grouping symbol in Regional settings. Note: When entering results in Manual Entry both dot and comma are interpreted as decimal symbols independently of the Regional settings.
 14. Right column Free Check field may not be visible if corresponding left column Free Check field is set as hidden.

Other Important Information:

1. This is the last CMX version that will communicate with CMX for Pocket PC. bMobile 2.0 will replace the Pocket PC application.
2. This is the last CMX version that will communicate with bMobile 1.0. bMobile 2.0 will replace the bMobile 1.0 application
3. This is the last CMX version that allows zero range instruments to be created.
4. This is the last CMX version that allows zero as error limit to be created.
5. This is the last CMX version that allows different input and output range for Weighing Instrument functions to be created.
6. This is the last CMX version that allows other transfer functions than linear for Weighing Instruments to be created.
7. This is the last CMX version that will be officially tested with Windows Server 2008 (R2) and SQL Server 2008 (R2), however CMX will most likely still work on these versions.
8. CMX now uses Away from Zero rounding, however a computers binary representation of floating point numbers are not always precise, e.g. the value seen as 0.575 on the screen is binary interpreted as 0.5749999999999929 in the computer's memory. Therefore CMX will prior to **final rounding** of calculated calibration point errors add 0.0000000001 (subtract for negative values) to force the value to always round away from zero. The value 0.0000000001 is selected as a "safe" value between the Max Error Resolution of 6 decimals in CMX and the max resolution for a value of the data type double, a too small value near the max resolution for a double value will not have the right effect and rounding may go in the wrong direction. This method is also implemented for the rounding of Combined Error Limits.
9. If MC6 time zone is set differently to CWSI client time zone, the due date may still be re-calculated. To avoid this, make sure that the Calibrator and CWSI client are using the same time zone.
10. The database provider for SQL Server currently used in CMX does not support TLS 1.2.
11. This is the last CMX version that will be supported on Windows Vista SP2 and Windows Server 2008 SP2.

- END OF 28TH RELEASE NOTE -

Product Beamex CMX	Version Version 2, Revision 2.11.3
Related Products Beamex CMX Professional, Version 2, Revision 2.11.314.0 Beamex CMX Professional FS, Version 2, Revision 2.11.324.0 Beamex CMX Enterprise, Version 2, Revision 2.11.324.0	Release date 18th May, 2018
Short description Beamex CMX 2.11.3	

27th Release Note

The following improvements have been included into Beamex® CMX Enterprise and Beamex® CMX Professional FS:

Fixes:

1. When 'Enhanced work order handling' is enabled in CMX and Beamex Business Bridge is configured to save work order on procedure level and to export work order when calibration is approved; Calibration approval status check is added before changing work order status. The work order is no longer set into 'Done' state when editing a result, but not approving it.
2. Fixed an issue where CMX would indicate that note texts have changed when receiving instrument and when they only have different line endings.
3. Removed the zero character from end of free fields to avoid problems in B3 export.
4. Fixed issue with Required firmware version when Mobile Security Plus is enabled. Now versions with only zeros as minor, like v3.00 are supported.
5. Fixed issue where CMX deleted instruments from calibrator after receive, even though the instruments were not successfully received. Now, only successfully received instruments are deleted. Error messages regarding this problem are also improved.
6. If any position, device, function, procedure or result free field is hidden in CMX then its data is not anymore updated when receiving from bMobile 2.

7. Procedure level "Reject if Calibrator Overdue" setting is no longer able to change when receiving instrument to CMX database. When "Reject if Calibrator Overdue" is enabled in CMX then a unnecessary procedure data update occurred when receiving from MC6 calibrator because this field is not sent there.
8. Uncertainty was not always calculated since no suitable module (specs) were found due to different upper/lower casing in Manufacturer name.

Known issues:

1. If Site User Maintenance is enabled and the same MC6 is used on several sites then only the users from the last used site will be visible in MC6.
2. Long Before/Adjust/After Notes are not supported on all devices, they may work slowly, or have other issues. Fully supported devices are MC6 family calibrators and bMobile 2.0 application.
3. If existing CMX database contains duplicate calibrator/module definitions, because it was possible to create such with earlier CMX versions, then contact Beamex Professional Services to get help to find the duplicates and to solve the issue in the CMX database.
4. The rounding of Error Significance is not following the Beamex standard and is therefore differently rounded than in Beamex MC6 and bMobile 2.
5. Due to a problem in the Microsoft .NET Framework 4.6, included in the CMX release, information of SQL Server Instances found are not displayed correctly. Installing an updated version of the .NET Framework, e.g. .NET Framework 4.6.1, solves the problem. It is recommended to update the Microsoft .NET Framework bundled with the CMX release.
6. In CMX manual entry: When saving an Incomplete Switch calibration without any references and 'Calibrator reference required when saving calibration' is enabled, then the calibration will remain incomplete even if entering values for incomplete points after references are added.
7. When sending an instrument with a newly created User Defined Transfer Function to MC4 the sending may fail the first time, but when resending the same instrument, it will work.
8. Instruments downloaded to Pocket PC should not be uploaded to another CMX database, because communication uses unique procedure level code to join it to the instrument data. Reading instrument to another database having similar procedure level code might mismatch instrument 's procedure data.

9. When CMX is used with High DPI displays then the scaling must be set to 100% (default value) for CMX to work properly. CMX currently is a non-DPI aware application. A DPI higher than 96 (100%) will stretch the UI making it somewhat blurry.
10. Environment, Device, Modules and RJ temperatures for Results will always be converted to degrees Celsius even if another unit is used in the device.
11. Environment pressure will always be converted to kPa even if another unit is used in the device.
12. When viewing Weighing instrument calibration results in CMX, the results are arranged according to AsFound/AsLeft status. This means that the repeats are not shown in a chronological order, if an AsFound repeat is made after an AsLeft repeat while performing a Weighing Instrument calibration. This issue exists both with Manual Entry and when receiving results from a device.
13. If both, Decimal symbol and Digit grouping symbol are defined in Regional Settings, then the user must strictly follow the settings or else the entered value may be stored incorrectly. This may happen e.g. in Function or Procedure view, when entering numerical data and Decimal symbol is , (comma) and Digit grouping symbol is . (dot). If the user accidentally enters 1.5 instead of 1,5, the value will be stored as 15. If only Decimal symbol is defined in Regional settings, then the entered value will be validated before saving and only values with correct decimal symbol are then allowed. Workaround to avoid mistakes is to remove the setting for Digit grouping symbol in Regional settings. Note: When entering results in Manual Entry both dot and comma are interpreted as decimal symbols independently of the Regional settings.
14. Right column Free Check field may not be visible if corresponding left column Free Check field is set as hidden.

Other Important Information:

1. This is the last CMX version that will communicate with CMX for Pocket PC. bMobile 2.0 will replace the Pocket PC application.
2. This is the last CMX version that will communicate with bMobile 1.0. bMobile 2.0 will replace the bMobile 1.0 application
3. This is the last CMX version that allows zero range instruments to be created.
4. This is the last CMX version that allows zero as error limit to be created.
5. This is the last CMX version that allows different input and output range for Weighing Instrument functions to be created.

6. This is the last CMX version that allows other transfer functions than linear for Weighing Instruments to be created.
7. This is the last CMX version that will be officially tested with Windows Server 2008 (R2) and SQL Server 2008 (R2), however CMX will most likely still work on these versions.
8. CMX now uses Away from Zero rounding, however a computers binary representation of floating point numbers are not always precise, e.g. the value seen as 0.575 on the screen is binary interpreted as 0.574999999999999929 in the computer's memory. Therefore CMX will prior to **final rounding** of calculated calibration point errors add 0.0000000001 (subtract for negative values) to force the value to always round away from zero. The value 0.0000000001 is selected as a "safe" value between the Max Error Resolution of 6 decimals in CMX and the max resolution for a value of the data type double, a too small value near the max resolution for a double value will not have the right effect and rounding may go in the wrong direction. This method is also implemented for the rounding of Combined Error Limits.
9. If MC6 time zone is set differently to CWSI client time zone, the due date may still be re-calculated. To avoid this, make sure that the Calibrator and CWSI client are using the same time zone.
10. The database provider for SQL Server currently used in CMX does not support TLS 1.2.
11. This is the last CMX version that will be supported on Windows Vista SP2 and Windows Server 2008 SP2.

- END OF 27TH RELEASE NOTE -

Product Beamex CMX	Version Version 2, Revision 2.11.2
Related Products Beamex CMX Professional, Version 2, Revision 2.11.214.0 Beamex CMX Professional FS, Version 2, Revision 2.11.224.0 Beamex CMX Enterprise, Version 2, Revision 2.11.224.0	Release date 7th March, 2018
Short description Beamex CMX 2.11	

26th Release Note

The following improvements have been included into Beamex® CMX Enterprise and Beamex® CMX Professional (FS):

New major features:

1. CMX now supports communication with the new Beamex MC6-Ex calibrator.

Fixes:

1. Improvements to bMobile 2.0 communication.
2. In previous versions, Required Readability/Resolution value changed when instrument was sent to MC4 or MC6, if the Required Readability/Resolution was set to a whole number in CMX (1, 10, 100). These values were converted to 0.01 when sending an instrument to MC4 and MC6. This is now corrected.
3. Fixed a query timeout issue when receiving results if audit trail and automatic check out/check in were enabled.
4. Corrected hiding/unhiding of following User interface fields that were not working in Tools, User Interface, Customize...
 - Calibration Result Properties -view: Environment Temperature, Environment Temperature 2, Device Temperature, Input Calibrator Temperature, Output Calibrator Temperature, Environment Humidity, Environment Pressure and RJ Temperature.
 - Calibration Procedure view: As Found Count, As Left Count, Calibrators To Use, Reject If Calibrator Is Overdue, Before Calibration Note, Adjust Note, After Calibration Note, Pre-enter previous values to Manual Entry, Input Loop Supply and Output Loop Supply.

5. Fixed a bug making it impossible to receive a single result when “Mobile security plus” and “Do not allow results to be deleted until all results are received for an instrument” were enabled. All instruments and results had to be received before deleting instruments and results from a Mobile Device was possible.
6. A default value for Acceptance field on procedure level is set as “Manual”. The database conversion will add the default value to all existing procedures where the Acceptance field is empty. The default value is also used when creating a new procedure for conventional or weighing instrument types. This correction makes instruments compatible with MC6 and bMobile 2.0.
7. Certain language files contained incorrectly defined text parameter definition. CMX takes value at run time when %1, %2 or %3 is defined in the text string. This is now corrected in all language files.
8. Sensor names can now be changed in calibrator firmware without causing incompatibility in the communication driver. The sensor name is no longer used as a key, instead a numerical key is used.
9. Deleting the first calibration result in a chain of results in MC6 and MC4, where there were previous results, caused the following results to be combined with the previous. This problem is now corrected.
10. The Calibration Result free fields were not transferred to an MC6 family calibrator or to bMobile 2.0 by CWSI (Calibrator Web Service Interface). This problem is now corrected.
11. When a CMX supervisor is sending instruments to a device then all active users or all valid mobile users (depends on Mobile Security Plus settings) are sent to MC6 calibrator or bMobile 2.0.
When site user maintenance is enabled then instruments, users and references (bMobile only) that are transferred to mobile devices depend on the site groups the user sending the instruments belongs to.
12. When CWSI settings window was closed, a new connection was always created on the CWSI server. This problem is now corrected so a new connection is only created if settings are changed. Old connection is now also disposed before a new is created.
13. Windows forms high DPI auto-resizing disabled since CMX does not support it. Note: This correction does not work with Windows 7, see known issues.
14. The Before Value for Adjust If Error, Don't Adjust If Error and Adjust To Error fields are now correctly written to Audit Trail when edited in the procedure.
15. The new USP41 rules says the following for the Repeatability test: ‘If the standard deviation obtained is less than 0.41d, where d is the scale interval, replace this standard deviation with 0.41d’. Due to an error in the code the standard deviation was never replaced with 0.41d, this is now corrected.

16. If calibrator manufacturer was changed several times during one CMX session then manufacturer adaptation was not done again during calibrator communication and CMX kept only the first manufacturer adaptation. This caused new calibrator models to be created in CMX database, which in turn caused problems to get calibrator reference. This is now corrected.
17. The error graph scaling was not correct when combined error limits were used and the highest point of the error limit was in the middle of the input range. This is now corrected.
18. Corrected an issue where the validation of the error limit could give a false message that the error limit is not above zero when sending to MC6 or bMobile 2.0.
19. Calibration procedure page fields in manual entry and MPE limit fields in result view contained some hardcoded design time data that was sometimes visible. This is now corrected.
20. Any calculated error value or error limit smaller than machine epsilon $1.11\text{e-}16$ will be interpreted as 0 prior to rounding, machine epsilon is the smallest double value that a computer can correctly handle.
https://en.wikipedia.org/wiki/Machine_epsilon
21. Uncertainty calculation correction for weighing instrument in manual entry: Uncertainty caused by repeatability test was not always included for other repeat tests. This happened if repeats were entered so that after entering repeatability test result, the other already entered test repeats were not selected/viewed in UI. This is corrected so that CMX now always automatically scans through all entered repeats before saving results.
22. When printing certificates the Calibration.Results.Repeat1 and Calibration.Results.Repeat2 level's DateTime variable type is now corrected so that the date is shown correctly.
23. Resolution for nominal test point values corrected when sending instruments to devices. Note: MC6/MC4 does not support resolution for nominal test point values.
24. If UTC offset for result time was 0 then the UTC time was not stored with the results when receiving from a device. This is now corrected.

Known issues:

1. If Site User Maintenance is enabled and the same MC6 is used on several sites then only the users from the last used site will be visible in MC6.
2. Long Before/Adjust/After Notes are not supported on all devices, they may work slowly, or have other issues. Fully supported devices are MC6 family calibrators and bMobile 2.0 application.
3. If existing CMX database contains duplicate calibrator/module definitions, because it was possible to create such with earlier CMX versions, then contact Beamex Professional Services to get help to find the duplicates and to solve the issue in the CMX database.
4. The rounding of Error Significance is not following the Beamex standard and is therefore differently rounded than in Beamex MC6 and bMobile 2.
5. Due to a problem in the Microsoft .NET Framework 4.6, included in the CMX release, information of SQL Server Instances found are not displayed correctly. Installing an updated version of the .NET Framework, e.g. .NET Framework 4.6.1, solves the problem. It is recommended to update the Microsoft .NET Framework bundled with the CMX release.
6. In CMX manual entry: When saving an Incomplete Switch calibration without any references and 'Calibrator reference required when saving calibration' is enabled, then the calibration will remain incomplete even if entering values for incomplete points after references are added.
7. When sending an instrument with a newly created User Defined Transfer Function to MC4 the sending may fail the first time, but when resending the same instrument, it will work.
8. Instruments downloaded to Pocket PC should not be uploaded to another CMX database, because communication uses unique procedure level code to join it to the instrument data. Reading instrument to another database having similar procedure level code might mismatch instrument 's procedure data.
9. When Windows 7 is used with High DPI displays then the scaling must be set to 100% (default value) for CMX to work properly.
10. Environment, Device, Modules and RJ temperatures for Results will always be converted to degrees Celsius even if another unit is used in the device.
11. Environment pressure will always be converted to kPa even if another unit is used in the device.

12. When viewing Weighing instrument calibration results in CMX, the results are arranged according to AsFound/AsLeft status. This means that the repeats are not shown in a chronological order, if an AsFound repeat is made after an AsLeft repeat while performing a Weighing Instrument calibration. This issue exists both with Manual Entry and when receiving results from a device.
13. If both, Decimal symbol and Digit grouping symbol are defined in Regional Settings, then the user must strictly follow the settings or else the entered value may be stored incorrectly. This may happen e.g. in Function or Procedure view, when entering numerical data and Decimal symbol is , (comma) and Digit grouping symbol is . (dot). If the user accidentally enters 1.5 instead of 1,5, the value will be stored as 15. If only Decimal symbol is defined in Regional settings, then the entered value will be validated before saving and only values with correct decimal symbol are then allowed. Workaround to avoid mistakes is to remove the setting for Digit grouping symbol in Regional settings. Note: When entering results in Manual Entry both dot and comma are interpreted as decimal symbols independently of the Regional settings.

Other Important Information:

1. This is the last CMX version that will communicate with CMX for Pocket PC. bMobile 2.0 will replace the Pocket PC application.
2. This is the last CMX version that will communicate with bMobile 1.0. bMobile 2.0 will replace the bMobile 1.0 application
3. This is the last CMX version that allows zero range instruments to be created.
4. This is the last CMX version that allows zero as error limit to be created.
5. This is the last CMX version that allows different input and output range for Weighing Instrument functions to be created.
6. This is the last CMX version that allows other transfer functions than linear for Weighing Instruments to be created.
7. This is the last CMX version that will be officially tested with Windows Server 2008 (R2) and SQL Server 2008 (R2), however CMX will most likely still work on these versions.
8. CMX now uses Away from Zero rounding, however a computers binary representation of floating point numbers are not always precise, e.g. the value seen as 0.575 on the screen is binary interpreted as 0.5749999999999929 in the computer's memory. Therefore CMX will prior to **final rounding** of calculated calibration point errors add 0.0000000001 (subtract for negative values) to force the value to always round

away from zero. The value 0.0000000001 is selected as a "safe" value between the Max Error Resolution of 6 decimals in CMX and the max resolution for a value of the data type double, a too small value near the max resolution for a double value will not have the right effect and rounding may go in the wrong direction. This method is also implemented for the rounding of Combined Error Limits.

9. If MC6 time zone is set differently to CWSI client time zone, the due date may still be re-calculated. To avoid this, make sure that the Calibrator and CWSI client are using the same time zone.
10. The database provider for SQL Server currently used in CMX does not support TLS 1.2.

- END OF 26TH RELEASE NOTE -

Product Beamex CMX	Version Version 2, Revision 2.11
Related Products Beamex CMX Professional, Version 2, Revision 2.11.114.0 Beamex CMX Professional FS, Version 2, Revision 2.11.124.0 Beamex CMX Enterprise, Version 2, Revision 2.11.124.0	Release date 4th December, 2017
Short description Beamex CMX 2.11	

25th Release Note

The following improvements have been included into Beamex® CMX Enterprise and Beamex® CMX Professional (FS):

New major features:

1. Support for Microsoft SQL Server 2016. (Requires Windows 8 or newer, Windows Server 2012 or newer)
2. 'Mobile Security Plus' is a new option in CMX, offering data integrity features covering following products:
 - CMX (requires 'Mobile Security Plus' -option)
 - MC6 family calibrators (requires firmware version 1.80 or newer and a separate option in the calibrator)
 - bMobile 2.0 - a new application which will replace CMX for Pocket PC (requires a separate communication option in CMX)
 - Business Bridge (v 1.3.0)

In this document, MC6 family calibrators (with firmware 1.80 or newer) and bMobile 2.0 are referred to as Mobile Devices when a feature is common for both devices.

Note! Other Beamex or 3rd party calibrators and CMX for Pocket PC do not support Mobile Security Plus features.

Mobile Security Plus -option in CMX provides following functionality:

- 2.1. Mobile Security Plus Option can be enabled from Tools/Options/General Settings.
- 2.2. CMX Users can be defined as Mobile Users and Mobile Supervisors in the CMX Users window. There is also a filter available to show only Mobile Users.

2.3. Mobile Users (and Mobile Supervisors) are required to define their own mobile passwords before being able to login to the Mobile Devices. For Mobile users, the CMX User ID and Mobile password can only contain characters that are available in MC6 (English keyboard). Validation of the allowed characters is controlled by CMX. Allowed characters are:

- Upper Case letters: QWERTYUIOPASDFGHJKLZXCVBNM
- Lower Case letters: qwertyuiopasdfghjklzxcvbnm
- Numbers: 1234567890
- Special characters: @'!"#\$%&()* ,./:;?[\]^_{}~+<=>

2.4. Mobile users can change their Mobile passwords from:

- Tools→Security→Change Mobile Password.
- During CMX login, if the password has expired or expiring soon.

Note! Only active CMX Users who have been defined as Mobile Users / Mobile Supervisors, with a valid Mobile Password are sent to a Mobile Device when communicating.

2.5. Mobile password settings (e.g. length and change interval) can be defined in Tools/Options/Mobile Security. These settings are validated when Mobile password is entered.

2.6. A new 'User ID selection' setting is added in the Mobile Security settings section that controls how User ID is entered in the Mobile Device:

- By typing
- By selecting the User ID from a list.

2.7. CMX prohibits overwriting of an instrument in the Mobile Device if it has results.

2.8. A setting 'Do not allow results to be deleted until all results are received for instrument' has been added into the Mobile Security settings section. When enabled, an instrument cannot be deleted from a Mobile Device during receive unless all results for that instrument are received to CMX.

2.9. A new 'Restrictions for undo and results deletion on mobile devices' setting is added into the Mobile Security settings section. The setting controls deleting/undo functionalities on a Mobile Device. The setting has three levels:

- None – no restrictions for deleting or undoing in the Mobile Device.
- Supervisor Password – Results and instruments with results can be deleted and calibration points can be undone by providing Mobile Supervisor credentials in a Mobile Device

- Blocked – Not possible to Undo a calibration point or delete Results and instruments with results from a Mobile Device

2.10. A new user group permission 'Manual Entry – Calibration time edit' is added. When a user does not have this permission, the Date/Time field in Manual Entry is disabled and cannot be edited. When Mobile Security is not in use, then calibration time edition is allowed by default for all users having Manual entry permission.

2.11. Communication can be limited to selected MC6 firmware versions and also to selected CWSI (Calibrator Web Service Interface) versions by using Mobile Security settings. It is also possible to reject communication to devices that do not support Mobile Security Plus functionality.

2.12. When Mobile Security Plus, Change Management and Electronic Signature are enabled in CMX database, Use Electronic Signature ID as Calibrated By ID is automatically disabled.

2.13. CMX can be configured to 'Deny approval of own Electronic Signature'. The setting can be enabled from Tools, Options, Change Management, when 'Mobile Security Plus' and 'Electronic Signature' settings are also enabled. When 'Deny approval of own Electronic Signature' is enabled, Users are not allowed to approve a record if the previous signature for the record was given by the same person. This can be seen in two different ways:

- Approved check box is disabled when signing
 - instrument adding
 - calibration event saving
 - position, device, function, procedure or result maintaining
 - position or device copying
 - position, device or function linking/unlinking
- If a user has set Approved check box while signing and last signature is made by the same user, CMX gives an error message that own signature is not allowed to be approved. This happens when
 - Signing via Sign button
 - Deleting a position, a device, a function, a procedure or a result.

2.14. Possibility to lock an approved calibration result. When a result is locked, it can not be edited or deleted and no electronic signature or approval can be entered. Locked and Approved calibrations are indicated in the tree views with individual icons. An approved calibration result can be locked via popup menu in tree views by right clicking an approved calibration item. Also, a result can be locked at the same time when approving the result, if CMX user has permission to lock a result. A locked calibration can be unlocked via popup menu in tree views by right clicking an

locked calibration item. Unlocked calibration can again be maintained normally. Locking and Unlocking are written in Audit Trail. There are separate user group permissions for locking and unlocking: 'Calibration – Lock' and 'Calibration – Unlock'.

3. Data Integrity features for all CMX users

3.1. A unique key for each database installation is created in the database. This key is used when communicating with MC6 family calibrators, in order to distinguish between instruments and users sent from different databases. bMobile 2.0 does not accept instruments from several databases at the same time. If a user logs into a certain CMX database, only results from that database can be received, except for Admin users who can see all results.

3.2. Result Indication Enhancements:

3.2.1. If a test point is skipped it is indicated in the results with "----". A skipped test point is interpreted as Passed. Skipped points also appear in the certificates.

3.2.2. If a test point has an abnormal status (e.g Overload), it is indicated in the results and certificates. Abnormal status can only be created or measured with an MC4 or MC6. An abnormal test point is interpreted as Failed.

3.2.3. New settings in the Calibration section in CMX options that affect manual entry calibrations as well as calibrations done using Mobile Devices:

- Require a Note for Skipped/Abnormal Points
- Deny Skipping of Calibration Points

3.2.4. The Calibration result is indicated as being incomplete, if it has less calibration points than what was specified in the Calibration procedure. The incomplete information is also available in the manual entry window real time when entering calibration data and also in the Certificates. A new 'Incomplete Calibration' -selection is added to the Result Filter. Incomplete calibration indication is available for conventional, switch and weighing instrument results.

3.2.5. If an Additional status (e.g. DO NOT ADJUST) is found, it is indicated with the results and certificates (e.g. PASSED, DO NOT ADJUST). This information is also shown in real time as the points are entered in the manual entry window.

3.2.6. The result summary view now also lists the 'Adjust If' and 'Do Not Adjust If' –limits.

- 3.2.7. There are separate fields for Calibration point Instructions (defined in procedure) and Point Notes. The instructions are shown also in Mobile Devices during calibration and any point specific comment given during calibration is included in the calibration results. Standard Calibration certificates do not show the notes.
- 3.2.8. MC6 family calibrator's date, time and daylight savings setting are updated to same as the time in PC which is used to connect to the calibrator. Note! UTC offset is not transferred and needs to be maintained in the calibrator.
- 3.2.9. The calibration time for each repeat in the manual entry window is the time stamp of the last edit (point value, note or reference) made for the repeat. The Calibration event time is taken from the newest (last) repeat. If the date&time needs to be manually entered, it must be done after that all tests points are entered. An update in any data field will update the date&time to the time of the update.
- 3.2.10. If only date (without timestamp) is entered for a calibration repeat it is also shown without timestamp in results and certificates. If any repeat of an event is without timestamp, all repeats are saved without timestamp.
- 3.2.11. A setting, 'Show UTC offset' has been added into General Section in Options. When enabled, the user interface, reports and certificates show all timestamps (stored with CMX 2.11 or newer) with UTC offset., except dates saved in date-only format. CMX 2.11 stores two versions of the time stamps: with and without the UTC offset. Customized reports and certificates can be manually updated with new variables, e.g. Calibration.Results.EVENTTIME_STRING to show UTC offset for calibration result time.
- 3.2.12. A setting 'Chronological Date/Time Validation' has been added into the Calibrator section in Options. When enabled, Each repeats date/time must be saved in rising order according to the order added in Manual Entry. All asFound repeats must be done before asLeft repeats in a calibration event. If one repeat is missing time stamp (only date is entered) then all repeats must be in the same format. If "save as both" is enabled and used then the asLeft repeat will have the same date/time as the asFound repeat.
- 3.2.13. CWSI Server/Client (versions 1.2) are compatible with CMX 2.11, MC6 fw 1.80 or newer and bMobile 2.0).
- 3.2.14. CMX warns the user if an older CWSI client is used when communicating with CMX
- 3.2.15. In addition to the User Name the User ID is now received from the calibrator and included in the certificate variables. The User ID is also shown in the calibration result in result view.

- 3.2.16. In Manual Entry, if a repeat is saved without entering any data into it, CMX saves all points as skipped. When saving, user is asked to confirm this. (Previously, repeats without data were removed from the results).

New minor features:

1. New Permissions:
 - 1.1. Permission to Add, Remove and View document links.
 - 1.2. Permission to allow importing and exporting document layouts.
 - 1.3. Permission to manually check in positions and devices. With this permission, a user can check in a Position or device that has been checked out by someone else (e.g. a local supervisor).
2. Text boxes on Position, Device, Function, Procedure and Result level have been improved:
 - 2.1. User is notified when text, longer than what is allowed, is pasted to a text field
 - 2.2. If the text is longer than what can be seen in the text box, it is indicated with three dots in the lower right corner of the text box. By double clicking the three dots, the full text is shown.
3. A list of all active CMX users is updated in the Mobile Devices, when communicating if Mobile Security Plus option is disabled.
4. Added POC8 Pressure controller compatibility to CMX.
5. 'bMobile Communication' option added. This option is required when communicating with the new bMobile 2.0 application.
6. The length of Before/Adjust/After Notes and Checklist Description have been increased from original 512-character limit. The new character limit is dependent on database system in use. For Oracle, the size limitation is 4000 bytes, which means 1000 to 4000 characters (ASCII chars: 1 byte, Scandic letters 2 bytes, Chinese letters or some mathematical symbols can take up to 4 bytes). For SQL server, the limitation is fixed 4000 characters. If instruments with too long note fields are to be imported to CMX (i.e. from CMX with SQL server -> calibrator -> CMX with Oracle), user will be prompted for note truncation during receive of instrument.
7. Patching of individual CMX files is now supported.

8. The function name is now shown in Receive and Confirm External References windows, making it easier to distinguish between functions in the same position/device.
9. CMX 2.11 is Windows 10 Compatible

Fixes:

1. CMX no longer allows users to define duplicate calibrators or modules (calibrators or modules having identical string combination according to manufacturer, model and serial number). This prevents mismatching references. If existing CMX database contains duplicate definitions, please contact Beamex Professional Services to get help to find the duplicates and to solve the issue in the CMX database.
2. Following instruments can no longer be sent to a calibrator or to a mobile device
 - Instrument input or output has zero range.
 - Instrument has zero error limit.
 - Weighing instrument input and output configuration is not identical.
 - Weighing instrument's transfer function is other than linear

These instruments can be calibrated in CMX 2.11 manual entry and with CMX for Pocket PC. In CMX 2.12 it will not be possible to create or calibrate such instruments at all.

3. Fixes to Audit Trail:

- CMX writes in Audit Trail current procedure level data changes made during calibration saving. Initial Calibration Date and recalculated Due Date field updates are now indicated in Audit Trail.
- When deleting a Position or a Device, Audit trail now also shows:
 - Deleted calibration results that were linked to the Position / Device
 - Removal from a Position/Device Set, if deleted Position or Device function was included in a set
 - Work order deletion, if a deleted Position has a pending Work order.
 - When deleting linked device, unlinking from position is written in Audit Trail.
- When a plant node is deleted, also underlying Positions and results are deleted and shown in Audit Trail
- When adding device to position, linking is written in Audit Trail.
- Now Position and Device linking / unlinking is shown in the Audit Trail when the Audit trail is opened from the Device view's electronic signature list.

- After several illegal login trials, all related AT rows contain now empty in User ID, User Name and User Title columns.

4. Permissions related fixes:

- User can no longer add electronic signatures with View -permission. Modify or Approve permission is required.
- It is no longer possible to enter Calibrator Manufacturers window and delete calibrator or module models if user does not have "Calibrator Manufacturer/Model Maintain" -permission.
- The Detect Calibrator function in the Calibrators window is now enabled only for users with "Calibrators – Add" permission.
- A user could previously activate/deactivate a Position or procedure by activating/de-activating a parent node, if he had permission to modify plant structure, but no permissions to modify Positions. This problem is now corrected.

5. Resolution / Rounding related fixes

- 5.1. Resolution for calculated result properties (e.g. Maximum Hysteresis, Average Span Error, Max Set Error etc.) are now taken from the Error resolution. When calculating the properties, rounded values are used in all calculations. NOTE: for Engineering Units, the actual Error Resolution may be lower than the Error Resolution defined in the procedure. For some of the calculated properties, the defined error unit may be unsuitable. On that case engineering units is used instead. The resolution for the calculated properties are stored as a separate field in the database.
- 5.2. For Weighing Instruments, it is now possible to define a separate resolution for each MPE limit.
- 5.3. When calculating average and standard deviation result properties for Switches, the best resolution of the values is used.
- 5.4. If a value is rounded to zero but the unrounded value is negative, then a minus sign is shown before the zero value, e.g. -0.00.
- 5.5. Environment properties are now stored with their resolution.
- 5.6. Certificates and Reports can now use formatted _STRING variables that shows the result and environment properties with the resolution stored in the database. Old result properties stay unchanged.

- 5.7. The default rounding of values is changed to “Away From Zero”. Previously CMX rounded the values “To Even”, also called Banker’s rounding. Note: Old results are not recalculated and old rounding methods are preserved for calibrations older than CMX 2.11.
- 5.8. The environmental information on calibration results is stored in CMX with the same resolution as the result in the calibrator.
6. Database conversion related corrections:
 - 6.1. CMX version 2.10 changed to restrict copying only 50 characters from DEVICE.UFTEXTx field to WORKORDERNUMBER field in CALPROCEDURE or CALPROCEDUREHISTORY table. This avoids database exception in case Beamex Business Bridge is defined to use device level work order number in some free field and that free field contains longer than 50 characters data in database.
 - 6.2. Database conversion problem when converting from CMX version 2.5 or older on newer database server than SQL Server 2005 has been corrected.
 - 6.3. Database permissions are now checked before database conversion A conversion cannot be started without required permissions on SQL Server. The database conversion also checks that the database has only one owner on SQL Server.
7. Corrected and improved existing filter indication in Filter-button. Now when no filter field is defined, the Filter-button is gray. CMX 2.10 indicated incorrectly highlighted Filter-button after Clear Field was pressed to remove filtering. Corrected also one older issue when filtering was just opened and Apply was immediately pressed without any entered filter field.
8. Known hard coded texts made translatable.
9. Switch result property title corrections
 - Set Point Std. Deviation → Set Error Std. Deviation
 - Reset Point Std. Deviation → Reset Error Std. Deviation
 - Report variable title changes
 - Results.SWSTDDEVOFAVERAGESETPOINT: Std. Deviation of Avg.Set
 - Results.SWSTDDEVOFAVERAGERESETPOINT: Std. Deviation of Avg.Reset
 - Results.SWSTDDEVSETPOINT: Set Error Std. Deviation
 - Results.SWSTDDEVRESETPOINT: Reset Error Std. Deviation
 - Switches.SETSTDDEVIATION: Std. Deviation of Set
 - Switches.RESETSTDDEVIATION: Std. Deviation of Reset
10. One Page Calibration Certificate.lst

- Hard coded "FAILED" and "PASSED" texts changed into Language_File.UNIVERSAL.grid_failed_text and Language_File.UNIVERSAL.grid_passed_text variables respectively.
 - In Oracle layout this text was totally missing. Added variables Language_File.UNIVERSAL.grid_failed_text, Language_File.UNIVERSAL.grid_passed_text
11. Maximum Error, Repeatability Accuracy Limit and Theoretical/Calculated Minimum Weight properties are now correctly printed on certificates for the Repeatability test when USP41 is enabled.
 12. When creating a certificate from average calibration, an error appears when plotting the average points, as they are not drawn in the right place along the x-axis. Average points are drawn at the wrong place at 0% and 100% and nothing in between, when input values from manual entry is below 1,0. When using small numbers as input values the problem seems to come from roundup problems for the graph, small values are drawn at 0%, larger values where drawn at 100%, i.e the position uses either 0 or 1 as drawing position in the x-axis.
 13. Receive window now prevents user to enable "Confirm external references" while using bMobile 1.0 client.
 14. Fixed installation program issue. C++ redistributable for Visual Studio 2015 was only installed if database option was selected in installation (or database was already installed). C++ redistributable is now always installed.
 15. Fixed problem with error graph scaling when communicating with MC6 and MC4. The error graph scaling setting is now independent from the Autoscale graph setting.
 16. Corrected switch instrument creation via wizard and User Defined instrument type selection: Error Limits Calculated From is now always saved from Input for switch instruments.
 17. The following fields were hidden in the instrument wizard: - As Found Count, - As Left Count, - Pre-enter previous values to Manual Entry, - Before, Adjust and After Notes, - Reject If Calibrator is Overdue, - Document links. In Switch Wizard the Error Calculation Method combo box was made visible.
 18. Corrected check list instrument procedure level data saving details. Some fields (e.g. ERRORRESOLUTION), which are not needed with check list contained some unstable data. Now they are saved as NULL in database.
 19. Device sensor serial number wasn't updated in the database, if the information was changed in the calibrator. This problem is now corrected.
 20. 'Interval mode setting changes'. When result is saved (or received from a calibrator)
 - Fixed: Due date is updated
 - None: Existing due date is cleared

- Empty: Existing due date will not be cleared
21. There is now an option in Module Model view for omitting uncertainty for that module when it is combined with another module in a measurement. This option is enabled for all barometric modules manufactured by Beamex, during database conversion.
 22. There are some CMX databases where device function contains incorrectly saved Input, Output or Supply entity. This caused an error when viewing device function. Correction is made to prevent this happening again in CMX: When adding function to CMX database via Add function, Wizard, Copy position/device or Link device to position, CMX validates Input, Output and Supply Entity saving. CMX database conversion also corrects invalid device functions so, that it inserts missing entity record according to the position function entities. The Conversion also cleans duplicate entity records from CMX database. Detailed entity conversion is written in CMXFunctionEntityCorrectionLog_<time>.txt log file located in User Application path.
 23. Improvements for user transfer function mathematics. A monotone function is generated also for some difficult data sets. MC6 versions 1.70 or later use the same new method. Calibrations made in MC4 or in MC6 versions older than 1.70 or by using CMX version 2.10 or older are still calculated by using the old method.
 24. If "Reject if calibrator is overdue" is enabled in the calibration procedure, calibration results containing overdue calibrators can no longer be received from CMX for PocketPC and bMobile 2.0.
 25. Object check added in Manual entry reference selection to avoid CMX crash when multiple references are used.
 26. Corrected an issue where linking Checklists imported by Beamex Business Bridge failed.
 27. User defined transfer function points defined for a function. When editing points so, that last points are cleared and only first point is left, saving function now shows invalid user defined point message and does not allow function saving.
 28. Corrected an issue in CMX when used together with CWSI and MC6 across several time zones. When communicating with a calibrator over CWSI, it could cause the due date, work order start/end date or received calibration result date/time to change between 15 minutes to a maximum of one day depending on the time zone difference between CWSI client and CMX.
 29. Removed Work order status from communication with Mobile Devices. The Work Order status changes are done by Business Bridge or by a user in CMX.
 30. The maximum specification range for the frequency unit cph is now limited to 99 999 999 for MC6.

Known issues:

1. If Site User Maintenance is enabled and the same MC6 is used on several sites then only the users from the last used site will be visible in MC6.
2. Long Before/Adjust/After Notes are not supported on all devices, they may work slowly, or have other issues. Fully supported devices are MC6 family calibrators and bMobile 2.0 application.
3. If existing CMX database contains duplicate calibrator/module definitions, because it was possible to create such with earlier CMX versions, then contact Beamex Professional Services to get help to find the duplicates and to solve the issue in the CMX database.
4. The rounding of Error Significance is not following the Beamex standard and is therefore differently rounded than in Beamex MC6.
5. Due to a problem in the Microsoft .NET Framework 4.6, included in the CMX release, information of SQL Server Instances found are not displayed correctly. Installing an updated version of the .NET Framework, e.g. .NET Framework 4.6.1, solves the problem. It is recommended to update the Microsoft .NET Framework bundled with the CMX release.
6. In CMX manual entry: When saving an Incomplete Switch calibration without any references and 'Calibrator reference required when saving calibration' is enabled, then the calibration will remain incomplete even if entering values for incomplete points after references are added.

Other Important Information:

1. This is the last CMX version that will communicate with CMX for Pocket PC. bMobile 2.0 will replace the Pocket PC application.
2. This is the last CMX version that will communicate with bMobile 1.0. bMobile 2.0 will replace the bMobile 1.0 application
3. This is the last CMX version that allows zero range instruments to be created.
4. This is the last CMX version that allows zero as error limit to be created.
5. This is the last CMX version that allows different input and output range for Weighing Instrument functions to be created.

6. This is the last CMX version that allows other transfer functions than linear for Weighing Instruments to be created.
7. This is the last CMX version that will be officially tested with Windows Server 2008 (R2) and SQL Server 2008 (R2), however CMX will most likely still work on these versions.
8. CMX now uses Away from Zero rounding, however a computers binary representation of floating point numbers are not always precise, e.g. the value seen as 0.575 on the screen is binary interpreted as 0.574999999999999929 in the computer's memory. Therefore CMX will prior to **final rounding** of calculated calibration point errors add 0.0000000001 (subtract for negative values) to force the value to always round away from zero. The value 0.0000000001 is selected as a "safe" value between the Max Error Resolution of 6 decimals in CMX and the max resolution for a value of the data type double, a too small value near the max resolution for a double value will not have the right effect and rounding may go in the wrong direction. This method is also implemented for the rounding of Combined Error Limits.
9. There will be an update available soon that enables MC6-Ex communication with CMX 2.11
10. If MC6 time zone is set differently to CWSI client time zone, the due date may still be re-calculated. To avoid this, make sure that the Calibrator and CWSI client are using the same time zone.

- END OF 25TH RELEASE NOTE -

Product Beamex CMX	Version Version 2, Revision 2.10.3
Related Products Beamex CMX Professional FS, Version 2, Revision 2.10.324.0 Beamex CMX Enterprise, Version 2, Revision 2.10.324.0	Release date 13th December, 2017
Short description Beamex CMX 2.10.3	

24rd Release Note

The following improvements have been included into Beamex® CMX Enterprise and Beamex® CMX Professional FS:

Fixes:

1. If Audit Trail was enabled when converting database with CMX 2.10.2 then the database conversion failed.
2. With CMX 2.10.2 Audit Trail did write the same row twice, this is now corrected.

Known issues:

1. Due to changes in UTC handling results cannot be received from MC4/FCINTF calibrators together with CWSI. Without CWSI the communication works correctly.
2. If MC6 time zone is set differently to CWSI client time zone, the due date may still be re-calculated. To avoid this, make sure that the Calibrator and CWSI client are using the same time zone.
3. Due to limitations in MC4 any instrument in CMX having the quantity Value with a known SI-unit defined when sent to MC4 will be updated to have the corresponding SI quantity when the instrument is received back to CMX, e.g. an instrument with the quantity Value and unit bar will be updated to the quantity Pressure when received to CMX.
4. UTC offset is not supported with bMobile 1.0
5. Due to a problem in the Microsoft .NET Framework 4.6, included in the CMX release, information of SQL Server Instances found are not displayed correctly. Installing an updated version of the .NET Framework, e.g. .NET Framework 4.6.1, solves the problem. It is recommended to update the Microsoft .NET Framework bundled with the CMX release.
6. Due to a rounding issue some of the extra properties calculated for results may not always be correct, e.g. the Hysteresis may not be correct when less than 3 decimals are used for the calculated error, this is due to that different resolution is used in the Hysteresis calculation and in the calculated test point error, the Hysteresis value may differ both up and down from the real value. This issue does not affect Passed/Failed status.
Example:
AsFound Hysteresis should be -0.6 (but is shown as -0.625)
AsLeft Hysteresis should be -0.2 (but is shown as -0.125)

Other Important Information:

NA

- END OF 24TH RELEASE NOTE -

Product Beamex CMX	Version Version 2, Revision 2.10.2
Related Products Beamex CMX Professional FS, Version 2, Revision 2.10.224.0 Beamex CMX Enterprise, Version 2, Revision 2.10.224.0	Release date 25th October, 2017
Short description Beamex CMX 2.10.2	

23rd Release Note

The following improvements have been included into Beamex® CMX Enterprise and Beamex® CMX Professional FS:

New minor features:

1. A new option "Show UTC offset" has been added to General options. If enabled, the user interface will show all time stamps with UTC offset. Reports and certificates can manually be updated with new variables, e.g. Calibration.Results.EVENTTIME_STRING to show UTC offset for calibration result time. Note: Result time stamps saved in older CMX versions than 2.7.2 do not include UTC offset. All time stamps will include UTC offset when stored by CMX 2.10.2 or newer.
2. If "Interval mode" in procedure is empty then the due date will not be cleared when saving results.

Fixes:

3. Corrected an issue in CMX when used together with CWSI and MC6 across several time zones. When communicating with a calibrator over CWSI, it could cause the due date, work order start/end date or received calibration result date/time to change between 15 minutes to a maximum of one day depending on the time zone difference between CWSI client and CMX.

Known issues:

7. Due to changes in UTC handling results cannot be received from MC4/FCINTF calibrators together with CWSI. Without CWSI the communication works correctly.
8. If MC6 time zone is set differently to CWSI client time zone, the due date may still be re-calculated. To avoid this, make sure that the Calibrator and CWSI client are using the same time zone.
9. Due to limitations in MC4 any instrument in CMX having the quantity Value with a known SI-unit defined when sent to MC4 will be updated to have the corresponding SI quantity when the instrument is received back to CMX, e.g. an instrument with the quantity Value and unit bar will be updated to the quantity Pressure when received to CMX.

10. UTC offset is not supported with bMobile 1.0
11. Due to a problem in the Microsoft .NET Framework 4.6, included in the CMX release, information of SQL Server Instances found are not displayed correctly. Installing an updated version of the .NET Framework, e.g. .NET Framework 4.6.1, solves the problem. It is recommended to update the Microsoft .NET Framework bundled with the CMX release.
12. Due to a rounding issue some of the extra properties calculated for results may not always be correct, e.g. the Hysteresis may not be correct when less than 3 decimals are used for the calculated error, this is due to that different resolution is used in the Hysteresis calculation and in the calculated test point error, the Hysteresis value may differ both up and down from the real value. This issue does not affect Passed/Failed status.

Example:

AsFound Hysteresis should be -0.6 (but is shown as -0.625)

AsLeft Hysteresis should be -0.2 (but is shown as -0.125)

Other Important Information:

NA

- END OF 23RD RELEASE NOTE -

Product Beamex CMX	Version Version 2, Revision 2.10
Related Products Beamex CMX Professional, Version 2, Revision 2.10.114.0 Beamex CMX Professional FS, Version 2, Revision 2.10.124.0 Beamex CMX Enterprise, Version 2, Revision 2.10.124.0	Release date 27th May, 2016
Short description Beamex CMX 2.10	

22nd Release Note

The following improvements have been included into Beamex® CMX Enterprise and Beamex® CMX Professional (FS):

New major features:

- Enhanced Work Order handling option (requires also Business Bridge Version 1, Revision 1.2.0). The new feature provides following additional functionality:
 - When Enhanced Work Order handling setting is enabled in CMX options, an additional tab is visible next to Position and Plant Structure tabs in CMX main window, which allows the users to view instruments from a Work Order perspective. The tab shows a list of the Work Order numbers from calibration procedures having an open Work Order State. The Work Order fields are shown on calibration procedure view.
 - "Work Order State change is allowed when calibration is" -setting (Saved or Approved) visible in CMX options. This setting can be configured only in Beamex Business Bridge (B3).
 - A new setting in CMX Options to allow automatic update of Work Order state. When enabled, the Work Order state is automatically changed from Open to Done when the calibration is saved or approved and Work Order is automatically completed. If disabled, the Work Order can be completed manually from the context menu appearing when right clicking a procedure node in CMX left tree view.
 - An open Work Order can be canceled from the context menu appearing when right clicking a procedure node in CMX left tree view.
 - Work Order fields (Number, Status, Start Date and End Date) are searchable in CMX Position/Device Filter Conditions if the option is enabled.
 - Integrated Calibration Solutions (ICS): The enhanced Work Order handling is supported by MC6 Documenting Calibrator, CMX for Pocket PC and bMobile tablet application, allowing the user to view

the instruments from a Work Order perspective on the device, when the Work Order number is assigned to a procedure.

- Added new Work Order related Report and Certificate variables.
- Database conversion:
 - New fields added to database to save Work Order data on procedure level: Added fields: Work Order Number, Work Order Status, Work Order Start Date and Work Order End Date.
 - Work Order field from existing position is copied to Work Order number field for underlying active procedures and for their linked device procedures.
 - Free device Work Orders: If database has been used with B3 and it contains definition to keep Work Order data on certain free field on device level, Work Order field from existing device is copied to Work Order number field for underlying active procedures.
 - If database has been used with B3 and contains Work Orders in Open State, this state is copied on corresponding active procedures. 'Not Available' status is saved as default value for other procedures.
 - New permissions added: 'Work Order – Cancel' and 'Work Order – Complete'.

2. Maintenance Inspection – option. Maintenance Inspection allows you to run check procedures either according to IEC 60079-17 standard or by creating custom check procedures. The checks and check procedure definitions are saved in CMX's database. When checks are scheduled to be done, the checks are sent to a compatible tablet with Beamex bMobile software. After the checks have been performed, the results are returned to CMX.

- The tablet's requirements are:
 - Android tablet, operating system version 4.4 (Kit-Kat), or later.
 - Recommended screen resolution: 1280 x 720 or higher.
 - Recommended screen size: 8 inch or higher.
 - USB port, for communication with CMX.
- New Inspection summary Report layout added for Maintenance Inspections.
- New Report and Certificate variables added for Maintenance Inspections.

Note: When printing Checklist certificates there is only one table per page supported.

New minor features:

1. Windows Authentication mode is now supported in CMX Database Connection in an MSSQL Server environment. More information about SQL Server authentication modes can be found here: [https://msdn.microsoft.com/en-us/library/ms144284\(v=sql.120\).aspx](https://msdn.microsoft.com/en-us/library/ms144284(v=sql.120).aspx)

Fixes:

1. CMX shows wrong passed/failed status when USP41 is enabled and the Repeatability test have a negative error that is outside of the error limit, test is indicated as passed even if error is outside of the limit. Note: Positive errors works correctly.
2. PASSED/FAILED status as stored in database was not used when a repeat was loaded in CMX. Instead PASSED/FAILED status was evaluated at runtime which could lead to incorrect status in some rare cases. PASSED/FAILED value as stored in database is now used when result was loaded in CMX.
3. If an extra uncompleted test point was added to the Minimum Weight Test or to the Repeatability Test when USP41 is enabled then the Popup message showed invalid Passed/Failed status, e.g. the Popup message showed Failed even if the actual result was Passed. Note: Correct Passed/Failed status is saved to the database.
4. Audit Trail was previously not updated if the resolution of a test point was changed.
5. If the settings for a Weighing Instrument Function was edited so that it affected the MPE limit and range of the Procedure, then the Procedure changes were not written to the Audit Trail.
6. Certain calibration point calculation did not show calibration point resolution correctly. The reason was in low level zero value comparison. This is now corrected and CMX shows calibration point resolutions as entered by user. Also significant number definition was corrected to avoid CMX not responding (infinite loop). Same solution also corrected an issue, which crashed Pocket PC weighing calibration containing certain range and points.
7. The Manual Entry Form report is now working correctly even if a page break is triggered due to a long list of test points. Also selected item order prints pages correctly.
8. The CMX Server Service Manager info window can now show IPV6 addresses. In previous versions the field was too short.
9. Thread handling in Send Window caused slow response in communication. Thread handling is now improved.
10. CMX Splash screen visible name was "frmSplash". This is now changed to "CMX – Splash Screen"
11. It is now possible to receive instruments from MC6/MC4 where a reserved SI Unit is used with instruments having a Keyed Custom Quantity, e.g. Kg.
12. Error calculation/nominal point calculation for other transfer functions than linear and where a point was below range 0% -point was incorrect. To find out if your database contains incorrect calibration results, please contact: support@beamex.com
13. Older results in MC6 that are not combined with the latest results can now be received. The number of repeats belonging to a calibration event is also corrected for both MC6 and MC4, a new calibration event happens when results are not combined with the previous results.
14. Input or output value of test point being outside of max deviation range were not indicated with red color, if the sign of the value was changed from negative to positive or vice versa and resulting value was outside of the max deviation range. Change of sign is now handled correctly.
15. If a Device with several functions is linked to a Position with similar functions but the functions are not created in the same chronological order: The unique Channel number may change for the Device Function and when receiving results from a calibrator or Pocket PC the changed Channel number may cause the result to be linked to the wrong function.
16. Calibration results are now removed immediately from database when related position or function is removed.
17. Added _ALLUSED_ variable list for Reports and History Trend.
Note: In the database there is a setting (REPORTSETTING.SHOWALLREFERENCEDATES) for how similar

dates are handled for the _ALLUSED_ variables, please contact Beamex Professional Services if you need to alter this setting.

18. The Reverse Traceability Report is updated to use the _ALLUSED_ variables so that all used Calibrators are printed on the report and not only the first one. Also when external modules are used the calibrator is now printed.
19. CMX assemblies and executables are now digitally signed using an SHA-256 algorithm as a result of the Windows enforcement of Authenticode code signing and timestamping (<http://social.technet.microsoft.com/wiki/contents/articles/32288.windows-enforcement-of-authenticode-code-signing-and-timestamping.aspx>).

Known issues:

1. Due to limitations in MC4 any instrument in CMX having the quantity Value with a known SI-unit defined when sent to MC4 will be updated to have the corresponding SI quantity when the instrument is received back to CMX, e.g. an instrument with the quantity Value and unit bar will be updated to the quantity Pressure when received to CMX.
2. Due to a problem in the Microsoft .NET Framework 4.6, included in the CMX release, information of SQL Server Instances found are not displayed correctly. Installing an updated version of the .NET Framework, e.g. .NET Framework 4.6.1, solves the problem. It is recommended to update the Microsoft .NET Framework bundled with the CMX release.
3. Due to a rounding issue some of the extra properties calculated for results may not always be correct, e.g. the Hysteresis may not be correct when less than 3 decimals are used for the calculated error, this is due to that different resolution is used in the Hysteresis calculation and in the calculated test point error, the Hysteresis value may differ both up and down from the real value. This issue does not affect Passed/Failed status.

Example:

AsFound Hysteresis should be -0.6 (but is shown as -0.625)

AsLeft Hysteresis should be -0.2 (but is shown as -0.125)

Other Important Information:

1. Old Beamex TC and PC series calibrator communication (e.g. TC305 and PC106) no longer officially supported. The functionality is still available but not tested in official tests.

- END OF 22ND RELEASE NOTE -

Product Beamex CMX	Version Version 2, Revision 2.9
Related Products Beamex CMX Enterprise and Beamex CMX Professional (FS):	Release date 12th June, 2015
Short description Beamex CMX 2.9	

21st Release Note

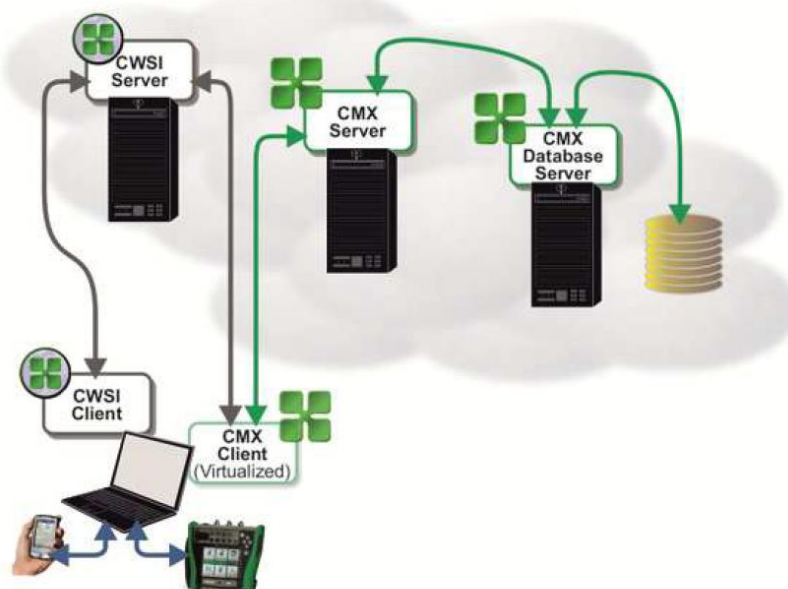
The following improvements have been included into Beamex® CMX Enterprise and Beamex® CMX Professional (FS):

New major features

A new technology for the calibrator communication is introduced.

The new “Calibration Web Service Interface” (CWSI) driver introduces the possibility to communicate with supported calibrators over Wide Area Networks. This ensures faster and more reliable communication in networks with high latency. Also, no third party solutions are needed anymore for the USB communication.

CWSI introduces two new components: the CWSI Client, which is locally installed on every computer that is physically connected to a calibrator and the CWSI Server, which is a common gateway for all CWSI Clients. In addition to this, CWSI support is implemented into the CMX Client, which enables CMX to communicate with calibrators connected to CWSI clients via the familiar Send/Receive window.



New minor features:

1. Windows 8 certified.
2. Support for Microsoft SQL Server 2014.
3. New List&Label version 20 integrated in CMX. All report layouts are converted to be List&Label 20 compatible and they are taken in use in CMX database conversion. It solves Turkish character set problems.
4. Manual entry is now opened like it was closed during previous Manual entry session. Form size, tree separator, column widths and graph separator are saved. Separate settings used for conventional, switch and weighing instrument types. To reset back to defaults, the Location_frmManualEntry.xml file should be removed under CMX's User Application path.
5. MC6 (workstation) calibrator compatible P250 and P600 pressure modules and their specs added in database during conversion.

Fixes:

1. Accessibility is inherited from plant structure if position and/or device is created/moved when receiving from calibrator which supports plant structure.
2. One Page Certificate printing where second table contains more points than what fits on first page is now corrected. For this correction to fully work the first One Page Certificate table must be named "TableASF". Beamex default reports have been updated.
3. If some instrument in MC6 had many results (repeats) but one of the middle repeats were deleted, then it was not possible to receive any instruments from the calibrator. With MC6 firmware version 1.50 or higher this situation is not created anymore.
4. If invalid User Defined Sensor parameters are saved in CMX database when receiving from calibrator or Pocket PC, then it was not possible to open sensor edit window in CMX. Now sensor edit window opens with empty values for invalid parameters and it is possible to enter valid values with CMX. Sensor value validation is done only in CMX sensor edit window, not when receiving user defined sensor from calibrator/Pocket PC.
5. Audit Trail rows corrected when user defined sensor type has been changed to another user defined sensor type in the calibrator or CMX for Pocket PC. Audit Trail indicated wrongly that user defined sensor parameter were modified. They are not modified and should not be written in Audit Trail. This is now corrected. Also similar correction and some improvements were made for External Sensor type, when instrument has TC sensor type with External RJ mode. Requires Change Management option.
6. It was not possible to open Manual Entry for a function that had "Pre-enter previous values to Manual Entry" set on in Calibration Procedure and the reference(s) used in previous calibration was deleted or marked as inactive. Now reference pre-selection is empty in Manual Entry, if a reference used in previous calibration is deleted or marked inactive. Only the calibration points are pre-entered in this case.
7. Error handling improved in communication driver when using user sensors not supported by CMX in MC6 (ITS-90 and factor sensors). If the calibrator contained any of these sensors then it was not possible to send/receive instruments with supported CVD sensors from CMX to MC6, an unhandled "index out of range" exception was thrown.
8. CMX Professional FS and Enterprise: Users was sometimes automatically logged out even when working with CMX, when Auto logoff function was on. Now a user is not logged out when Manual Entry window is open or having a window open in edit mode.
9. An unexpected error occurred when changing database or switching user of the same database with Manual Entry window open.
10. Null reference exception when sending temperature indicator to Fluke 744 calibrator through Field Calibrator Interface (FCINTF) corrected. Requires Fluke option.
11. Save as both in MC6 showed 2 As Left and 1 As Found repeats in CMX receive from calibrator window.

12. It should not be possible to send instruments with combined error limits from CMX to calibrators through Field Calibrator Interface (FCINTF), they are not supported in the protocol. Requires option for a third party calibrator.
13. Improved apostrophe (') character support: CMX fields can now contain apostrophe (') character. Filtering and maintaining does not cause run time error anymore.
14. Corrected uncertainty calculation when more than one calibrator is used and used module is external module, which is compatible with the used calibrators. It's uncertainty is now used only once when calculating uncertainty of the point, not any more collected separately for each compatible calibrator.
15. Different repeat type's data affects for output uncertainty of weighing instrument calibration. If user was not selecting each repeat separately after making changes for readings, the uncertainty was not always containing all components correctly. This is now corrected so, that before saving weighing instrument calibration in manual entry, all repeats are refreshed. This makes sure every repeat's data is used in uncertainty calculation.
16. It was not possible to receive results from MC5 when calibration was done with pressure controller or temperature block and Method set to Controlled and Measured and Acceptance was set to automatic.
17. Position and Device linking and unlinking is now listed in Audit Trail when opening Audit Trail from Electronic signature table in Position or Device view. Requires Change Management option.
18. EXT B module was not listed as reference in calibration result when calibration was done with MC6.
19. Calibration.Results.SCALEWEIGHTSETSALLUSEDTRACEDOC, Calibration.Results.IMOD_ALLUSED_TRACEDOC and other similar ALLUSED variables now shows the item only once by default in reports.
20. CMX reports prints now also inactive procedure data, if no active procedure exists for a function. If function contains several procedures, the first created procedure data is printed. If no procedure exists, empty value is printed for procedure fields.
21. The separator character (;) is not anymore printed at the end of nominal point list.
22. No Null exception occurs in certificate printing, if current function contains no procedure.
23. Special variable handling improved. E.g. variables that include Null values and empty strings.
24. USP 41 Repeatability test point validation corrected to follow these defined rules: The repeatability test contains at least 10 similar test points between 5% and 100% of the balance capacity. Point similarity check added and balance 0% range can now also be not equal to zero. Requires Weighing Instrument support option.
25. Weighing instrument MPE value printing corrected in certificate layouts. When more than five ranges exist, wrong field names was used. Requires Weighing Instrument support option.
26. "Reject if Calibrator/Module is overdue" checking is corrected. Calibrator and module overdue check is now done with the due date value saved in the database instead of a run time calculated due date.
27. Error resolution value reversion implemented in CMX 2.9 database conversion (database version 1.28).

CMX 2.7 (database version 1.24) conversion did not correctly convert error resolution values. Maximum input or output point resolution should be used for error resolution, but the code was not handling the case correctly when input and output resolution are equal. In this case error resolution was hardcoded to 2. This dropped error value resolution in cases where resolution was 3 or more. It also converted wrongly procedure level error resolution for weighing instruments. Database might contain 2147483647 in SCALEREJECTIFERRORRESOLUTION field. It caused run time error in CMX.

The correction is done depending on the database version from where the conversion starts.

If database to be converted is already converted with CMX 2.7 or newer (dbversion 1.24 or higher) conversion is done as follows:

- Error resolution values are reconverted for conventional instrument's and weighing instrument's calibration result points.
- Switch calibration points are not reconverted, because their original conversion was correct.
- Conventional instrument's Calibration procedure history error resolution values are reconverted by using maximum error resolution value from the calibration.
- Above items are done only for those calibrations saved with older than 1.24 database version. Calibrations made with CMX 2.7 or 2.8 are not converted.

- Current procedure error resolution values are not reconverted, because they might have been updated by user with newer CMX.
- Weighing instruments: MPE resolution is redefined with same algorithm as in CMX UI according to MPE error values for current and calibration history procedures.

If database to be converted is not yet converted with CMX 2.7 (database version 1.24) conversion is done as follows:

- Error resolution values are converted for all instrument's calibration result points.
 - Calibration history procedure's error resolution values are converted by using maximum error resolution value from the calibration.
 - Current procedure error resolution values are converted for conventional instruments and switches by using maximum error resolution value from the latest calibration.
 - Weighing instruments: MPE resolution is redefined with same algorithm as in CMX UI according to MPE error values for current and calibration history procedures.
28. CMX Professional FS and Enterprise: Description edited during Report Layout Import is now saved also to CMX server, so it is in use for other CMX clients at next start.
 29. "Bit noise" on some parameters for User Defined Temperature Sensors (CVD sensors) caused duplicate sensors to be created in the calibrator when sending the same instrument several times to the same calibrator.
 30. CMX Professional FS and Enterprise. CMX Client could not connect to CMX Server if IP-address was specified instead of a hostname. There are however still some issues when using multiple network interfaces or workgroups, see Known Issues below.
 31. With small error limit settings the graph were printed incorrectly on certificates.
 32. With some languages (e.g. Italian) the Manual Entry form with too long field names triggered extra page break.
 33. Handling of calibration set points is improved in calibrator drivers (MC6/MC4).
 34. Error message is shown if instruments with Asymmetric error limits are received from MC6, Asymmetric error limits are not supported in CMX.

Known issues:

1. In some rare occasions when CMX Server is running on **a)** a machine with multiple network interfaces or **b)** a machine which belongs to a workgroup, CMX Server may return an invalid URL to the CMX Client. Current workaround is to **a)** disable "Use IP Address" on CMX Server and add a DNS record for the machine running CMX Server or **b)** enable "Use IP Address" on CMX Server if the machine only have one network interface.
2. Expanded Uncertainty has sometimes an error for downscale points. CMX uses the standard deviation of upscale points for corresponding downscale points although standard deviation of downscale points is calculated/shown among average results.
3. If "Calibrated by" (Calibration) is used together with other field in the Filter function it works like an OR function instead of the AND function that is normal when fields are used combined in the Filter function.
WORKAROUND: to use it like a AND function: Use the SQL Editor in the Filter function to add parenthesis around the "Calibrated by" part (see the following example, additional parenthesis marked in red): "WHERE POSITION.POSCODE <> 0 AND CALREPEATISTORY.CODE IN (SELECT CALREPEATISTORY.CODE FROM CALREPEATISTORY WHERE CALREPEATISTORY.REPEATTIME >= CONVERT(DATETIME,'05-11-2006', 102) AND CALREPEATISTORY.REPEATTIME <= CONVERT(DATETIME,'06-29-2006', 102) AND (CALREPEATISTORY.MADEBY LIKE N'Joshua Jones%'\ OR CALREPEATISTORY.MADEBY2 LIKE N'Joshua Jones%'\))"
4. Note that in CMX, MC6's Reference Junction specification is valid for its specified temperature range only. Temperature Coefficient value for MC6's Reference Junction specification is not available.

5. For positions created with old CMX versions or with old MC5 firmware versions and sent to MC6 it was not always possible to receive the calibration result from MC6. If this issue occurs for a position with multiple functions, please contact Beamex Helpdesk (support@beamex.com) for more information on how to fix this.
6. Fluke FCINTF driver does not support switches whose input quantity is current.

Other Important Information:

1. Beamex CMX 2.9 does not support for Microsoft Windows XP and Windows server 2003.
2. Most likely the support for old Beamex TC and PC series calibrator communication (e.g. TC305 and PC106) will cease from next release of Beamex CMX.

- END OF 21ST RELEASE NOTE –

20th Release Note

Release date: 18th June 2014

Version 2, Revision 2.8

The following improvements have been included into Beamex® CMX Enterprise and Beamex® CMX Professional (FS):

Major Improvements:

1. Windows 8 support.
2. Windows Server 2012 support.
3. SQL Server 2012 Support. SQL Server 2012 Express is the default database server for new installations (for operating systems newer than Windows XP. SQL Server 2005 Express is the default database server for Windows XP).
4. Warn/deny usage of overdue calibrators (calibration references).
5. Possibility to calibrate more than one instrument at the same time in CMX for Pocket PC (Group Calibration). Requires CMX for Pocket PC option.
6. FCINTF protocol support. Improved support for Fluke and Honeywell calibrators. Requires Fluke option.

Minor Improvements:

1. Now it is possible copy an existing calibrator (calibration reference) in Calibrator Window.
2. Calibrators and modules maintain permission has been replaced with separate permissions for create, delete, modify and view.
3. Support for changes in US Pharmacopeia 41 & 1251 Weighing on Analytical Balances. Requires Weighing Instrument support option.
4. If "MPE in service" is selected then both error limits are shown in the graph. Requires Weighing Instrument support option.
5. Added possibility to use variables from both result repeats on One Page certificates. Some of the variables like "Calibration Note" have been added to the default layout. To take other variables in use requires Report design option.

6. MC5 communication improved in virtual environments so that user is informed if the MC5 driver is already in use, thus allowing previous communication to continue uninterrupted for other user.
7. Communication speed improved for MC6 and MC4 in networks with long response time.
8. During upgrade CMX now asks if new versions of default report templates are to be automatically updated.
9. When Audit Trail asks for reason of change and user does not have "Audit Trail Description maintain"-rights, the Audit Trail Description field can be selected from the existing list. Entering own description is possible but not to save as default description.
10. Usability of CMX Database Manager improved.
11. Support of Microsoft SQL Server 2008 and 2012 added to CMX Database Manager.
12. It is now possible to move CMX database between different SQL servers on the same computer with CMX Database Manager.
13. It is now possible to make backups directly to a network drive or to the desktop with CMX Database Manager.
14. When printing calibration certificates when several reference standards have been used and each reference standard has the same due date, the due date is printed only once. Now there has been added a setting at CMX database level to make it possible to show all dates even if they are the same. Please contact Beamex Helpdesk (support@beamex.com) for more information on how to enable this setting.
15. New selection in Options/Calibration: Calibrator sort order in Manual Entry: selections: by serial number or by model. This setting works also for CMX for Pocket PC.
16. Reference selection in CMX for Pocket PC is improved. Requires CMX for Pocket PC option.
17. View scaling improved in CMX for Pocket PC when virtual keyboards are in use. Requires CMX for Pocket PC option.
18. A warning message is now displayed in calibration procedure, calibrator and module view if calibration interval is shorter than the Due within period setting in Options.
19. When creating a new calibrator module model it is now required to select a value for the Module Type field.
20. Default values for the default switch template changed so that they work as is with all Beamex MC Calibrators.
21. User defined Sensors, User Defined Pressure Units, Plant Paths, Free Fields, and User Names can now contain the following special characters /, ", *, :, <, >, ?, \, | for MC6 and MC4.
22. Beamex POC6 100 bar model specifications added.
23. Fluke 753/754 specifications added.

Major Fixes:

1. When "Output Points" and "Fixed Points" in Calibration Procedure was selected additional decimals were added to set points when sending to CMX for Pocket PC. Input values are now truncated in CMX for Pocket PC. Requires CMX for Pocket PC option.
2. When instrument range was not starting from zero and custom calibration points are specified in the Calibration Procedure the calibration points were incorrect in the MC6. Corrections done in both CMX and MC6. Note that to get this to work correctly MC6 firmware version 1.20 or higher is required.

3. CMX for Pocket PC did crash when the device run out of memory. Corrected so that it does not crash anymore. Requires CMX for Pocket PC option.
4. MC5 does not support error limit resolution in the same way as CMX and in some rare cases the Pass/Fail indication was different. E.g. error limit set to 1.00 in MC5 then when the calibration result was received into CMX the error resolution in CMX was set to 1 with resolution of 1 (rounding to 1, no decimals). Now CMX is converting error limit and its resolution properly and thus judging pass/fail the same way as the MC5.

Minor Fixes:

1. For positions created with old CMX versions or with old MC5 firmware versions and sent to MC6 it was not always possible to receive the calibration result from MC6. This is now fixed during conversion of the database for positions with single functions. If this issue occurs for a position with multiple functions, please contact Beamex Helpdesk (support@beamex.com) for more information on how to fix this.
2. When entering IS NULL in one of the following fields in Filters->Calibration procedure: "Adjust If Error >", "Don't Adjust If Error <" or "Adjust To Error <" the following Unexpected error occurs: "Input string was not in a correct format". Now it is possible to filter by using IS NULL.
3. Wrong information was saved to the CMX database field SAVESOURCECODE when calibration result was received from MC4 or MC6. This field can be used in custom report layouts. Requires Report Design option.
4. Setting "Due Date Calculation" as empty showed a redundant error message when trying to set a date for "Initial Calibration Date" in Filters and Calibration Procedure.
5. Temperature instruments with method "Controlled and Measured" created in MC6 could not be received to CMX, Error message "Object reference not set to an object" was shown.
6. The plant path was not always sent correctly to MC6, MC4 and Pocket PC.
7. Report layout name could not include special character "#". This has been corrected.
8. In some cases the CMX database could not be opened after conversion from an older version, if SQL server is set as Case Sensitive.
9. When instrument was imported via Business Bridge, the test point resolution for zero could be very high (a lot of decimals).
10. When saving files to CMX database, an extra byte was added to the end of it and therefore the files could not be always opened.
11. The resolution of the measurement uncertainty with Weighing Scale calibration was different in CMX and in CMX for Pocket PC. Corrected in CMX and Pocket PC to have same resolution. Requires CMX for Pocket PC option.
12. In MC4 or MC6, if a reference sensor was given a name that already exists as a module name for other reference in CMX, the instrument could not be received to CMX.
13. It was possible to name a report with a name that already existed. This is changed so that it is not possible to use any existing names when renaming certificates and reports.
14. When a new frequency or switch instrument was created in different Beamex calibrators (MC4, MC5, MC5-IS, MC6) and instrument received to CMX, it was not always possible to send the instrument to different model calibrator.
15. Sometimes when changing between different types of instruments some parts of the view was not updated correctly, e.g. switching from weighing instrument to a transmitter.
16. Editing calibrator temperatures in Calibration Result view, did not trigger uncertainty calculation and the temperature coefficient was not included in point uncertainty values.
17. If an instrument with results where device model was empty was received then the following error message was shown: "Function 'XXX / YYY' can't be calibrated! Check that calibration procedure exists or function settings are correct". Now it is possible to receive instruments with no device model set.
18. MC4/MC6 drivers were not correctly receiving some calibration result points values when their resolution was 1, 10, 100 and so on. Results were incorrectly converted to large negative numbers (e.g. 1000 => -9223.372), thus very likely causing the Pass / Fail to be different in CMX and calibrator.

19. If instruments were created with an external tool in CMX the resolution of test points were not always shown correctly in CMX.
20. When receiving an instrument created in MC5 a second time CMX showed a message informing that some field values had changed even if they had nothing to do with that type of an instrument. Now this message does not appear anymore.
21. All nominal values were not always shown correctly on certificates and reports.
22. Editing Calibration Procedure with more than 11 up/down points were not possible.
23. Error calculation did not work correctly when transfer function was square root and the span negative.
24. There was an "Object reference not set to an instance of an object." error message when receiving an instrument with empty function name and Audit Trail is enabled. Now it is possible to receive without the error message. Requires Change Management option.
25. When Audit Trail records are sorted by some Audit Trail field and ticked as reviewed Audit Trail ticked randomly some other rows at the same time. Now only the selected row is ticked. Requires Change Management option.
26. CMX did not show reference (calibrator) information for third party calibrators in for results entered in Manual Entry if the third party calibrator option(s) in CMX was not enabled. Now it shows the calibrator information regardless if the third party calibrator option(s) is enabled or not in CMX.
27. It was not possible to directly calibrate a switch created in the Wizard by using User defined selection, set or reset points could not be defined in the Wizard.
28. Pressure type information was not shown in the calibration certificates for switches.
29. CMX versions 2.7.3 and 2.7.4 database conversion saved wrong module range name for MC4 T/GENERATE, MC2-MF T/GENERATE and MC2-IS T/GENERATE. There was 'measured' instead of 'sourced' for frequency unit's cph/cpm in module ranges for these modules.
30. When receiving from CMX for Pocket PC CMX sometimes informed wrongly that Instrument differs on Calibration Point delay field. Requires CMX for Pocket PC option.
31. CMX for Pocket PC Cannot close about dialog or exit CMX for Pocket PC on Windows Mobile 6.5. A button added to be able to close the about dialog. Requires CMX for Pocket PC option.
32. When printing a custom report for a position with more than one function and the calibration procedures have different calibration points the calibration points were wrong for the last function on the report. Report Design Option required.
33. Sometimes for instruments created in MC6 the wrong category was selected when the instrument was created in CMX.
34. If the SI unit "°C" (degree Celsius, default unit in CMX => no need to create as user defined unit) was created as a user defined unit the receiving from calibrator generated the error message "Index was out of range. Must be non-negative and less than the size of the collection. Parameter name index.". Now it is possible to receive from calibrator even if "°C" is used as a user defined unit.
35. If CMX was started with Command Line parameters, sometimes the CMX login language selection listed available languages twice.
36. Special CvD sensors created in CMX did not transfer correctly to MC6.
37. If an instrument with User Defined Pressure unit and Keyed as Method was sent to MC4 then the unit was empty in MC4. When receiving instrument back to CMX an "Object reference not set to an instance of an object" error message was shown.

Known Issues:

1. Expanded Uncertainty has sometimes an error for downscale points. CMX uses the standard deviation of upscale points for corresponding downscale points although standard deviation of downscale points is calculated/shown among average results.
2. If "Calibrated by" (Calibration) is used together with other field in the Filter function it works like an OR function instead of the AND function that is normal when fields are used combined in the Filter function.

WORKAROUND: to use it like a AND function: Use the SQL Editor in the Filter function to add parenthesis around the “Calibrated by” part (see the following example, additional parenthesis marked in red): “WHERE POSITION.POSCODE <> 0 AND CALREPEATHISTORY.CODE IN (SELECT CALREPEATHISTORY.CODE FROM CALREPEATHISTORY WHERE CALREPEATHISTORY.REPEATTIME >= CONVERT(DATETIME, \05-11-2006\, 102) AND CALREPEATHISTORY.REPEATTIME <= CONVERT(DATETIME, \06-29-2006\, 102) AND (CALREPEATHISTORY.MADEBY LIKE N'Joshua Jones%\'' OR CALREPEATHISTORY.MADEBY2 LIKE N'Joshua Jones%\'))”

3. Note that in CMX, MC6's Reference Junction specification is valid for its specified temperature range only. Temperature Coefficient value for MC6's Reference Junction specification is not available.
4. For positions created with old CMX versions or with old MC5 firmware versions and sent to MC6 it was not always possible to receive the calibration result from MC6. If this issue occurs for a position with multiple functions, please contact Beamex Helpdesk (support@beamex.com) for more information on how to fix this.
5. Fluke FCINTF driver does not support switches whose input quantity is current.

Other Important Information:

1. Most likely the support for Microsoft Windows XP will cease from next release of Beamex CMX.
2. Most likely the support for old Beamex TC and PC series calibrator communication (e.g. TC 305 and PC106) will cease from next release of Beamex CMX.
3. Digi EdgePort/1 USB to Serial converter that has been recommended to be used does not currently work with USB3 ports. It causes blue screen when trying to communicate. Use USB2 ports instead.

- END OF 20TH RELEASE NOTE -

19th Release Note

Release date: 5th September 2012

Version 2, Revision 2.7.4X4.0 (X is depending on Beamex® CMX product)

The following improvements have been included into Beamex® CMX Enterprise and Beamex® CMX Professional (FS):

Minor Improvements:

1. Beamex MC6 Device Description Installer program added to CMX, Tools/Beamex Tools/MC6 menu.
2. Beamex MC2/MC4 Picture capture program is now updated and recognises Beamex MC2/MC4.
3. Specifications for Russian temperature sensors for Beamex MC6 added.

Major Fixes:

1. Beamex MC6 Controller support, it now possible to send "Controlled" and "Controlled and Measured" instruments to Beamex MC6. Requires Beamex MC6 Firmware 1.10 or newer, 1.11 or newer recommended can be downloaded from www.beamex.com (Products/MC6/Links And Downloads).
2. Passed/Failed calculation did not work correctly for Switches when different settings were used for Set and Reset points: set point settings were used both for set and reset point. Now it is possible to use different setting for Set and Reset points. Fixed also in CMX for Pocket PC.
3. Only "Reset Error Multiplier" = 1 work, now "Reset Error Multiplier" works with other values also. Fixed also in CMX for Pocket PC.
4. Conversion of CMX database from earlier version to 2.7.failed for "Loop Supply" field for databases where some Function contained more than one procedure. Conversion did not complete.
5. Wrong calibrated by name was saved in the Result in CMX if the calibration was saved with empty "Calibration By" field in Beamex MC4. Corrected so if no "Calibrated By" name is selected in MC4 then the CMX User that receives the result will be saved with the result.
6. For big CMX Oracle database conversion failed with an "Open cursors exceed" error. CMX Oracle database conversion improved. Requires Oracle Database Support option.

Minor Fixes:

1. CMX did not calculate input uncertainty in the calibration results, for instruments with input method 'Controlled and Measured', when using a temperature controller to generate input. This is now fixed.
2. Specifications for Beamex MC6 Ports TC1 and TC2 corrected, both Thermo Couple and Low Voltage specifications and OUT port Voltage generation (Known Issue 6 in CMX 2.7).
3. Starting CMX from Command Line to open a specific Position or Device required Supervisor rights. Now only View rights are required.
4. Starting CMX from Command Line in Thin Client setup did not work. This was because C++ runtime 2010 components need to be installed on thin client. Installation files and instructions are added to CMX Installation Guide.
5. If some special characters had been used in report layout names prior to CMX 2.7 CMX did not list any layouts at all. Now CMX list all report layouts that does not contain invalid characters and inform the user what report layouts names do include invalid characters. CMX does not any longer allow saving report layouts with invalid characters. Please contact Beamex Help Desk (support@beamex.com) to get information on how to change the invalid report layout names.
6. Sometimes Beamex MC6 selected a pressure module with too small range when the instrument was sent from CMX. Now the pressure module that can cover the whole range of the instrument is selected (if exists) when the instrument is sent from CMX to Beamex MC6. Requires Beamex MC6 Firmware 1.10 or newer, 1.11 or newer recommended can be downloaded from www.beamex.com (Products/MC6/Links And Downloads).
7. If different calibrator was used for input and output points then the output uncertainty was not calculated when receiving from Beamex MC6 or Beamex MC4. Uncertainty is now calculated for all used calibrators both for input and output points when receiving from Beamex MC6 or Beamex MC4.
8. Conversion of CMX database from earlier version to 2.7 resulted sometimes in that the results graph y-axis showed NaN (Not a Number) instead of the correct error value. Now the correct value is shown.
9. Result graph is now using same resolution as in the result table.
10. Reverse Traceability report did not have group header information if an external module was used. A fixed Reverse Traceability report layout is available on the CMX installation media. This Reverse Traceability report layout does not support multi reference calibrations. This Reverse Traceability report layout has to be manually imported for existing CMX databases.
11. When creating Switch instruments by selecting User Defined Function template in CMX Wizard the wrong Calibration Procedure was shown in the Wizard. Now the Switch Calibration Procedure is shown in the Wizard if the Output Quantity is set to STATE in the Function.
12. It was not possible to receive Switch instruments from Beamex TC305. Now it is possible to receive Switch instruments from Beamex TC305.
13. Sometimes Beamex MC6 displayed as NaN (Not a Number) for "Relative Error" if an instrument where the low and high range had different resolution (e.g Low Range = 0 and High Range 0.4) was sent from CMX. When receiving the instrument back to CMX it generated an instrument differs message. Now Beamex MC6 shows correct "Relative Error" limit and no instrument differs message is shown when receiving.
14. Customized Accuracy Class definitions in Manual Entry differed from Calibration Procedure view. Now the same Accuracy Class definition as in Calibration Procedure view is shown in Manual Entry. Requires Weighing Instrument Support option.
15. History Trend did show NaN (Not a Number) for fields that had no value. Now these fields are set to empty in the History Trend view and reports. Requires History Trend option.
16. If a label for a free field was changed in CMX the changed label text was not shown in CMX for Pocket PC. Now CMX for Pocket PC shows the same text as in CMX for free fields. Requires CMX for Pocket PC and Configurable User Interface options.
17. Sending an instrument to Beamex MC6 failed if Automatic Check Out/Check In setting was on when using CMX Oracle database. Now it is possible to send instruments to MC6 from a CMX Oracle database if Automatic Check Out/Check In setting is on. Requires Oracle Database Support option.

18. Instrument differs message was not always displayed when receiving from CMX for Pocket PC in some situations if the instrument had been updated. When the instrument was received back to CMX result was received but no instrument differs message was displayed even if the instrument was modified in before calibration. This happened when the "Receive from Calibrator" window is left open between receives. Requires CMX for Pocket PC option.
19. Instrument was not always possible to receive instrument from CMX for Pocket PC. If an instrument was sent to CMX for Pocket PC and then deleted in CMX. When receiving the instrument back again an error message was displayed ("Instrument was not found in the Database and therefore the calibration data cannot be stored!") even if "Add Missing Instruments To Database" is set on. Requires CMX for Pocket PC option.

Known Issues:

1. Expanded Uncertainty has sometimes an error for downscale points. CMX uses the standard deviation of upscale points for corresponding downscale points although standard deviation of downscale points is calculated/shown among average results.
2. If "Calibrated by" (Calibration) is used together with other field in the Filter function it works like an OR function instead of the AND function that is normal when fields are used combined in the Filter function.
WORKAROUND: to use it like a AND function: Use the SQL Editor in the Filter function to add parenthesis around the "Calibrated by" part (see the following example, additional parenthesis marked in red): "WHERE POSITION.POSCODE <> 0 AND CALREPEATISTORY.CODE IN (SELECT CALREPEATISTORY.CODE FROM CALREPEATISTORY WHERE CALREPEATISTORY.REPEATTIME >= CONVERT(DATETIME,'05-11-2006', 102) AND CALREPEATISTORY.REPEATTIME <= CONVERT(DATETIME,'06-29-2006', 102) AND (CALREPEATISTORY.MADEBY LIKE N'Joshua Jones%'\ OR CALREPEATISTORY.MADEBY2 LIKE N'Joshua Jones%'\))"
3. Note that in CMX, MC6's Reference Junction specification is valid for its specified temperature range only. Temperature Coefficient value for MC6's Reference Junction specification is not available.

Other Important Information:

1. It is important to install new MC6 Tools into CMX Tools folder. Tools/Beamex Tools/MC6 menu then uses the latest version.

- END OF 19TH RELEASE NOTE -

18th Release Note

Release date: 10th February 2012

Version 2, Revision 2.7

The following improvements have been included into Beamex® CMX Enterprise and Beamex® CMX Professional (FS):

Major Improvements:

1. Support for Beamex MC6 calibrator. For more information about MC6 see www.beamex.com.
2. Support for Beamex Temperature Dry Blocks. Specifications for the Dry Blocks are defined in a different way in CMX than in the brochures for the Dry Blocks. For more information see the CMX Help.
3. CMX now supports an error limit function that is a sum of the previously available constant error limit and a new error limit depending on reading (relative error). The new fields are described in CMX's on-line help and in detail in CMX Calculations Help file. Open it from CMX Main Windows' Help menu. Select option CMX Calculations.

Since the error limit is no longer a constant, but a function, the Adjust if Error, Don't Adjust if Error and Adjust to Error limits are now percentages of Reject If Error limit function.

4. You may now add several calibration references to each calibration point. All Calibrators/Modules entered into CMX's database are available for adding.

For Average Results: If different Calibrators/Modules are used in different repeats then no average uncertainty will be calculated. If the same Calibrators/Modules are used in each repeat, then the uncertainty will be recalculated for the average point, each module uncertainty will be Root-Square-Summed together and that will be the average uncertainty.

5. CMX default Report layouts are now multilingual. No need to have different language versions of the report layouts in a multilingual setup. The field names are now coming from CMX user interface. It is described in the installation guide how to upgrade to the new report layouts and there is also described how to update custom report layouts.
6. CMX for Pocket PC now supports multiple User Interface languages (requires Pocket PC Interface option).
7. The Report Designer has been updated and this means that layouts created or updated in CMX 2.7 cannot be exported to older versions of CMX (requires Report Design option). Supported languages for the Report Designer user interface are: English, German, French, Spanish, Italian, Dutch, Czech, Danish, Portuguese, Russian, Polish and Simplified Chinese. The Report designer user interface language is based on Windows Regional Settings.
8. .NET Framework upgraded to .NET Framework 4.0 (.NET Framework 3.5 for CMX for Pocket PC). This also means that Microsoft Windows 2000, Microsoft Windows 2000 Server and Microsoft Windows XP 64-bit are not supported anymore.

Minor Improvements:

1. Support for two channels for TC and RTD instruments. Supported in MC6, Manual Entry and CMX for Pocket PC.
2. In Manual Entry and CMX for Pocket PC, when saving the results, a new dialog opens presenting Pass/Fail indication, found maximum error and most significant error (value and percentage) indicating how close to the error limit the most significant error is.
3. Improved selection on how the error is calculated ("Error Limits Calculated From" field in Calibration Procedure window). Drop down selection with Input, Output and Projected Input.
4. New field "Error Resolution" in Calibration Procedure window where to set the used resolution in error calculations.
5. Loop Supply field split into two fields: "Input Loop Supply" and "Output Loop Supply".
6. % of Span Error Calculation Method is now also supported also for switches.
7. For calibrators that support instrument history it is possible to set "Show Instrument History" on in Receive window. Then it is possible to receive history data. If the instrument has history the Status fields shows Original, Edited 1 ... Edited n and Current status for the instrument.
8. In Receive window the number of calibration repeats is shown in parenthesis. Example "Both (2/2)"
9. Before Calibration Note, Adjustment Note and After Calibration Note are shown in CMX for Pocket PC as in calibrators (requires Pocket PC Interface option).
10. Environment Information selection added to Tools menu in CMX for Pocket PC (requires Pocket PC Interface option).
11. If the same calibration result exists in CMX then CMX asks for confirmation before the calibration result is received.
12. Error messages and warning messages improved to be more informative when communicating with calibrators.
13. Now it is possible to have User Defined Transfer Functions with negative or downwards span.
14. The number of calibration points variables increased from 21 to 50 for reports (requires Report Design option).
15. Switch trigger level can now be transferred from CMX to MC5. It is still not possible to receive Trigger Level from MC5 to CMX.
16. Contact Type selection (dry or wet) added for Switches in Function window.
17. In the Receive window the instruments are now sorted in ascending order based on ID.
18. Functions are now sorted in alphabetical order for Positions and Devices that have more than one function.
19. It is now possible to delete report layouts in the Export Layouts window (File/Export/Document Layouts) even if Report Design option in use.
20. Custom Reference Sensors created in MC4 is now automatically created in CMX, if not already existing, when receiving calibration results from MC4 were the custom reference sensor is used.
21. There are a lot of new variables available for report layouts. Variables ending with _TITLE are for titles for the other variables. There are also a lot of new variables regarding error fields and reference fields (calibrators). There are also a number of other new variables. More information can be found in the CMX Report Variables Help (requires Report Design option).
22. MC4 is now also supported on 64-bit operating systems.
23. Specifications for cph (counts per hour) and cpm (counts per minutes) has been added for all Beamex MC Calibrators.
24. Support for %of reading error calculation method added for MC4 (MC4 Firmware version 3.11.9 or newer required in MC4).

25. Support for user defined pressure units implemented for MC4 (MC4 Firmware version 3.11.9 or newer required in MC4).
26. Support for setting display resolution implemented for MC4 (MC4 Firmware version 3.11.9 or newer required in MC4).

Major Fixes:

1. In earlier version of CMX it was not possible to send Positions/Devices to MC5 family where the ID length is more than 25 characters even though CMX itself supports up to 65 characters. This has now been fixed so the user can select whether if the first or last 25 characters are sent (Tools/Options/Calibration). If the shortened ID's are equal then ~XX or XX~ are added to the end or beginning of the ID where XX is a running number. This also means that only 22 characters are shown e.g. "abcdefghijklmnopqrstvw~01". If the instrument is received to another CMX database than from where it was originally sent, the instrument will be treated as a new instrument with the ID shown in the calibrator. It is still possible to get two instruments with the same ID in the calibrator if they are sent from different CMX databases.
2. If Positions with ID's that are similar and included spaces was sent to a MC5 family calibrator they were treated as same instrument (e.g. "mV test" and "mV test as V"). This is now fixed. If there were spaces in the beginning or at the end of the ID it also sometimes created error situations. Now it is not possible to send Instruments that has spaces in the beginning or at the end of the ID to MC5 family calibrators (CMX gives an error message).

Minor Fixes:

1. Sometimes when receiving an instrument CMX indicated that an error limit had changed in the calibrator even if it had not. This is due to how floating numbers are represented in the calibrator (calibrator uses less bytes to represent the value) e.g. 0.9375 was changed in the calibrator to 0.9375001. The error values are now formatted and compared according to the error limit resolution in the CMX Database when receiving.
2. When a Position with multiple functions was sent to a MC5 family calibrator it was difficult to select the correct function, due to that the function name is not shown in the list of Positions to be calibrated. Now there is a setting in CMX (Tools/Options/Calibration) where the user can select "Position Name" and "Function Name" fields are switched. NOTE! Field header is not changed in the calibrator only field value.
3. A possibility to add a "~" character (tilde) in front of unstable readings was available in previous release. However, this could be mistakenly read as a minus sign. Now the "~" character is added to the end of a number, even when entered as the first character.
4. When Site User Maintenance is utilized, all non-supervisor users must now be assigned to at least one Site Group. Before it was possible to add a user without belonging to a Site Group. This caused that only a Supervisor could access the user.
5. A memory leak in CMX for Pocket PC has been fixed (requires Pocket PC Interface option).
6. Graph component updated in CMX for Pocket PC so the warning message is not shown anymore (requires Pocket PC Interface option).

7. CMX now use Calibrator Manufacturer, Calibrator Module Model and serial number to make unique reference. This fixes also the known issue number 2 in CMX 2.6.
8. “% of Accuracy Class” for weighing instruments is removed from CMX if it is not in use (requires Weighing Instrument support option).
9. POC6 and POC4 are not anymore added as modules to the calibrator. They are now added as calibrators and works correctly when used as “Controlled and Measured” (Module and range needs to be added manually).
10. Uncertainty is now calculated correctly when Controlled method is used.
11. Rounding of Maximum Error was different in History Trend report then in the calibration result. Now History Trend report uses the same rounding (requires History Trend option).
12. Accuracy Class selection was not available in the Wizard in CMX 2.6 even if it was available in earlier versions of CMX. Now is the Accuracy Class selection available in the Wizard (requires Weighing Instrument support option).
13. If an instrument was created twice in MC5 by using HART, FF or PA and the calibration was done on the later one CMX is not able to receive the result. CMX was showing a non informative error message. Now CMX warns the user when selecting this kind of instrument before receive to avoid the error situation.
14. The Edit and Delete menu for custom PRT sensors are now translatable.
15. “RJ Temperature” text in Manual Entry window is now translatable.
16. If a calibrator was saved without specifying calibration interval unit it was not possible to do any calibration in CMX. Now CMX requires calibration interval unit to be set before saving.
17. Now it is possible to save Module even if the module is not set to be compatible with a calibrator.
18. Max Deviation in Calibration Procedure window is now correctly sent to MC5 and also updated in CMX if changed in MC5.
19. Now it is possible to receive calibration results from MC4 even if some part of the calibration history in middle has been deleted in MC4.
20. Now it is possible to receive calibration history from MC4 even if Position ID has been changed (requires that “Show Instrument History” is checked in Receive window).
21. Now it is possible to print calibration certificate for switches even if the Reset Point is not set.
22. Same and a more informative message are shown when an inactive procedure is sent to CMX for Pocket PC or any calibrator.
23. Calibration Certificate showed that the calibration result was approved even if it was just edited and if Electronic Signature was not in use. The error was in the Calibration Certificate layouts and is now fixed.
24. When the function for switches was edited and the dead band was negative, information was written to Audit Trail that the dead band was changed even if it was not. This wrong information is not written to Audit Trail anymore (requires Change Management option).
25. The selection for Positions/Devices (speed filter next to filter button) is not set to All Positions/Devices anymore when starting CMX using parameters (command line) and no Position ID or Device ID is defined.
26. An error message is now shown if an instrument with User Defined Transfer Function and the Test Points defined as Output points is sent to MC4 (this combination is not supported by MC4).
27. When switching between a position that had a User Defined Transfer Function and a switch position with a standard transfer function the Function window was not updated correctly (User Defined Transfer Function table was shown also for the switch). This is now fixed so the Function window is updated correctly.
28. When switching between conventional instrument calibration result to weighing instrument calibration result and then back to conventional instrument calibration result the Calibration Result window was not correctly updated. It contained some weighing instrument information. This is now fixed so the Calibration Result window is updated correctly (requires Weighing Instrument support option).
29. When opening a Weighing instrument result where the last repeat was Minimum weight test and then open another result with just weighing test then the weighing test properties was incorrect, the Minimum weight test properties are shown for weighing test. Now the correct properties are shown (requires Weighing Instrument support option).
30. The resolution of the Minimum Weight error limit is now used instead of the fixed resolution when calculating error for weighing instruments (requires Weighing Instrument support option).
31. In Manual Entry Form report the “Adjust To” field had sometimes value 0.0 even if it should be empty. This is now corrected.

32. If "Pre-enter previous values to Manual Entry" for an instrument is enabled then in Manual Entry it now uses information from the last calibration repeat.
33. When logging into CMX server after a computer/server reboot, the computer shows the following error message: 'Can't connect to host tcp://localhost:1971. The problem may be caused by wrong connection parameters or that application server is not properly running on host. Please check the connection parameters.'
The server started working if CMX server was stopped and started again.
Reason: This may be because the computer/server is temporarily returning a different IP address during start-up.
Solution: Go to CMX Server Manager -> Tools -> TCP/IP Port Settings and uncheck the Use IP address (this checkbox is added in CMX 2.7).
This is only valid for CMX Professional FS and CMX Enterprise.
34. Sometimes when receiving results from MC5 CMX informed that the calibration points had changed even though they had not. This was due to a rounding issue for zero point if Fixed Points and Error Limits Calculated from Input Points was selected.

Known Issues:

1. Expanded Uncertainty has sometimes an error for downscale points. CMX uses the standard deviation of upscale points for corresponding downscale points although standard deviation of downscale points is calculated/shown among average results.
2. If "Calibrated by" (Calibration) is used together with other field in the Filter function it works like an OR function instead of the AND function that is normal when fields are used combined in the Filter function.
WORKAROUND: to use it like a AND function: Use the SQL Editor in the Filter function to add parenthesis around the "Calibrated by" part (see the following example, additional parenthesis marked in red): "WHERE POSITION.POSCODE <> 0 AND CALREPEAT HISTORY.CODE IN (SELECT CALREPEAT HISTORY.CODE FROM CALREPEAT HISTORY WHERE CALREPEAT HISTORY.REPEAT TIME >= CONVERT(DATETIME, '05-11-2006', 102) AND CALREPEAT HISTORY.REPEAT TIME <= CONVERT(DATETIME, '06-29-2006', 102) AND (CALREPEAT HISTORY.MADEBY LIKE N'Joshua Jones%' OR CALREPEAT HISTORY.MADEBY2 LIKE N'Joshua Jones%'))"
3. Note that in CMX, MC6's Reference Junction specification is valid for its specified temperature range only. Temperature Coefficient value for MC6's Reference Junction specification is not available.
4. MC6 Device Description Installer program does not appear in CMX Tools/Beamex Tools/MC6 menu. Add it as External link into Tools/External Links menu from CMX folder: Tools/MC6 Device Description Installer/MC6DeviceDescription.exe
5. MC2/MC4 Picture capture program does not recognise MC2/MC4.
6. The following specifications are incorrect in CMX database for MC6 and can be corrected manually (Database/Calibrators...). Voltage Measurement (TC1 and TC2) % of RDG from 0.006 to 0.007. Voltage Generation (OUT and TC1) % of RDG from 0.006 to 0.007. Simulation and Measurement for E type 0-1000°C (TC1 and TC2) % of RDG from 0.004 to 0.005. Simulation and Measurement for J type 0-1200°C (TC1 and TC2) % of RDG from 0.005 to 0.006. Simulation and Measurement for K type 0-1000°C (TC1 and TC2) % of RDG from 0.006 to 0.007. Simulation and Measurement for K type 1000-1372°C (TC1 and TC2) % of RDG from 0.016 to 0.017. Simulation and Measurement for N type 800-1300°C (TC1 and TC2) Constant Error from 0.06°C to 0.07°C. Note also that the range has changed from 700°C to 800°C (0-700 => 0-800 and 700-1300 => 800-1300). Simulation and Measurement for L type 0-900°C (TC1 and TC2) % of RDG from 0.004 to 0.005. Simulation and Measurement for C type 1000-2315°C (TC1 and TC2) Constant Error from none to 0.03°C. Simulation and Measurement for D type 1200-2100°C (TC1 and TC2) % of RDG from 0.022 to 0.024. Simulation and Measurement for D type 2100-2315°C (TC1 and TC2) Constant Error from 0.6°C to 0.65°C.

Other Important Information:

1. Microsoft Windows 2000, Microsoft Windows 2000 Server and Microsoft Windows XP 64-bit are not supported anymore.
2. It is important to install new MC6 Tools into CMX Tools folder. Tools/Beamex Tools/MC6 menu then uses the latest version.

- END OF 18TH RELEASE NOTE -


17th Release Note

Release date: 15th September 2010

Version 2, Revision 2.6.

The following improvements have been included into Beamex® CMX Enterprise and Beamex® CMX Professional (FS):

Major Improvements:

1. Support for Microsoft Windows 7 ("Compatible With Windows 7" logo certified , For more information see the installation guide.
2. Support for Microsoft Windows Server 2008 and Microsoft SQL Server 2008. For more information see the installation guide.
3. Speed improvements over WAN (Wide Area Networks). In general the performance has been doubled. Hints for increasing the response time can be found in CMX Help, topic General Settings Fields.

Minor Improvements:

1. Defining CMX Users and User Groups have now an additional feature for including Site Groups and Site Managers. This feature called Site User Maintenance is especially useful for large companies. Site User Maintenance may be activated from the Security Options.
2. User Defined Transfer Function. This replaces the previous tool: User Defined Calibration Points. Among Function data is a field for defining the instrument's Transfer Function, i.e. input/output correlation. In addition to standard Transfer Functions, an option called "User Defined Transfer Function" is also available. This option is usable when CMX's standard Transfer Functions do not apply, but corresponding input/output pair values are known.
3. User Defined PRT Sensors. CMX supports entering custom Callendar van Dusen equation coefficients for Platinum Resistance Temperature (PRT) type RTD sensors used, e.g. as reference sensors. User defined PRT sensors are supported by Beamex MC4 Documenting Process Calibrator.
4. Require Stable Output is a new setting in the Calibration Procedure window. When checked, calibration points are accepted automatically only when the output, together with the input, is also stable. Useful when a calibration is done automatically with calibrators, supported by Beamex MC4.

5. Indication of unstable reading has been added to calibration results. If an input or output value has a “~” character (tilde) in front of the numeric value, e.g. ~12.045, the reading was unstable. Adding this character is possible in Manual Entry window and when appropriate, the character is automatically added in a reading when using certain modern calibrators. This is also supported by CMX for Pocket PC (requires Pocket PC Interface option).
6. Error Graph Scaling (of 'Reject Error >' limit) setting has been added to the Calibration options (Tools/Options/Calibration). This is a selection list of factors for scaling the error graph in reference to Reject Error limit.
7. Max Point Deviation column has been added to the calibration point table in the Calibration Procedure window. Allowed Calibration Point Deviation. Useful, e.g. when a calibration is done automatically with calibrators, e.g. Beamex MC4 and, supporting this setting. In Manual Entry window and CMX for Pocket PC: An input value that is outside the Max. Deviation limits is shown in red.
8. CMX has a comprehensive set of pre-entered pressure units. If however they are not suited for your needs, you can now create custom pressure units in the Function window. The custom pressure units can be used in Manual Entry window and in CMX for Pocket PC.
9. Command Line Support. CMX can be set to open a specific Position or Device from a specific database using a specific User.
10. Black list for CMX license keys and calibrators. If a CMX license key or calibrator (serial number) is blacklisted then CMX cannot be opened or CMX will not communicate with the calibrator. Customers can inform Beamex of stolen calibrators or CMX license keys and they will be added to the black list.
11. Position ID and Device ID field lengths increased from 25 to 65 characters. Extended field lengths are supported by Beamex MC4, CMX for Pocket PC and Manual Entry.
12. Installation can now also automatically install 64-bit .NET Framework on 64-bit Windows. NOTE! Beamex MC4 USB driver do not support 64-bit windows.
13. CMX Licenses Key Drivers have been updated to grant more secure support for new or updated operating systems.
14. In the Filter function it is now possible to select “As Found” and “As Left” repeats separately.
15. An add-on support for Beamex Tools has been added to the Tools menu. This makes it possible to launch Beamex Tools like MC5 PRT Tool directly from CMX.
16. Instrument differs message now includes detailed information about the differences when instrument data differ when uploading from calibrator.
17. Work Order field is now also displayed in Calibration Result view.
18. Test Connection Button added in CMX Server Service Manager. This tests the connection between CMX/CMX Server and the CMX database.
19. CMX version column added to Audit trail (requires Change Management option).
20. If a user makes mass updates thru user defined lists (Database/Lists...) a warning message is now shown and gives the user a chance to cancel the mass update action.
21. The number of visible Weight Sets or Weights in the Manual Entry window is now depending on the window size (used to be fixed to 6). Requires Weighing Instrument support option.
22. Report variables added (requires Report Design option):
Current.Function.IN_MEASUREMENTCHANNEL, Current.Function.OUT_MEASUREMENTCHANNEL,
Current.Function.IN_FREQAMPLITUDE,
Current.Function.OUT_FREQAMPLITUDE, Current.Function.IN_FREQUENCYDUTYCYCLE,
Current.Function.OUT_FREQUENCYDUTYCYCLE, Current.Function.OUT_SWITCHINVERTOPENCLOSE,
Current.Procedure.REQUIRESTABLEOUTPUT, Current.Procedure.SCALEERRORRANGE6 ... 10,
Current.Procedure.SCALEREJECTIFERROR6 ... 10, Current.Device.SENSORSERIALNUMBER,
Calibration.Function.IN_MEASUREMENTCHANNEL, Calibration.Function.OUT_MEASUREMENTCHANNEL,
Calibration.Function.OUT_SWITCHINVERTOPENCLOSE, Calibration.Function.IN_FREQUENCYDUTYCYCLE,
Calibration.Function.OUT_FREQUENCYDUTYCYCLE, Calibration.Procedure.REQUIRESTABLEOUTPUT,

Calibration.Procedure.SCALEERRORRANGE6 ... 10, Calibration.Procedure.SCALEREJECTIFERROR6 ... 10, System.CMXLanguage

23. In addition to the Date, Time is now also supported for Calibration Time field in the Filter window.
24. Maximum number of MPE Limits is extended from 5 to 10. Requires Weighing Instrument support option.
25. Beamex MC2 and Beamex MC2-IS specifications added.
26. Beamex POC4 and Beamex POC6 specifications added.
27. Fluke 700P27 Pressure Module specifications added. Requires Fluke communication driver option.
28. Pressure type abbreviations are now also coming from language file.
29. Some error messages that were hard coded are now coming from the language file.
30. Texts for Calibrators and Calibrators modules are now read from the language file during conversion of the database (upgrade of CMX).
31. Interval units are now coming from the language file.
32. Progress bar and printing dialog texts for printing dialogs are now coming from the language file.
33. All CMX forms and views have been changed to contain wider labels to avoid that the texts are cut or wrapped.
34. Minimum password length is now checked every time when the password is used. Before it was checked only during creation/change. This forces the user to immediately to change the password if the minimum password length is extended.
35. Opening of additional help files like CMX Calculation have been moved from General help file to the Help menu.
36. Trigger Level and Amplitude Unit combo boxes show now only V (Volt).
37. When a test point was skipped in the Pocket PC then the Input data (weights and other loads) was not copied to the next point. Input data is now copied from last valid point (requires Pocket PC Interface option).
38. It is now possible for several users to work with Calibrator modules at the same time.
39. If the CMX for Pocket PC version is older than the CMX Client then CMX now warns that: The XML file version in the Pocket PC is older than what CMX currently uses and will therefore be upgraded, after you have finished sending instruments to the Pocket PC you should check that you have installed the latest version of CMX for Pocket PC (requires Pocket PC Interface option).
40. If Audit Trail is empty, Print and Print Preview menu items are disabled (requires Change Management option).
41. New revision of document layouts with new design and support for additional MPE-ranges for Weighing Instruments (requires Weighing Instrument Support option).
 - For upgrades these layouts must be imported manually after the upgrade.
 - The new layouts can be found on the Beamex® CMX Installation DVD under “\Files\Report Layouts\SQL Server Default\” folder sub tree or “\Files\Report Layouts\Oracle Default\” folder sub tree. If the layout is translated then it can be in the Files\Languages folder sub tree.

Major Fixes:

1. CMX revision 2.5 upgrade could not convert the database if the Document Links contains the apostrophe character ('). The apostrophe character is one of the SQL Server reserved characters.

Minor Fixes:

1. It is not anymore possible to enable LDAP option in CMX before a CMX user that has Supervisor or “Option Maintain – LDAP” user right has been authenticated. If the CMX user can't be successfully authenticated it is not possible to enable LDAP. Requires LDAP option.

2. External modules set to inactive are not anymore listed as a valid selection for calibrations.
3. Microsoft SQL Server 2005 does not support #, INF or NAN values (was supported in earlier versions). Every field are now checked for these during the conversion of the database (upgrade of CMX).
4. The word "EXTERNAL" is a reserved word in Microsoft SQL Server 2005 (was not a reserved word in earlier versions). This caused issues and the database compatibility mode had to be set to Microsoft SQL Server 2000 mode in Microsoft SQL Server 2005 and Microsoft SQL Server 2008. This is now fixed so the correct database compatibility mode can be used.
5. In some special circumstances the "Value Before" value" for "Electronic Signature Status" field was wrong in Audit Trail (requires Change Management option).
6. Negative resolution is now handled correctly for Beamex MC4.
7. Some extra fields were shown for a restricted CMX user in Calibration Procedure view when the function was selected before. This does not longer occur.
8. Maximum Set and Reset Error for Switches was not correct on Calibration Certificates. This is now fixed.
9. Exception handling added when reading XML structure when converting Document links. Beamex QM6 Import to CMX might have caused invalid XML formats in CMX database (for Oracle databases only). Requires Oracle Database support option.
10. CMX now shows all MPE Ranges when more then one Partial Weighing Range is used. Requires Weighing Instrument support option. Requires Weighing Instrument support option.
11. "Customized" Accuracy Class selection is now working correctly for all languages (requires Weighing Instrument support option).
12. An error message was shown without reason when receiving from Pocket PC weighing instruments were two or more weight sets have been used. The unnecessary error message is not shown anymore (requires Pocket PC Interface option).
13. Now it is possible to send Free Devices to Beamex MC4 and MC5 even if "Include Plant Path while communicating with calibrator supporting Plant Path".
14. When an instrument with an unsupported sensor was sent to Beamex MC4 and the instrument already existed in the MC4 the communication failed and the instrument was deleted from MC4. This is now fixed.
15. Two temperature sensors were wrongly named in CMX. "Pt400 (3924)" changed to "Pt500 (3924)" and "Pt500 (3924)" changed to "Pt1000 (3924)". "Pt400 (3924)" should not exist and "Pt1000 (3924)" was missing.
16. If the "Reset Error Multiplier" for Switches was left empty CMX used 2 as default. CMX now uses 1 as default.
17. All changes to the points for "User defined calibration points" (Transfer Function) is now written to audit trail (requires Change Management option).
18. All nominal input points are now printed correctly on the Manual Entry Form report even if the weighing instrument has been changed from general instrument to a weighing instrument (requires Weighing Instrument support option).
19. Cancellation now clears selected references when receiving (keyed) results from calibrator and user is asked to select used reference and selects a reference but later cancels the selection.
20. Sometimes deletion of a free Device for Oracle databases failed. This is now fixed. Requires Oracle Database support option.
21. Sensor Serial Number is now saved when a Device is created by pressing the New- button.
22. If a Position is checked out when deleted then it now also deletes the Device connected to this position.
23. One extra unnecessary line was written to Audit Trail if User data was edited for a user that had tried to login with wrong password. This extra line is not written to Audit Trail anymore. Requires Change Management option.
24. When adding a function from the popup menu (right click) for a Switch the label for the Trigger Level field was wrong.
25. Sometimes document links was cleared when data edited and invalid data were inserted.
26. Sensor Serial Number was not copied when copying a Device.
27. Audit Trail was unnecessary asking for reason of change when the New-button was pressed in the Lists windows (requires Change Management option).
28. When sending a Position or Device with only an inactive or without a Calibration Procedure resulted in a non explaining error message. CMX now shows a more informative error message.
29. When importing a new Audit Trail Report the old layout name was not cleared from the Layout Name text box (requires Change Management option).

30. In CMX for Pocket PC when pressing the OK-button in Calibrator Reference or Environment view CMX for Pocket PC returned to wrong view (requires Pocket PC Interface option).
31. Sometimes extra unnecessary rows were written to the Audit Trail if data in Calibrator Module Range properties view was edited (requires Change Management option).
32. If a user that has no "Calibrators and modules maintain" -permission sends or receives instruments to or from a calibrator that is missing in the database then the calibrator was added to the database. This is not possible anymore.
33. Auto generation of Position and Device ID was able to generate to long ID. Auto generation of Position and Device ID length is now limited to the length of the ID fields.
34. Validation of valid data for Sensor Supply field is now working correctly.
35. Changes for Sensor Supply field were written twice to the Audit Trail. Now it is written only once (requires Change Management option).
36. Some checkboxes was not enabled correctly after editing data. This is now fixed.
37. When receiving an instrument from Beamex MC4 that had Output Method set to keyed and Loop Supply set to 24V CMX informed that the instrument differs and the Loop Supply was set to Off in CMX. Now CMX receives this type of instrument correctly from MC4.
38. CMX Server Service was writing login and logout events to the Windows event log even if the setting "Write event log" was unchecked.
39. When doing changes in User Interface Customize window for the Result properties Window the window name was not included in Audit Trail Object Reference field (requires Change Management option).
40. Adding a new Used Defined Unit is now written to Audit trail (requires Change Management option).
41. The "..."-button symbol is now shown correctly for all languages.
42. Device Model information is now handled correctly when receiving HART instruments from Beamex MC5.
43. "History Trend" and "Audit Trail" layout types are now disabled in "Import Layouts" and "Export Layouts" windows when Change Management and History Trend option are not on in the license key.
44. When adding new item in a pick up list via its parent form (e.g. new Process Medium in Position window), its addition is now written to Audit Trail (requires Change Management option).
45. Combo box drop down part are now opened with the same width as the combo box itself.
46. Only CMX main window and Manual Entry window are now shown on the Taskbar.
47. If the ProcedureList file was missing for some reason on the Pocket PC then some of the other CMX files on the Pocket PC did get corrupted. This is now fixed (requires Pocket PC Interface).
48. If an instrument function's Input or Output quantity is changed e.g. from PRESSURE to MASS, and no input/output unit is selected, CMX did not correctly validate the unit and allowed Function to be saved. When a Function without unit definition was calibrated trough Manual Entry an error occurred, when selecting Weight Set and Weight. This is now fixed (require Weighing Instrument Support option).
49. If a switch was created by using the Wizard (e.g. Temperature Switch) and then later changed to a Weighing Instrument through the edit function, an error message was displayed and was impossible to save the function. This is now fixed (require Weighing Instrument Support option).
50. "Audit Trail time format" combo box is now disabled when "Audit trail Enabled" is unchecked in options (requires Change Management option).
51. If both Position and Device have been modified in the calibrator then Electronic signature was only asked and updated for Position (and Calibration), not for the Device when receiving instrument from the calibrator => Device Signature status was not updated (requires Change Management option).
52. Running History Trend when no results are available does not freeze CMX anymore (requires History Trend option).
53. When receiving results from a calibrator and the instrument has been calibrated many times CMX asks if all results should be received to one repeat or only the calibrations within the (in the options given), date range. If this message window is closed (with x button), the 'within date range' is always selected (even if only one repeat was selected). The x-button works now like the OK button (uses the radio button that is selected when pressed).
54. When saving calibration for a Position, who's Function, have document links, the Function document links are saved twice with the calibration event (result). Both Position function and Device function document links were saved. Function document links for the calibration event (result) are now taken either from Position function or Device function depending if calibration is done for the Position or the Device.

55. When removing calibration event (result), the document links were not removed. When deleting calibration event (result), all event (result) related document links are now deleted.
56. Reject error was set to 0 when procedure was missing from the function template and the Wizard was used. Reject error limit value is now set to empty.
57. It was also possible to add more repeats in Manual Entry for other than Minimum Weight Test. Now it is only possible to add more repeats to Minimum Weight Test (requires Weighing Instrument Support option).
58. If there was no calibrator created in Calibrators window, CMX Help did not open from the Help icon. CMX Help is now opened from the Help icon even if there is no calibrator added to the CMX database.
59. Unexpected error was shown if no calibration repeats exists and Set repeat is chosen in Manual Entry window. Now is the Set repeat selection disabled if no calibration result exists.
60. If Weighing Instrument with Digital Variable (method = keyed) was defined then when it was opened in Manual Entry it looked like a regular instrument (transmitter). Now it shows Weighing Instrument tests in Manual Entry (requires Weighing Instrument Support option).
61. CMX did send an instrument to Beamex MC4 calibrator even if the calibrator/modules were inactivated and the No button was selected in the dialog where it ask if you want to send it anyway. Sending is now ended if the No button is pressed.
62. Set/Reset Error Direction combo box (for Switches) did not have the same values in CMX for pocket PC and CMX. Now the CMX for Pocket PC has the same values as CMX (requires Pocket PC Interface option).
63. When moving between results sometimes the "Error creating window handle" error message was shown on Windows XP and Windows 7. This is now fixed.
64. If "Pre-enter nominal values to Manual Entry" setting was on then the Average calculation did not work correctly for Switches. This is now fixed.
65. "WeightSetList.xml not found in PDA, please resend the instrument to the PDA" was displayed when an old CMX for Pocket PC version (2.1) was upgraded to CMX 2.6 and Weighing Instrument was selected for calibration. After the error message it is possible to continue the calibration and if weights image was clicked, the program exited without any message. Now if WeightSetList.xml is missing it is not possible to open Weighing Instruments in calibration mode (requires Pocket PC Interface and Weighing Instrument support options).
66. Minimum weight limit was compared against a value with more decimals. This lead sometimes to a failed result even it should not. Minimum weight limit is now compared to a value with the same number of decimals (requires Weighing Instrument support option).
67. Maximum error was missing for switches History trend report. Report now changed so Maximum error is shown also for switches (requires History Trend option).
68. In History Trend (Detailed) v2.2 report the wrong variable was used for Maximum Positive Reset Error and for the unit in the header for switches. This is now corrected in History Trend (Detailed) v2.6 report (requires History Trend option).
69. It was possible to edit some of the Calibration Result fields after that the calibration results were saved in CMX for Pocket PC. Now it is not possible to edit calibration results after that they are saved (requires Pocket PC Interface option).
70. When printing reports sometimes the "CONVERSION FROM TYPE "DBNULL" TO TYPE "DOUBLE" IS NOT VALID" error message was shown. This is now corrected.
71. Not all _STRING variables were updated correctly in reports. This is now corrected.
72. If "Autoscale graph according to calibration results" (Tools/Options/Calibration) setting was on then the error graph for switches was not correct on certificates. This is now fixed.
73. When a Position or Device with more than one function was sent to a calibrator and sending one of the functions failed (function not correctly configured for the calibrator) then upon resending the Position the function sending that did success first time was duplicated in the calibrator after resend. The function is not duplicated anymore.

Known Issues:

1. If "Calibrated by" (Calibration) is used together with other field in the Filter function it works like an OR function instead of the AND function that is normal when fields are used combined in the Filter function.
WORKAROUND: to use it like a AND function: Use the SQL Editor in the Filter function to add parenthesis around the "Calibrated by" part (see the following example, additional parenthesis marked in red): "WHERE POSITION.POSCODE <> 0 AND CALREPEATHISTORY.CODE IN (SELECT CALREPEATHISTORY.CODE FROM CALREPEATHISTORY WHERE CALREPEATHISTORY.REPEATTIME >= CONVERT(DATETIME,\05-11-2006\, 102) AND CALREPEATHISTORY.REPEATTIME <= CONVERT(DATETIME,\06-29-2006\, 102) AND (CALREPEATHISTORY.MADEBY LIKE N\Joshua Jones%\ OR CALREPEATHISTORY.MADEBY2 LIKE N\Joshua Jones%\'))"
2. Weights in Weight sets are mixed up in Manual Entry (requires Weighing Instrument support option). If a weight has the same Module Name and Module S/N but has different Manufacturers and Weight sets and the second Weight Set in the Calibrators list is selected in "Calibrators To Use" the first one in the Calibrators list is saved to the results. This is partly fixed in CMX 2.6. It not longer possible to save a new module that has same name and serial number as an existing one. This does not remove the issue with existing modules that have the same name and serial number.
WORKAROUND: change the serial number for the modules so there are no modules that have the same name and serial number.

- END OF 17TH RELEASE NOTE -

16th Release Note

Release date: 7th October 2009

Version 2, Revision 2.5.3X4.0 (X is depending on Beamex® CMX product)

If Beamex® CMX Calibration Software revision 2.5.2X.4.0 is already installed and the conversion of the database was successful then there is no need to install this revision.

Only the Beamex® CMX Calibration Software (Client) revision has been updated (No need to upgrade the Beamex® CMX Server if the revision 2.5.224.0 is already installed).

The following improvements have been included into Beamex® CMX Enterprise and Beamex® CMX Professional (FS):

1. CMX revision 2.5 upgrade cannot convert the database if the Document Links contains the apostrophe character ('). The apostrophe character is one of the SQL Server reserved characters. This issue is now fixed.
2. Maximum Set and Reset Error for Switches for As Left results came from As Found results in the Calibration Certificate for Finnish (Kalibrointitodistus v2.2.lst) and German (1-seitiges Zertifikat v2.2.lst) Certificates. The corrected Certificate layouts are found on the installation CD in the "Files\Languages\Finnish (or German)\Report Layouts\Certificate" folder. Instructions on how to import the layouts can be found in the Beamex® CMX User Guide.

- END OF 16TH RELEASE NOTE -

15th Release Note

Release date: 3rd June 2009

Version 2, Revision 2.5

The following improvements have been included into Beamex® CMX Enterprise and Beamex® CMX Professional (FS):

Major Improvements:

1. Beamex® Support for Lightweight Directory Access Protocol (LDAP) (requires LDAP option).
 - Beamex® CMX Active Directory LDAP Authentication is additional option. This additional feature can be added to each CMX software license when required.
 - This LDAP option makes it easier to manage the Beamex® CMX user passwords and it is also one password less for the user to remember.
 - Beamex® CMX Active Directory LDAP Authentication is a setting that can be set on/off by Beamex® CMX administrator. This setting appear on CMX tools > options menu when additional feature has been set on for the CMX software license.
 - The LDAP option and connection parameters have their own LDAP tab in Beamex® CMX options.
 - A specific User Rights setting to enable a user to change the LDAP settings or not.
 - A user with the same ID needs to exist in CMX database and LDAP. The Beamex® CMX user permissions are maintained in Beamex® CMX in the same way as before.
2. Timestamp with Coordinated Universal Time (UTC) information in Audit Trail (requires Change Management option).
 - **UTC** is based on the second (SI), as defined and recommended by the Consultative Committee on International Radio (CCIR), and maintained by the Bureau International des Poids et Mesures (BIPM). For most practical purposes associated with the Radio Regulations, UTC is equivalent to mean solar time at the prime meridian (0° longitude), formerly expressed in **GMT**.
 - Three different ways of time stamping are supported
 1. UTC based on the Database Server time (default for new installations).
 2. UTC based on the Beamex® CMX Client computer time.
 3. Beamex® CMX Client computer time as it is in older versions of Beamex® CMX (default for upgrades).
3. Improved language support.

- Possibility for the user to select the user interface language in the login window.
 - For the server version of Beamex® CMX the language file is copied to the client only if the file has changed
 - Some of the user interface texts that are in the database are moved to the language file. Example of this is the error type for Reject Error and Interval type in the Calibration Procedure window. Some of the user interface texts in the database are still not moved to the language file. Examples of this are the different lists under Database=>Lists. The user can add own translations to some of these texts.
 - The correct Help file is opened even if the user is using other than the default language.
4. Document Manager.
- The Document Manager is an addition to the old Document Links fields so it is also possible for the user to select if the file is saved to the database or if only the link to the file that is saved.
 - A new checkbox is added in the options window (General Settings) to enable/disable the possibility to save files in the database.

Minor Improvements:

1. Multi byte language support for Oracle databases (requires Oracle option).
 - It is now possible to use Oracle databases for languages where the characters are stored in multi byte format (like Japanese and Chinese).
2. Fluke 743B/744 - Thin Client driver (requires Fluke option)
 - It is now possible to communicate with Fluke calibrators in "Thin Client" installations.
 - At the same time it was made possible for restricted (Microsoft Windows) user to communicate with Fluke in Restricted User mode.
3. New Russian RTDs per GOST R 8.625-2006 sensors added.
4. MC2-IS Specifications for EXT-s-IS modules added.
5. New revision of the Manual Entry Form (Report Layout) that works better with multiple function positions.
 - For upgrades this layout (Manual Entry Form v2.5.lst) must be imported manually after the upgrade.
 - The new default Manual Entry Form layout can be found on the Beamex® CMX Installation CD under "Files\Report Layouts\SQL Server Default\Report" or "Files\Report Layouts\Oracle Default\Report". If the layout is translated then it can be in the Files\Languages folder sub tree.

Major Fixes:

1. It was not possible to calibrate Weighing Instruments with multiple Partial Weighing Ranges when several e-values had the same value ($e_1=e_2$). This was possible in versions prior to Beamex® CMX revision 2.4 (requires Weighing Instrument option).
2. It was not possible to calibrate Weighing Instruments with multiple Partial Weighing Ranges if you selected an Accuracy Class that had all the Partial Weighing Ranges within the first MPE range (requires Weighing Instrument option).

Minor Fixes:

1. It was not possible to change the host later from the User Interface if wrong host was written at Beamex® CMX start up (FS and Enterprise).
2. The Database Settings windows texts are not translated when starting Beamex® CMX.
3. If User Defined Calibration Points was selected as Transfer Function then it should not be possible to open the instrument in Manual Entry or to send it to the Pocket PC before the "output points" are defined in the Calibration Procedure window.
4. When sending an instrument to Beamex® MC4 where the procedure has calibration point remark texts, the texts are not preserved when receiving the results from Beamex® MC4. The procedure was updated with empty strings in all remark fields.
5. The text "Pick from the list an Item to be viewed" was not translatable.
6. Default texts for Function and Procedure when receiving from Beamex® MC5 was not translatable.
7. Rounding of average (results) calculations was not following the same system as with the rest of the calibration results.
8. When the Beamex® MC4 calibrator is used for the first time windows will pop up install driver window automatically when you connect Beamex® MC4 to USB port. This driver was not in a logical place on the CMX Installation CD. Can now be found in "Drivers\MC4 Driver".
9. Some Beamex® MC5P Range names were incorrect on Beamex® CMX base database.
10. In Oracle database the CODE field values were returned in an inconsequent way (sort order) (requires Oracle option).
11. Skipping last calibration point in Beamex® CMX for Pocket PC was not possible (requires Pocket PC option).
12. Beamex® CMX hangs if automatic log out was on and Manual Entry window was left open.
13. If Electronic signature is on and a new Function template or Procedure template was added or Copy existing function template, Beamex® CMX asked for Electronic signature. No signature was saved in the database, but this dialog should not appear, because function template does not have electronic record in Beamex® CMX (requires Change Management option).
14. Position, device, function and procedure window header was not translatable.
15. If both Position and Device ID was empty in Beamex® MC4 -> CMX was generating a strange error message upon upload. Now Beamex® CMX gives a more descriptive error message.
16. Beamex® CMX does not support instruments with Pulse Counting. Beamex® CMX was generating a strange error message upon upload of this kind of instrument. Now Beamex® CMX gives a more descriptive error message.
17. Beamex® CMX wizard did not work in Korean Windows.
18. Resolution for MAXERROR_STRING variable was not correct in the Calibration Certificate.
19. Default Trigger Level for Switch instruments for Beamex® MC4 must be 1V.
20. Default Loop Supply for instruments calibrated with Beamex® MC4 must be 24V.

21. Fluke Communication failed in restricted user mode (requires Fluke option).
22. If a user was logging in with a non existing database selected an unhandled exception error message was generated.
23. Tab order in Device window was inconsequent.
24. New revision of the One Page Certificate (standard). One header for one of the Weighing Instrument tests was missing (requires Weighing Instrument Support option).
 - For upgrades this layout (One Page Certificate (standard) v2.5.lst) must be imported manually after the upgrade.
 - The new default One Page Certificate (standard) layout can be found on the Beamex® CMX Installation CD under “\Files\Report Layouts\SQL Server Default\Certificate” or “\Files\Report Layouts\Oracle Default\Certificate”. If the layout is translated then it can be in the Files\Languages folder sub tree.
25. Beamex® CMX server service did not start if the application event log was full (FS and Enterprise).
26. The Average curve was not shown correctly in the Calibration Result Graph.
27. When Host\Server: field in Beamex® CMX Server Service Manager/Tools/Database Connections../ is less than 7 chars and oracle provider was selected an error message was shown at start-up (FS and Enterprise and requires Oracle option).
28. Delete Certificate Button caption text was not translatable.
29. When the Remark field for calibration points was used for only some of the points in Beamex® MC4 the remarks was lost upon upload to Beamex® CMX.
30. In Oracle database some readings was returned so that it had some extra decimals at the end. This causes instrument to differ. Audit Trail showed same reading for before and after value (requires Oracle option).

Other Important Information:

1. When upgrading to Beamex® CMX revision 2.5 on installation were the MSDE (Microsoft Desktop Engine) is used as SQL Server the Microsoft SQL Server 2005 Express will be automatically installed. This makes it easier to migrate to the newer version of SQL Server. Just take a backup from MSDE database(s) and copy to the new Microsoft SQL Server 2005 Express by using the copy function in to Beamex® CMX Database Manager. See Installation/User Guides for more information.
2. Most likely the support for Microsoft Windows SQL Server 2000 and MSDE will cease from next release of Beamex® CMX
3. Most likely the support for Microsoft Windows 2000 will cease from next release of Beamex® CMX

- END OF 15TH RELEASE NOTE -

14th Release Note

Release date: 2nd December 2008

Version 2, Revision 2.4.2X4.0 (X is depending on Beamex® CMX product)

Only the Beamex® CMX Calibration Software (Client) revision has been updated (No need to upgrade the Beamex® CMX Server if the revision 2.4.124.0 is already installed).

The following improvements have been included into Beamex® CMX Enterprise and Beamex® CMX Professional (FS):

1. With large databases, an error message might appear when the database is converted. This error message is connected to the Loop Supply field. This issue is now fixed.
2. When trying to add a User with the same User ID as an already existing user, two error messages were shown. Now only one error message is shown.

- END OF 14TH RELEASE NOTE -

13th Release Note

Release date: 31st October 2008

Version 2, Revision 2.4

The following improvements have been included into CMX Enterprise, CMX Professional:

1. Communication driver for New Beamex MC4 Process Calibrator.
MC4 is a compact-sized documenting process calibrator. MC4 is suitable for calibrating various parameters, such as pressure, temperature and electrical signals.
2. New Calibrator Communication Interface architecture, which allow easier calibrator driver development and less validation effort when installing new driver. Interested to connect your documenting calibrator to CMX? Please contact Beamex for more information (info@beamex.com).
3. New User Defined Transfer Function for manual entry. User can define target output value for each calibration point and output error is calculated according to given target value. Formula: Output Error = Measured Output - Target Output.
4. Two new users setting that will display nominal calibration values and/or previous calibration values on Manual Entry screen. Decrease time you normally use to type in calibration results.
5. User can define recommended calibrators to use for calibration. Typically calibrator accuracy should be four times better than the instrument. This new function will help user to pick up right calibrator for the job. CMX give a warning message when sending instruments to non-recommended calibrator and Manual Entry and Pocket PC will display only recommended calibrators.
6. Now you can print and design hard copies of audit trail records. NOTE! Design requires report design option.
7. Report design option offers few new things. Now it is possible to design Cover Page for Calibration Certificates. There is also new set of variables to add on your reports to improve printing of decimals on each calibration point.
8. Now it is possible to add new calibrators and weighing sets from another CMX database. To do that you need a Pocket PC interface option.
9. When printing multiple calibration certificates at same time CMX will now reset the number of total pages between different certificates (different certificate number).
10. Previous Pocket PC interface version was overloading device memory when sending more than 50 instruments from CMX database to Pocket PC device. Now Pocket PC interface architecture has been improved and allow user to send 100 instruments.
11. Pocket PC interface option is now able to display previously added weights on weighing pan when performing linear up and down weighing test. This will speed up documentation process.
12. Average only checkbox added to calculate average results for loop components on reports. NOTE! To be able to see check box you need to activate "Show average results" setting.
13. New end user setting when showing calibration results: "Additional Uncertainty Decimals". Default value will be empty and that means that it works like in previous CMX versions (= uncertainty is displayed max 5 decimals), 0

means that uncertainty got the same number of decimals as the calculated error, 1 means that the number of uncertainty decimals is one more than for the error, and etc...

14. New end user setting for Weighing Instrument option: "Format results according to d/e values". Example: d1-d4 can be 1, 2, 5, 10 and multiples of those values, e.g. 0.01, 0.02, 0.05, 0.1, that means that it is the smallest "step" that the Weighing instrument can show in the corresponding range. Input value (weight), output (display reading) and calculated error will be formatted according to d-value when this option is used.
15. New network speed indication will help user to determine company network speed between CMX client and database. NOTE! CMX Recommended Bandwidth > 10MB. Recommended Ping time < 1 ms
16. Windows Vista is using slightly bigger font than older Windows versions, this was causing some unexpected behaviour in CMX, now this issue has been fixed.
17. CMX Professional with Floating Server Licenses (optional feature) and CMX Enterprise had some issues with Windows Vista UAC (User Account Control) turned on, now this issue has been fixed.
18. New strong SA password is used to secure SQL Server database platform. NOTE! Strong password concern only new CMX installation.

- END OF 13TH RELEASE NOTE -

12th Release Note

Release date: 14th August 2008

Version 2, Revision 2.3.3

The following issue have been fixed on CMX Professional:

If calibration was performed on same day when Position turned to yellow (Due within period) the automatic Due Date calculation failed and left Position yellow. This issue is now fixed.

- END OF 12TH RELEASE NOTE -

11th Release Note

Release date: 28th November 2007

Version 2, Revision 2.3

The following improvements have been included into CMX Enterprise, CMX Professional:

1. Added communication to new Beamex MC4 calibrator. NOTE! The MC4 calibrator will be available year 2008.
2. When sending instruments to new MC4 calibrator, there is a possibility to include the plant structure in sent instruments.
3. "Allow receiving Calibration Results without updating instrument data" option added in calibration options. CMX gives a message (yes/no/cancel) for a user to receive calibration results for the instrument without updating the database when differences are spotted.
4. Support for some temperature sensor types has been improved (e.g. pt-46, cu-53). This improvement concerns Beamex documenting calibrators.
5. Recording future calibration date is now denied.
6. Now Pocket PC option require user to select calibrator when setting "Calibrator reference required when saving calibration" is set ON.
7. Now the MC5 driver selects the FI5 module when output method is FOUNDATION H1 or PROFIBUS PA.
8. Audit trail entry is created when automatic database conversion is performed during version/revision upgrade (require change management option).
9. Next Due Date was calculated wrong when Due Within were set 30 Days and Calibration Period were set to one Month. Now Due Date calculation has been improved.
10. Instrument sent to documenting MC5 calibrator with input/output method Keyed/Keyed and Acceptance set to Automatic generated some issues when receiving the results. Now the functionality has been improved.
11. Additional variables available for the reports. New variables: Weight Set Traceability Document, Weight Set Calibration Date, Weight Set Manufacturer, Weight Traceability Document, Weight Calibration Date, Weight Manufacturer, Weight Calibration Laboratory, Weight Module Model, Weight Serial Number, Input Uncertainty,

Output Uncertainty, Total Uncertainty.

NOTE! Some of these new variables require Report Design and Weighing Instrument options.

12. The weighing instrument nominal points on reports are now separated into four different variables. They used to be on one. NOTE! Utilizing these new variables require Report Design and Weighing Instrument options.
13. Editable k-value in Weighing Instrument's Minimum Weight Test. NOTE! Require Weighing Instrument option.
14. When uncertainty calculations are activated, the calibration result graph includes uncertainty bars for each calibration point.
15. User permission has been extended to cover also document links. NOTE! When upgrading this new permission is set ON for all existing user groups during the database conversion.
16. Rounding of the maximum error for calibration result window, printed calibration certificate and printed history trend has been improved. Now they all show the same value for the last decimal.
17. Under special circumstances some of the test points sent from CMX appeared incorrectly in the Beamex MC5 calibrator. Now this has been corrected.
18. When detecting documenting Beamex calibrators in the calibrator window the detected calibrator will be automatically selected in the tree view, and also the calibrator node is opened and all the modules are shown.
19. Dragging a node from the Plant Structure to the Position Set, all the underlying instruments are copied to the selected set.
20. Number of decimals for linear nominal points on reports is now correct.
21. It was possible to perform manual entry for a position without approval (require change management option). Even though this was blocked in the option settings. This was possible if you modified the calibration procedure and did not refresh the position list. Now corrected.
22. It was not possible to create a calibrator for masses using SI-units when weighing instrument option was utilized (require weighing instrument option). This is now corrected.
23. Users with view only access were able to approve audit trail entries. Now CMX rev 2.3 deny audit trail approvals for view only users (require change management option).
24. In some circumstances MPE limits in graph were shown incorrect for weighing test (require weighing instrument option). Now corrected.

25. Supervisor's account cannot expire. This was an undocumented rule. Now this rule is documented in CMX user guide.
26. In some circumstances CMX server started in limited evaluation mode even though the license key was present. This concerned only CMX Professional with floating license option and CMX Enterprise. Now this has been improved.
27. Changing single calibration point was not registered in audit trail (require change management option). Now corrected.
28. When receiving results from a documenting calibrator and a change for the instrument is discovered the calibration interval was sometimes converted from 12 months to 365 days. Now this has been improved.
29. Reference for a weight set (calibrator) or a weight (calibrator module) was shown only for current calibration record and was missing from the calibration history. Now CMX rev 2.3 records these references also for the calibration history.
30. When "Calibrator reference required when saving calibration" is enabled CMX do not require output reference for indicators (output category is analog readout or digital readout).
31. When calibrator module calibration date is empty it is not updated during auto detect function like it was previous CMX versions.

- END OF 11TH RELEASE NOTE -

10th Release Note

Release date: 19th March 2007

Version 2, Revision 2.2

New names for CMX products is presented

CMX for Workstation is now CMX PROFESSIONAL.

CMX for Server is now CMX PROFESSIONAL with floating server license option.

CMX Product family has also two new family members:

- CMX LIGHT, Easy-to-use calibration software for a single workstation.
- CMX ENTERPRISE, All-In-One Calibration Solution for large corporations.

New CMX PROFESSIONAL and CMX ENTERPRISE offer following improvements for the software functionality:

1. Check Out functionality improved. Previous revision allowed two different users to open the same position with manual entry. This is no longer possible.
2. Graph scaling for switches improved.
3. The resolution for History Trend graph is improved.
4. Previous revision didn't show the second person involved for switch calibration. Now corrected.
5. Manually entered calibration certificate number was not saved for switches. Now corrected.
6. Valid only for weighing instrument option. Weight set selection for weighing instruments improved. Now manual entry table remember previously selected weights in the weight sets.

7. Valid only for weighing instrument option. In some situations pass / fail indication for weighing instrument was not operating as designed. Now corrected.
8. Valid only for weighing instrument option. MPE limits in graph were shown incorrect for weighing test. Now corrected.
9. RJ Temperature field was shown even if it was hidden. Now it appears only for temperature instruments with thermocouple sensor type having RJ Mode defined.
10. Functionality of SQL editor in filters has been improved. Now SQL editor is cleared when new button is pressed.

Upgrade procedures

Please have a look at installation CD and installation guide located in documents folder.

NOTE! To see improvements made in previous releases, please have a look at previous release notes included in this document.

- END OF 10TH RELEASE NOTE –

9th Release Note

Release date: 18th December 2006

Version 2, Revision 2.1

New CMX revision 2.1 offer Improvements for the CMX functionality:

1. Additional Weighing Instrument support for PC and Pocket PC interface.

This option allows recording calibration results for Weighing Instruments.

Weighing Instrument Calibration feature is based on:

- OIML international recommendation OIML R 76-1: 1992 (OIML = Organization Internationale de Métrologie Légale or International Organization of Legal Metrology).
- European standard EN45501:1992 + AC:1993
- NIST Handbook 44 – 2004 / 2.20. Scales (NIST = The National Institute of Standards and Technology, US)
- EA-10/18 EA Guidelines on the calibration of non-automatic weighing instruments (EA = European co-operation for accreditation).

The option contains required tests like:

- Eccentricity test
- Repeatability test
- Weighing test
- Minimum Weighing Capability test

2. Communication support for new Beamex MC5 Fieldbus calibrator.

3. New CMX revision allows saving your private and public database filters. These filters are available whenever the system is used.

Other improvements for the filters:

- Finding "empty" fields
- Authorized person can create advanced filters with SQL editor (e.g. AND/OR, <>, <, > operators can be used)

4. New version of optional report design tool.

- Simplifying the Designer, to make it easier for users
- Page numbering has been improved

5. Audit Trail improvements.

- When exploring AT via electronic signature, AT show only related records and not all AT records

- Minor changes to AT architecture. AT records are now saved at the same time as the database record (the data). This way all changes are written to AT even if network errors occur.

6. Several Manual Entry windows open on same PC allow entering multiple calibration results at same time. E.g. Calibration of multiple temperature sensors is easier.

7. Position Check Out/Check in functionality.

- User is able to Check Out position for calibration or modification
- Check out is indicated for other users and checked position can not be used by other users

8. Used calibrator can be defined manually when receiving keyed calibration results from Beamex calibrators.

New CMX revision 2.1 offer Improvements for the CMX technology:

1. Updated software development tools.

- Updated standard database platform SQL Server 2005 Express makes system faster and easier to maintain
- Updated development tools offer excellent support for future operating systems like Microsoft Vista

2. Architecture improvements (apply to CMX for Server version only).

- Database processing moved from server to client. Architecture improvement increases CMX server performance and speed up CMX operations.

CMX for Workstation, Upgrade procedures

Database components:

1. Enter the computer where the CMX database is running.
2. Set the CD on the computer. Installation should start automatically. If not, start "CMX_Install.EXE" from the CD.
3. Follow instructions on the screen when "Select Installation Type" screen appears.
4. Select "1. Calibration Database" and deselect all other alternatives.
5. Follow instructions on the screen.

Software components:

1. Enter the computer where the CMX software is running.
2. Set the CD on the computer. Installation should start automatically. If not, start "CMX_Install.EXE" from the CD.
3. Follow instructions on the screen when "Select Installation Type" screen appears.
4. Select "2. Calibration Software" and deselect all other alternatives.
5. Follow instructions on the screen.

NOTE! When database and software are running on the same computer please select both "1. Calibration Database" and "2. Calibration Software" at the same time.

CMX for Server, Upgrade procedures

Server:

1. Enter the computer where the CMX Server software is running.
2. Stop the CMX Server.
3. Set the CD on the computer. Installation should start automatically. If not, start "CMX_Install.EXE" from the CD.
4. Follow instructions on the screen when "Select Installation Type" screen appears.
5. Select "2. CMX Server" and deselect all other alternatives.
6. Follow instructions on the screen.

Client:

1. Enter the computer where the CMX Client software is running.
2. Stop the CMX Client.
3. Set the CD on the computer. Installation should start automatically. If not, start "CMX_Install.EXE" from the CD.
4. Follow instructions on the screen when "Select Installation Type" screen appears.
5. Select "3. Calibration Software (client)" and deselect all other alternatives.
6. Follow instructions on the screen.

CMX Pocket PC Interface, Upgrade procedures

1. Enter the computer where Microsoft ActiveSync is running.
2. Connect your Pocket PC unit on the computer. Make sure that CMX Pocket PC interface is not running on the unit.
3. Set the CD on the computer. Cancel the Installation if it starts automatically. Browse the CD and open "Pocket PC" folder. Start "Setup.exe" from the CD.
4. Follow instructions on the screen.

- END OF 9TH RELEASE NOTE -

8th Release Note

Release date: 10th October 2005

Version 2, Revision 2.0

New CMX V2 revisions offer minor improvements for following Beamex software products:

1. CMX for Server
2. CMX for Workstation
3. CMX Pocket PC interface

1. CMX for Server

Revision 2.0.724.0

Improvements

- Previous CMX version was generating an error message if Edit and Save buttons were pressed frequently on the same client or on different clients at the same time. Even when error message were set off it was still causing unexpected behavior in different parts of CMX application. This is now fixed.
- Automatic client log off was not working as expected. This is now fixed.
- CMX document printing, adding calibrator module and optional report designer stop operating when CMX Server was running on computer with 64-bit processor and utilized database platform was Oracle. This is now fixed.

Upgrade Instructions

CMX for Server is a software product that complies with the most demanding IT requirements. It offers distributed IT structure to share database and licenses globally within company network.

CMX for Server has three components:

1. CMX Database
2. CMX Server
3. CMX Client

Typically components 1 and 2 are installed on shared server e.g. Microsoft Server 2003 and component 3 is installed on client workstation e.g. Microsoft Windows XP.

Upgrading from CMX Server V2.0.

Improvements implemented in this revision 2.0.724.0 apply only to CMX Server (component 2). So only CMX Server components require upgrade.

Upgrade procedures for CMX Server components

1. Enter the computer where the CMX Server is running.

2. Stop the CMX Server.
3. Set the CD on the computer. Installation should start automatically. If not, start "CMX_Install.EXE" from the CD.
4. Follow instructions on the screen when "Select Installation Type" screen appears.
5. Select "2. CMX Server" and deselect all other alternatives.
6. Follow instructions on the screen.
7. Reboot the computer.

Upgrading from CMX Server V1.14 or older

Improvements implemented in this revision 2.0.724.0 apply to CMX Server (component 2) and CMX Client (component 3). So both CMX Server and CMX Client components require upgrade.

Upgrade procedures for CMX Client components

1. Enter the computer where the CMX Client is running.
2. Stop the CMX Client.
3. Set the CD on the computer. Installation should start automatically. If not, start "CMX_Install.EXE" from the CD.
4. Follow instructions on the screen when "Select Installation Type" screen appears.
5. Select "3. Calibration Software (client)" and deselect all other alternatives.
6. Follow instructions on the screen.
7. Reboot the computer.

2. CMX for Workstation

Revision 2.0.714.0

Improvements

- CMX document printing, adding calibrator module and optional report designer stop operating when CMX Workstation was running on computer with 64-bit processor and utilized database platform was Oracle. This is now fixed.

Upgrade Instructions

CMX for Workstation is a software product for small organizations offering a single workstation license and shared database.

Improvements implemented in this revision 2.0.714.0 apply only to CMX workstation meaning that only CMX Workstation components require upgrade.

Upgrade procedures for CMX Workstation components

1. Enter the computer where the CMX is running.
2. Set the CD on the computer. Installation should start automatically. If not, start "CMX_Install.EXE" from the CD.
3. Follow instructions on the screen when "Select Installation Type" screen appears.

4. Select "3. Calibration Software (client)" and deselect all other alternatives.
5. Follow instructions on the screen.
6. Reboot the computer.

3. CMX Pocket PC Interface

Revision 2.0.334.0

Improvements

- Previous CMX Pocket PC interface were listing some non-supported sensor types. CMX Pocket PC interface stopped operating if any of these sensor types were selected. Non-supported sensor types are no longer listed.

Upgrade Instructions

CMX offer Stand-alone Pocket PC interface, which allows manual data entry on site.

Improvements implemented in this revision 2.0.334.0 apply only to Pocket PC meaning that only Pocket PC components require upgrade.

Upgrade procedures for CMX Pocket PC components

1. Enter the computer where Microsoft ActiveSync is running.
2. Connect your Pocket PC unit on the computer. Make sure that CMX Pocket PC interface is not running on unit.
3. Set the CD on the computer. Cancel the Installation if it starts automatically. Browse the CD and open "Pocket PC" folder. Start "Setup.exe" form the CD.
4. Follow instructions on the screen.

- END OF 8TH RELEASE NOTE -

7th Release Note

CMX version 2

Version 2

Release date: 19 August 2005

The new version of CMX calibration management software introduces new options, features and benefits for calibration management.

Calibration management goes mobile with CMX v2. The CMX v2 allows the user to computerize the entire calibration system making it completely paperless. This is possible due to "Smart" Calibrator Communication and the New Pocket PC Option, which allows the use of a PDA for manual data entry on site.

The New History Trend Option makes analyzing the instrument's drift over a certain time period possible. Based on this information, you are able to make decisions and conclusions concerning the optimal calibration interval and the quality of the instrument. The new standard features increase possibilities, add flexibility and facilitate the use of CMX even better.

Two new options and many new standard features

Pocket PC Option

- Stand-alone Pocket PC software, which allows manual data entry on site.
- Downloads multiple work orders together with required settings, test procedures and routines.
- Shows predefined instructions and actions before test, while testing and after test.
- Stores all test results as found and as left, together with used reference.
- Tracks environmental information, time stamp, user information and notes for multiple tasks.
- Automatically calculates located errors for each test point.
- Automatic "out-of-tolerance" detection with pass/fail indication.
- Uploads all test results and notes to central database.

History Trend Option

- Summary of all calibrations made for an instrument.
- Numerical and graphical display of the instrument's drift over a certain time period.

New Standard Features

- Expanded Reporting possibilities. New calibration Certificate, Report and History Trend document templates to print out as PDFs or paper copies. NOTE! Utilizing new templates, please import them to your existing database from installation CD. New templates are found in the path: ..\Files\Report Layouts
- Possibility to store Function and Procedure templates for later use.
- User rights for Plant Structure, Positions, Devices and Calibrators.
- Expanded Uncertainty calculation.
- Average Error, Standard Deviation and Uncertainty for calibration repeats.

Improvements

- New on/off setting that denies calibration to non-approved positions, devices or loops.
- Function for fixed calibration date has been improved.
- Now calibrator references are in alphabetical order when performing manual entry.
- Closing database connections has been improved.
- User Interface modifications are recorded Audit trail (require change management option).
- User fields are available in Manual Entry.
- The missing MC5P calibrator modules PM250 and PM600 have now been added to the database. Database conversion will automatically add these modules for those who are upgrading their CMX.

- END OF 7TH RELEASE NOTE –

6th Release Note

CMX Revision 1.14

Release date: 11th of February 2005

Improvements

- Possibility to filter:
 - Approved/not approved positions, devices and calibrations.
 - Signature status.
 - Latest calibrations or whole calibration history.
- Communication driver improvements:
 - Possibility to send 20 bar and greater instruments for Beamex PC106 and PC106P calibrators.
 - Possibility to receive only one instrument at a time with Beamex PC106, PC106P, TC305 and TC305P calibrators (previous versions supported only to receive all or nothing).
 - Creating new instruments through MC5 HART option into CMX database: Created new CMX record match now 1:1 with HART device information. NOTE! Requires latest MC5 firmware v1.97 or newer.
 - Some minor improvements for non-Beamex calibrators.
- Enlarged width for calibrator and module selection columns in manual entry screen.
- Calibrator and module selection is now in alphabetical order in manual entry screen.

- END OF 6TH RELEASE NOTE -

5th Release Note

CMX Revision 1.13

Release date: 6th of October 2004

CMX for Server Improvements

- CMX Application server runs as a Windows service. To run CMX application server does not require a user to be logged in the network server.
- CMX Application server support parallel databases. Meaning that multiple users (clients) are able to log in to different database at same time.

CMX for Workstation and Server Improvements

- CMX automatically synchronize shared Position and Device information.
- Double clicking on Note field will open registered Notepad to show or print field content. Note! Content editing on Notepad do not save it to CMX database.
- Absolute error values are available for reports. Note! Report design option is required to add values to report layouts.
- One extra text field "Calibration Strategy" added for procedure.
- Support for new low-pressure module 10mD for MC5 calibrators.
- Counter for Position and Device list. Counter indicates amount of records on the list.
- Possibilities to add direct Internet links to document links.
- Predefined notes for each calibration points are shown when Manual Entry is used for calibration.
- "All repeats" option added to print all performed calibration repeats on same report.
- Minor improvements for report designer option. Note! Report designer is one extra option for standard CMX.
- Description for plant structure levels can be added on printed documents. Note! Report design option is required to add description to document layouts.
- On-line help that gives description for all available variables in report designer option.
- User notification if user tries to calibrate inactive instrument.
- User notification during downloading if instrument has been changed since it was uploaded into Beamex MC-family calibrator. User can cancel or accept changes and update instrument in database.
- Sorting Audit Trail records. Note! Change Management including Audit Trail is one extra option for standard CMX.
- Support to upload temperature instruments to Beamex MC-family calibrators without sensor type definition.
- CMX status bar indicates the active database name.
- Support for Microsoft .NET Framework 1.1 Service Pack 1.

- END OF 5TH RELEASE NOTE -

4th Release Note

CMX Revision 1.12

Release date: 31th of May 2004

Improvements

- Nominal calibration points are available for report and label templates.
- User Group permission changes are recorded into Audit Trail.
- Test points were saved incorrectly (test points were saved always as “fixed” and “calculated form output”) when new instrument was received from calibrator. Now they are saved as they were defined in calibrator.
- Document templates - reject error value and unit was shown incorrectly for all other units excluding “% of Span”. Now corrected.
- Reference sensor behaves like a regular calibration module. Previous CMX versions caused problems when starting manual entry.
- Certificate, label and report template names are sorted alphabetically.
- Dead band value for switch is formatted according to the set/reset point's maximum resolution.
- Some cosmetic 3D improvements for user Interface.
- Scroll bar improvements for position and device sets.
- Calibrator module range:
 - RJ mode dropdown list is visible only if TC sensor is selected.
 - Unit correction for TC305 temperature specs (mV, ohm).
 - TC305/TC305P A-module's measurement specs: unit changed from A to mA
 - Pt100 specs corrected for MC-family calibrator specs and therefore uncertainty and specs are recalculated for calibration history

Known issues

- Subordinate windows like calibrators, wizard randomly flips behind the main CMX window. Behaviour is related to used operating system (Windows NT/2000/XP) and it seems to appear especially when CMX on-line help is active. Beamex development team continue searching alternative correction and it will be published immediately when solution is found.

- END OF 4TH RELEASE NOTE -

3rd Release Note

CMX Revision 1.11

Release date: 8th of April 2004

Improvements:

- **Increase productivity and clone (copy) your data.**
 - CMX offers cloning of existing positions, loops or devices.
 - Simply add a unique ID. Everything else is cloned from your original record.
 - Cloning significantly decreases the time you spend on populating the database.
- **No more unnecessary navigation when accessing the department.**
 - At start-up CMX remembers the part of plant (drop down list) you previously selected.
 - This will help to access the work orders of your department without browsing through the whole plant structure.
- **More flexibility – Less frustration.**
 - The amount of levels shown in the plant structure (drop down list) is now user configurable. This makes navigation easier and faster.
 - The amount of records shown in a tree structure is user configurable. This increases the usability of large databases. E.g. in a database with 300 000 records, CMX may be configured to show 5000 records at a time. Of course all 300 000 records are available for filtering and calibration even if they are not shown.
 - These new configurable features make CMX more easy to use.

Minor Improvements:

- On-line help added for report design option.
- Calibration result properties (environment, device etc.) are now shown with max. two decimals.
- Printing document link now shows document path and document name. Previous versions were printing some XML information together with the document path and document name.
- Default or imported certificate, report or label layout files can be deleted without report design option.
- Electronic signature table is now available for certificate templates.
- Saving switch calibration failed in previous CMX versions when Windows system settings were set for U.S. This is now corrected.
- When incorrect electronic signature is given the user is locked out after the prescribed number of attempts.
- Calibrators - module create section using the 'New' option in the dropdown worked incorrectly. Now corrected.
- Duplicate "nodes" in the plant structure is no longer possible.

- END OF 3RD RELEASE NOTE -

2nd Release Note

CMX Version 1.10

Release date: 8th of March 2004

CMX is now available in two versions:

- **CMX for Server.**
 - The software is activated by one and the same license key on the server, allowing database sharing and licenses for multiple users within the same network.
 - CMX application server components are installed on the server. CMX user interface and calibrator drivers are installed on each workstation PC.
 - Server architecture offers scalable implementation and easier and faster way to keep system up to date.
- **CMX for Workstation.**
 - The software is activated by one license key on each independent workstation PC, within the same plant site.
 - All CMX application components are installed on each workstation PC.
 - The database can be installed on the workstation PC or on the network server.

Both the Server and the Workstation versions include several new features:

- CMX now supports three database platforms:
 - MSDE 2000 (SQL Server 2000 desktop engine is a royalty free database platform that is included in CMX package)
 - SQL Server (requires separate license from Microsoft)
 - Oracle (requires separate license from Oracle)
- Unlimited amount of approvals for calibration results (concerning only CMX versions without change management and electronic signature option).
- Calibration of inactive position and device is prohibited.
- Calibration date and recalibration date for Beamex "smart" calibrators are updated automatically when calibrator starts communicating with CMX.
- Settings allow user to define separator for plant structure.
- Variables for nominal calibration points and plant structure are available for documents (certificates, reports and labels).
- Label printing for non-installed devices is possible.
- Change management and electronic signature option allows to jump straight to correct audit trail record simply by clicking AT number on electronic signature.
- Database refresh function (F5) added for calibrators, users and manufacturers maintain.
- All temperature and environment data found on the last calibration repeat's conditions tab are copied to the next calibration repeat within the same calibration event.
- Reject error, adjust if error, don't adjust if error and adjust to error can be left blank when defining calibration procedures. When calibrating using CMX's manual entry the position or device having this kind of calibration procedure, CMX consider all repeats as passed.

Improvements

- Variable for current approval/electronic signature is now available for printed calibration certificate.
- Calibration result graphics resolution and colour indication has been improved.
- Communication with Beamex “smart” calibrators now operates with restricted user profile (operating system user profile).
- Electronic signature dialog caused unexpected delays for other logged users in previous versions. Now corrected.
- New user account can't be created without password.
- Data validation for adding plant node is improved. Empty or already existing node can't be added.
- Mouse right click allow removing object (position/device) from set.
- Active database filter is highlighted better.
- Description for document link has been increased to 2000 letters.
- If no error limits are given, the calibration results graph will be scaled according to the test points.

- END OF 2ND RELEASE NOTE -

1st Release Note

CMX Version 1.0

Release date: 24th October 2003

CMX CALIBRATION MAINTENANCE MANAGEMENT SOFTWARE

CMX represents the 3rd generation of Beamex software products, providing spearhead solutions for the calibration and maintenance of process instruments. CMX complies with the requirements of the ISO 9000 and ISO 14000 series of quality standards, as well as the FDA regulations.

Management of instrumentation

The functionality of CMX includes multilevel plant structure, scheduling of calibration and maintenance work, maintaining calibration procedures, communication with calibrators, storing results both for current and past calibrations, documentation of results in the form of calibration certificates, reports, labels, etc.

Versatile calibrator communication

CMX features communication both with portable calibrators and calibration stations. Calibration procedures are downloaded to the calibrators, which guide the user through the calibration event.

Automated procedures

CMX works together with communicating calibrators with functions to run automatic calibrations of pressure, temperature and electrical instruments. The calibrators record the calibration results, which are uploaded to the software.

Easy and efficient

The multilingual browser type user interface makes it very easy to use the CMX software, maximizing the efficiency and minimizing the learning time. Database creation is helped by Wizard functionality.

Features

CMX offers numerous practical features, such as:

- Loop / Position / Device calibration
- As Found / As Left calibration
- Automatic error calculation and pass/fail detection for calibrations
- Multiple results for one event (repeats)

- Forward / Reverse traceability for loops, positions and devices
- Multiple functions for loops, positions and devices
- Spare devices for loops / positions
- Uncertainty calculation of performed calibration
- History Tracking for records
- Test sets and alert help you to control and schedule work flows
- Documentation (certificates, reports, labels, procedures, etc.)
- Dynamic links to external files (SOP's, procedures, pictures, Internet link to manufacturer, etc.)
- Client – Server architecture offers multiuser scalability and control
- Data exporting (Excel, RTF, HTML, PDF, ASCII, JPEG, XML etc.)
- Inactivation of postponed references, standards, loops, positions and devices
- User tracking (e-mail, phone, mobile, link to external training records)
- Browser based record navigation user interface
- Multilingual and adaptable user interface
- Mass update for records through pick-up lists
- Security system complying with 21 CFR part 11
- Change Management and electronic signature option for critical data (21 CFR part 11)
- Audit Trail option for records (21 CFR part 11)
- On-line help
- Take advance of powerful Microsoft SQL Server 2000 Desktop Engine database
- Built on the latest Microsoft .NET technology

CMX licenses are available for:

- **CMX for Workstation:** The Software is activated by one license key for each independent workstation PC within same plant site.
- **CMX for Server:** The Software is activated by one and the same license key on shared server, for multiple users within the same network.

Beamex Service and Support

Beamex worldwide Support Centers and Representatives ensure safety for all users of Beamex systems. Our extensive service includes:

- Implementation and training
- Validation workbook to help in complying with the quality requirements
- Validation service
- Recalibration with accredited calibration certificates
- Software Service Agreement (see below) with Help Desk and free upgrades

Software Service Agreement

The annual Software Service Agreement (SSA) for CMX Calibration Maintenance management software provides you with the following:

- **Maintenance:** The agreement entitles you to get automatically free version upgrades during its validity. The agreement covers both the Software and its optional licenses purchased.
- **Help Desk support:** Help Desk support is also available when implementing or using the Software. The service is provided free of charge during normal business hours, excluding Customer's telephone and other expenses. On-site implementation, training and support are available at separate cost.

- END OF DOCUMENT -