IVS-Professional 4.6

Release Notes for IVS-Professional

Version 4.6 – Released 03/26/2024

Please note that these release notes are not entirely complete. New feature might have been added and bugs might have been fixed that are not included in these notes.

New features

- The properties dialog has been updated. It now supports setting the properties of multiple selected objects at once, even if the objects are of different types. If a property is the same for all selected objects, that property will be filled in in the properties dialog box. If a property differs across the selected objects, that property will not be filled in. As long as you do not modify a property, all selected objects will keep their original setting for that property. If you do modify a property, that property will be set for all selected objects. If you click the OK button, any modified properties will first be applied to all selected objects, and then the dialog box will be closed. If you click the Apply button, which will only be enabled if you modified any property, the modified properties will be applied to all selected objects. If you click the Cancel button, the dialog box will be closed without applying any modified properties. If you press the ⎇ key, the Cancel button changes into a Reset button. Clicking the Reset button will reset all modified properties back to the state they had when either you last clicked the Apply button, or when the properties dialog box was opened.

- The same is true for the text edit dialog. You can now select multiple text objects (either question, answer, text or field) and edit the text formatting for all selected objects at once. If the selected objects contains different texts, you can only edit the formatting and not change the text itself. Only if the selected objects contain the exact same text, you can also change the text itself. The dialog also has an Apply button to apply the changes without closing the dialog. And if you press the ⎇ key, the Cancel button changes into a Reset button, to reset the modifications back to the state they had when either you last clicked the Apply button, or when the dialog box was opened. To make all this possible, the order for creating new objects has changed a little. When you insert a new question, answer or text, the object is first inserted into the slide and then you can enter the text for it. If you click Cancel, the object will be removed again. However, if you clicked Apply once and then click Cancel, the object will stay.

- A Lite Base Station can now also be shared on a network. This requires an additional server application, that is included in this release. The Network Base Station Locator tool is now also able to detect these shared Lite Base Stations, and can link them to a serial port. A new communication plugin is included that can be used to communicate with these Network Lite Base Stations. This plugin, nor the server application, are installed by default.

- The Configure IVS-Online Connection wizard has an extra option for online scripts that use identified voting. You can now allow a user to act as a proxy for another user. After logging in with his own credentials, the user can also log in for at most one other user, and can then vote on both his own and the other user's behalf.

Minor changes

- The Preferences dialog box did not respond to the Escape key if you wanted to cancel the dialog.
- A new option has been added to the Edit tab of the Preferences dialog. If you enable the 'Only select fully contained controls' option (which is the default), then, when you draw a selection rectangle around objects, only those object that are fully contained within the selection rectangle are selected. If you disable this option, then all objects that are only partly covered by the selection rectangle are selected. You can always temporarily invert this behavior by pressing the ⌗Shift⌗ key while drawing the selection rectangle.
- When duplicating Participant or Score fields, the participant index is automatically increased for the duplicate. This means that when you duplicate a Participant field that refers to participant 1, the duplicate will automatically refer to participant 2. And also when you duplicate a Score field that refers to participant 1, the duplicate will refer to participant 2. Only when the original Score field refers to participant 0, the duplicate will still refer to participant 0, but now the group index will be increased. If you don't want the fields to be updated, you can use the key combination ⌗Shift⌗ + · + ⌗Alt⌗ + ⌗D⌗ instead. Or you can permanently disable updating fields on the Edit tab of the Preferences dialog. If you permanently disable it, you can still use the key combination ⌗Shift⌗ + · + ⌗Alt⌗ + ⌗D⌗ to temporarily enable updating fields again.
- When the Show Field Settings option is enabled, each field displays its settings as they are used internally by the field. For a Score field, the participant's index starts at index 1, where index 0 has the special meaning of 'all participants'. For a Participant field, however, the participant's index starts at 0, where 0 means participant 1, and 1 means participant 2. This could be rather confusing, so the Participant field now displays index 1 for participant 1, just like the Score field does.
- The info dialog, that is displayed when initializing keypads, loading keypads from a list or testing the network, has been updated. It is a little bit bigger, has a header bar at the top that better indicates what the Base Station is currently doing, and also indicates what channel the Base Station is currently operating on.
- Support for the RF-I Base Station and CC25 has been removed.
- Support for the RF-I keypad has been removed from the RF-II Base Station. If you use an RF-II Base Station, you can now only use RF-II keypads. The communication wizard therefore no longer asks you which keypad type you want to initialize.

Bug fixes

- If you double-clicked a text object (either question, answer or text) with a text containing different font sizes, the font size would be reset to the font size of the first character.
- A minor change in the previous version, where the autostore keypad list file was no longer stored as the last keypad list file used, turned out to have a negative side-effect. If you loaded a keypad list,

then initialized some extra keypads without saving the keypad list yourself, and then closed and restarted the application, you were offered to load the last used keypad list. This is intended behavior, however, the last used list that was loaded, was the original keypad list, and not the autostore file containing the extra initialized keypads. Therefore, this change is partly reverted, so that the autostore keypad list can be loaded again, but it will not be offered as a suggestion when you manually load or save a keypad list.

- If you tried to insert an image and selected a file that had the correct file name, but the file itself was empty, the application would be terminated without any warning.
- When quickly inserting objects, for example a range of answers without any text, the entire slide could temporarily disappear, leaving only a gray window.
- When a script was opened that uses a custom screen resolution, the Preferences dialog did show that a custom resolution was set, and also did show the correct resolution, but the edit boxes for the resolution were disabled.
- Under some circumstances, the application could throw an error when it was closed with a still active connection to IVS-Online.

Version 4.5.9 – Released 10/09/2019

Minor changes

- The font combobox, used in the text editing window, filled in the font list twice, which took an unnecessarily long time, especially if you had a large amount of fonts installed.
- That same font combobox now has a little delay built in, so that when you start typing, not every single font that is selected by the auto-complete function, is actually applied to the selected text.
- That is also true for the font size combobox. Besides, the font size combobox no longer accepts invalid characters, it also allows you to select sizes if multiple fonts are selected, and the drop down list shows more sizes, so that you don't have to scroll the list.
- If you close a script while the voting is still open, a warning is displayed, asking you if you are sure to also close the voting.
- If a presentation is started and is displayed on the same monitor as the script, it will no longer appear in the Windows taskbar and in the Alt-Tab menu. Also, clicking the taskbar button will now bring up the presentation screen rather than the script. This is to prevent you from accidentally switching to the script window, where most of the options are unavailable as long as the presentation is running.
- Updated IVS-Card Link and IVS-Participant Registration to also support the new HID Global/Omnikey CardMan 3121. Although it has the same model number, it is internally known as a CardMan 3031 and requires new drivers. These drivers are now included in and pre-installed by the installer.
- If you load a keypad list and then start initializing extra keypads, after stopping initialization, the keypad list is automatically stored. This autostore file was also set as the last used keypad list. If you then wanted to store the keypad list, you were offered to store it as the autostore file in a temporary folder, rather than as the keypad list you loaded before. The autostore file is now no longer set as the last used keypad list, unless you load it yourself.

- When initializing keypads for more than one Base Station, the message box asking to start the initialization now also mentions the channel the Base Station operates on, and asks you to initialize or skip this Base Station.
- When opening the voting without having started a session, a message box appears that now allows you to immediately start a session, instead of just canceling the voting.
- When calculating the total voting time for a participant, the voting time for a question that resulted in a score of 0 points, is no longer added to the total. This way, when two participants end up with the same score, the time it took them to give a wrong answer, is no longer taken into consideration. This gives a fairer end result when determining the position of participants with the same score.
- A new option 'This answer selects all the answers above' was added to the advanced tab of an answer's properties. It can only be enabled for answer number 3 and above, and when the question allows at least two votes to be given. When enabled, if a participant selects this answer, all answers above this answer will be selected instead. For instance, if this option is enabled for answer 5, when a participant selects answer 5, then answer 1, 2, 3 and 4 will automatically be selected instead, assuming that the question allows four answers to be given. Otherwise as many answers as the question allows are selected instead.
- The Icon Handler Shell Extension now uses Direct2D instead of GDI+. This fixes the occasional Windows Explorer crashes.
- The startup dialog now stores a file's last used time in the registry, instead of relying on the actual file's last access time. Because the startup dialog actually accesses the file to retrieve its preview image, the last used time would always be the same for all files, namely the last time the startup dialog was displayed.
- In the preferences dialog, the maximum value for the duplicate placement and the grid size now depends on the selected screen size, rather than being a fixed value. Also, both now have a link button between the horizontal and vertical size box, which, when clicked down, keeps the horizontal and vertical value the same.
- In the Configure IVS-Online Connection wizard, it was not possible create a new user without filling in a password and not providing an email address. This was done because it would be impossible for the user to know his automatically generated password if this wasn't sent to him in an email. However, it is also possible to retrieve the user's password by exporting the internet participants. Therefore, it's now no longer required to fill in an email address if no password is given.
- The Configure IVS-Online Connection wizard had no texts filled in by default for the welcome texts. If the texts are left empty, the server automatically creates two defaults texts. To make it clear what the server will do, the default texts are now prefilled as placeholder texts. If you fill in your own texts, then these will be used by the server. If you don't, the placeholder texts will be used.
- The behavior of the Result field has changed, when it needs to display a majority of the number of voters. The majority now also takes into account the voting weight of the voters, where in previous versions of the software it would ignore the voting weight. If you want the old behavior, you also have to enable the 'Ignore voting weight' option. Also, if the option 'Last answer does not belong to total' is enabled, the result of the last answer is subtracted from the number of voters. It is assumed that the last answer can only be voted for once.

- A work-around was added for Windows 8.1 and Windows 10 not remembering the previous window size. If you maximized the main application window, then closed and restarted the application, the main window would be shown maximized. If you then restored it to its previous size, the main window would be as small as 320 x 240 pixels, instead of the size that was set before the window was maximized. This only occurred on Windows 8.1 and Windows 10. A work-around was added to make Windows remember the correct window size before maximizing it.
- When opening a text file script, that was saved using UTF-8 encoding without a Byte Order Marker (as of Windows 10 version 1903, this is the default for Notepad), IVS-Professional assumed that the file used Ansi encoding, which could lead to wrong characters appearing, especially when accented characters were used. When opening a text file without a BOM, IVS-Professional now tries to guess the encoding by first examining the entire file.

Bug fixes

- When right-clicking on a script file, the context menu offered to open the script with IVS-Basic, but the option was disabled. This was caused by the version information in the Context Menu Shell Handler, that wasn't updated to the correct version. The Shell Handler now takes the information directly from the Windows registry, so that in the future, an update to the version information isn't needed anymore.
- Due to a change in the IVS-Risk Analysis application title bar, IVS-Professional was unable to find the application window and therefore couldn't send any messages about updated vote results to IVS-Risk Analysis. This resulted in IVS-Risk Analysis no longer automatically updating the heat map after voting in IVS-Professional.
- If IVS-Professional was closed while the voting was still open, the voting would be cancelled instead of closed normally. This could result in a loss of results.
- If one or more questions, used in a scoreboard, contained more than one correct answer, and users were allowed to vote multiple times on this question, and a user chose both correct answers, this one user was added to the scoreboard twice, once with the score for the first correct answer, and once with the score for the second correct answer. This could mess up the entire scoreboard, potentially displaying the same user twice with different scores.
- If, when opening a script, you switched to another application while the script was still opening, an error message "Could not register tab" was displayed, and the script would not be opened, but instead an orange window was displayed.
- When run from a Terminal Services environment, opening a script would show an error message "Could not register taskbar", and the script would not be opened, but instead an orange window was displayed.
- When opening multiple scripts, the script windows are cascaded. When a window no longer fits on screen, it will be displayed at the top-left corner of the screen. When this happened, the window also got resized, so that it still wouldn't fit entirely on screen.
- When retrieving identified results from an online questionnaire, the participants list was stored in the newly created session, along with the results. However, the participants list was not loaded into memory, although the results were loaded and displayed. This could lead to the wrong results being

displayed, if the session used voting weights, or the wrong results being exported. This was only the case immediately after retrieving the results. If the newly created session was later imported again, the results were displayed and exported correctly.

- When, after switching on an RF-II Base Station, a keypad list with a large amount of keypads was loaded and then the network was tested, the Base Station could become unresponsive and ultimately go offline.

- If a session was imported into a script using online voting, which was set to Anyone can vote after registration, the participants list was not updated anymore when new participants registered for voting. Even though the new participants could vote, their vote was counted and also stored, their vote was not shown in the overall results, because they were not in the participants list. Only after manually editing the participants list and importing the session again, their votes were shown in the overall results.

- When calculating the total score a participant or group of participants could get when voting for all correct answers, participants that were disabled, were still taken into account. Even though they couldn't vote, their score was still added to the maximum achievable score. This resulted in a group never being able to achieve a score of 100%.

- The context menu for objects showed the 'Order' option in English, regardless of which language pack you had installed.

- When inserting a set of answers from a template, the same set of answers was always inserted, regardless of which option you chose.

- If you opened a script, made some changes and then reopened the same script, you were asked if you wanted to revert to the last saved version. However, if you clicked Yes, IVS-Professional would be closed entirely, and, if you had initialized a Base Station, it would throw some Access Violations.

- When resizing an object while the 'Snap to objects' option was enabled, the object would not properly snap to the slide's bottom boundary or vertical center, because the slide's width was accidentally taken as the slide's height.

- When resizing an image or multimedia object by moving either the top center or bottom center handle, the object could not be made smaller than roughly half its previous size.

- In the Configure IVS-Online Connection wizard, it was possible to add a new user without providing a user name, if only an email address was given. In this case, the email address should have been used as the user name, but it wasn't. The wizard would then fail to create the new user.

- If, when starting a new session with identified voting, the editbox containing the participant list filename was cleared, an 'Invalid characters in file name' error would occur.

- Some menu items have a secondary keyboard shortcut, which can be used to execute the action, in addition to the primary shortcut, even though the secondary shortcut is not visible in the menu itself. For example, the **Go to slide** menu item has a shortcut of · + Shift + G and a secondary shortcut of ·. Some of the secondary shortcuts, like ·, didn't work if the computer's keyboard layout was set to a layout where that key was named differently.

- If the background of a result chart was set up to use an image, a 'Cannot assign a TAdvancedPicture to a TBitmap' error message was displayed each time you clicked anywhere on the slide, making it impossible to continue working with your script.

- In the German version, some of the color picker buttons in the properties dialog had a Dutch text as the last option in the color popup, rather than a German text.
- When executing a lengthy operation, the hourglass cursor was not shown when a script was opened.
- When printing a script to images, the field settings, when enabled, were also printed, though they were only supposed to be shown in the edit screen.
- When printing a script, you could use the print settings dialog to select that only the current page should be printed. Even though the 'From slide' and 'To slide' comboboxes were set to the correct slide, clicking the OK button would still print the entire script, rather than only the selected slide.

# Version 4.5.8 – Released 11/30/2018

New features

- The Communication Wizard has a new option to automatically detect any connected USB clusters. This option is much faster than the option to automatically search for all clusters, because it will get its information from the Windows Device Manager, and therefore know immediately which device is attached to the computer and connected to which serial port.
- You can now double-click an IVS communication file, which will be opened in IVS-Professional. IVS-Professional will then find out which Base Stations are connected to the computer, automatically set up and initialize the Base Stations, analyze the communication file to see which channels are used, set the connected Base Stations to those channels and then load the keypads from the communication file. This allows you to set up the entire system by only opening the communication file.

Minor changes

- The question and answer number no longer push the question or answer text to the right if the number text font is bold or italics. Instead, the number text grows to the left.
- A warning message was added when you try to close the script that is currently being used for the presentation screen. In previous versions, the presentation screen was closed without a warning. As of this version, a warning message is displayed, asking you if you are sure to also stop the presentation.
- When the result chart displays its results in percentages, the number of digits in the percentages will now always be exactly the number you set in the chart's properties. In previous versions, any trailing zeroes would not be displayed. If, for instance, the result was exactly 12.5%, it would always be displayed as 12.5%, even if you'd set the number of digits to four. It will now be displayed as 12.5000%.
- The mean value and the standard deviation, displayed at the bottom of the result chart, now follow the number of digits set in the chart's properties. In previous versions, they would always display two digits.
- If you save a template and call it either 'normal' or 'widescreen', then these will replace the default normal and widescreen templates. When starting the application, these user-defined templates will show up as the first two templates in the template list.

- If you have a script with identified questions and are connected to IVS-Online, using a semi-identified group, then you are not required to provide a participants list when starting a new session. You can leave the participants list field empty, in which case a new participants list will be created automatically and will be filled with the users that log in to your IVS-Online script.
- The current script's zoom level is stored when you close the application and used again the next time you open the application.

Bug fixes

- The 'No active session' warning in the bottom right of the presentation screen was supposed to be displayed when no session was started while a Base Station was stand by. This warning was not always updated correctly, so that is could be displayed even though you had started a session, or wasn't displayed after initializing a Base Station without starting a session.
- When printing a hand-out, the dialog box, that allows you to select the number of slides per page, could under some circumstances be displayed behind the main window. Because the main window becomes inactive until you have made a choice in the dialog box, this could give you the impression that the entire application had become unresponsive.
- If the Result field was set to display its result relative to the number of participants, it didn't take into account any disabled or deactivated users in case of an identified voting.
- If, after opening a script, you immediately started working in another application, a 'Could not register tab' error might be displayed, and might even appear invisibly behind the application's main window.
- In the text editor for entering or modifying the question and answer text, if you tried to select a font by typing its name in the font combobox, and the font could not be applied, the previous font name would be filled in in the font combobox, erasing the part that you already typed.
- Aligning answers to the bars in the result chart didn't work if the chart wasn't linked to the question on the current slide.
- In the IVS-Online Connection Wizard, if you switched from an identified group (only a select group of participants can vote) to a semi-identified group (anyone can vote after registration) and the identified group was an anonymized group, the semi-identified group would also stay anonymized, which made it impossible to start a session with identified questions, because the remote script was anonymous.
- If no Base Stations were active, the status bar didn't show the network status for the current question anymore.
- If the timebar was set to play a sound clip, and that sound clip was very short (less than half a second), the sound clip wasn't audible, and going to the next slide took about 6 seconds. The latter has been fixed, but note that the timebar (or the multimedia object) is still not able to play sound clips that are very short.
- Deleting an object, then undoing ($\cdot$ + Z) that delete operation, and then redoing (Shift + $\cdot$ + Z) the delete operation, would not delete the actual object again, but would instead delete an object from the last slide in the script, or throw an error if the last slide didn't contain enough objects.

- If the location where the script is stored wasn't writable for the currently logged in user, starting a session would display the rather cryptic message 'List index out of bounds', instead of the message that the session could not be started.
- If the timebar was set to open the voting and close the voting, it would not start running after opening the voting, because the close voting timer was accidentally skipped.
- If a multimedia object was set to play an audio file and set to automatically start once the slide was displayed, it wouldn't start to play the audio file, because the play command was issued before the multimedia object was actually ready to start playing a file.
- If you chose to not show the startup dialog for selecting an existing script or creating a new one, the application's main window would stay hidden, making it impossible to use the software.

# Version 4.5.7 – Released 09/25/2018

New features

- The user interface was changed from a Multiple Document Interface to a Single Document Interface. This means that script windows are no longer part of single parent window, but are separate windows. Each script window has its own menu and toolbars. If you close the last script window, the application will exit. If you close the last script window using the **File > Close** menu option, the application will not exit, but show an empty main window instead.
- The Configure IVS-Online Connection Wizard now also allows you to set up a message queue, that can be used by your remote voters to send messages to the moderator. The last page of the wizard will give you two extra links, one for the moderator, who has to approve the messages, and one for a message wall, where the approved messages will be displayed.
- The Configure IVS-Online Connection Wizard now displays a summary page at the end, just before any changes will be applied. This will give you the opportunity to review the settings that will be applied and make any changes when necessary, before they are actually applied.
- The Configure IVS-Online Connection Wizard has an option to create a real-time script (which has been the default up until now), or an online questionnaire. In case of an online questionnaire, you don't have to use IVS-Professional to open and close the voting. Your users can answer the questions whenever they like, as long as the script is available. In the end you can retrieve the results using the **Connection > Retrieve Online Questionnaire Results** option. This will automatically create and open a new session containing the online questionnaire results.
- The Configure IVS-Online Connection Wizard can now create an anonymized user group. When adding users to this group, you only have to provide an email address. A user name and password will automatically be created and sent to the user. If you run the wizard again, you will only see randomized user names in a random order. You cannot delete a single user (as you wouldn't have a clue which user that would be), but you can delete all users at the same time. You can add extra users, but this will randomize the user names and order once again.
- The Configure IVS-Online Connection Wizard has a new option on the invite page, that lets you invite only those users that were added during this run of the wizard. Users that were already there, will not be invited again.

- The multimedia object and the timebar object now both use the Windows Media Foundation to play movie and sound clips, instead of DirectShow and DirectSound. On Windows 8.1 and above, the Enhanced Video Renderer will be used to display the video on screen. On Windows 7 and 8, the Video Mixing Renderer 9 will be used instead, because of a bug in the EVR on these systems, which would paint the whole slide black when playing a video file.

- To select multiple objects, you can now both Ctrl-click and Shift-click on the objects. Ctrl-click can also be used to click through an object. If one single object is selected, Ctrl-click on the object to select the first underlying object. Ctrl-click again to select the next underlying object (if any). Use Shift-click to deselect the selected object.

- To select multiple objects, you can draw a selection rectangle around the object. Only objects fully contained within the selection rectangle are selected. You can now also Shift-click to draw a selection rectangle. In that case all objects that are partly or fully within the selection rectangle are selected. If you also keep the Ctrl-key down, the current selection isn't cleared, so that you can add to the already selected objects.

- It is now possible to resize multiple objects. Use the resize handles of one of the objects to resize that object. All other selected objects will be resized as well, using the same scaling percentage as the object being resized.

- The new Snap to Objects option allows you to easily align objects. When enabled, objects being moved will snap to the sides or centers of non-selected objects. If multiple objects are selected, the object you click on to start the move operation, will be the object snapping to other objects. Snapping occurs for the left side, center and right side of the selected object, and either of those will snap to the left side, center or right side of any non-selected object. Snap to Objects can be enabled through the **View > Snap to Objects** menu item. When enabled, it can temporarily be disabled by pressing the Alt key while moving an object.

- When you are moving an object, and keep the Ctrl-key pressed when you release the mouse button, the original object(s) will be duplicated instead of being moved.

- The new menu option **Insert > Quick Insert Answers** lets you quickly insert a series of answers. You only have to enter (or copy/paste) the answers' texts into a text box. Each line in the text box will be considered a single answer. (Note that if an answer's text is too long, it will wrap to the next line. This is still considered a single line.) Empty lines are automatically skipped.

- In the advanced properties for a question, a new option 'Default answer' was added. This option is only available for a reference question. With this default answer, you can set an answer for partici-pants not answering the reference question. Participants not voting would normally not belong to any category in a reference question, and would therefore not be counted in a question that is crossed with this reference question. With the default answer, you can still assign them to a category if they don't vote.

- A new menu option **View > Show field settings** lets you easily view the settings of all fields on a slide. When enabled, in the top left corner of the field, a comma separated list of the field type and the settings for that field are displayed.

- In the properties of the question object and the answer object, you can now set a custom color for the question and answer number. This custom color can also be set in the template, so that you can apply it to all questions and answers at the same time.
- Reintroduced support for GIF images. Due to incompatibility reasons, GIF support was removed in version 4.5.3. It came back in version 4.5.4, but only for non-transparent, non-animated GIF images, and disappeared again in version 4.5.6. GIF images are now fully supported with only one restriction: you cannot place more than one animated GIF image on a single slide. You can, however, place multiple non-animated GIF images on a single slide. There will be a warning when you try to add an animated GIF while there already is an animated GIF on the current slide. Also note that an animated transparent GIF image might display some odd colors in the transparent parts while animating. This is caused by the restricted color set for a GIF image.

Minor changes

- When changing the order of an object (or multiple objects), the object stays selected, so that you can easily repeat the order change (for example when bringing an object closer to the front).
- If you save a script under a different name, any open session was automatically closed. This is to prevent the results meant for the new script from being saved in the old location. This behavior was changed, so that a session is now only closed when it can actually store results. Example results, for instance, cannot store results, so there is no need to close the session when example results are imported, because they do not depend on the script's location.
- In the start-up screen, where you select recently opened scripts, if you hover the mouse over an item in the list, the script's filename is shown in an info tip.
- The zoom level combobox in the top toolbar has been replaced by a toolbar button, including a plus and minus button and a fit to window button. You can click the plus and minus button to increase or decrease the zoom level in 10% steps. Click the fit to window button to set the zoom level to automatically zoom so that the slide fits within the entire window. You can also click the zoom level button to show a dialog box that allows you to set a specific zoom level. The **View** menu also has four new options to **Zoom In** (· + ⊞ or · + NUM+), **Zoom Out** (· + ⊟ or · + NUM-), **Fit to Window** (⌥ + · or · + NUM0) or **Zoom to 100%** (· + NUM1).
- The Advanced Typography options are no longer enabled by default for text objects (question, answer, text and field). These advanced options caused the word break routine to break a line right after an opening parenthesis, which could leave the opening parenthesis on one line, and the text between the parentheses along with the closing parenthesis on the next line. According to the Microsoft documentation, the advanced typography options are automatically enabled when needed, so there shouldn't be any need to enable them by default.
- The Configure IVS-Online Connection Wizard has a link on the credentials page, which you can click in case you forgot your password.
- The **Connection > Copy Internet Script Link to Clipboard** option has been replaced with **Connection > Show Internet Script Link**. Instead of simply copying the link to the clipboard, this option now displays a window containing the link in text and as a QR code. Clicking the link will open it in your browser. There are also two buttons to copy the link or the QR code to the clipboard.

The new **Show Moderator Link** and **Show Message Wall Link** will do the same for the message wall page and the moderator page respectively. However, the link shown is a shorter version of the actual link. If you click on the link, copy the link or use the QR code, the actual link will be used, which takes you directly to the page. If you type in the shorter version, you first have to enter your credentials before being taking to the requested page.

- The quality of the multimedia object's first frame image has been improved.
- When printing slides to an image format, the images now have the same dimensions as the script, instead of always being 1024 pixels wide.
- The **View > Show grid** option shows a slightly altered grid, as the grid no longer starts from the top left of the slide, but instead starts from the center of the slide. The grid now also displays a horizontal and vertical center line, which indicate the exact center of the slide.
- When the **View > Snap to grid** option is enabled, the objects not only snap to the grid when moved around, but they also snap to the grid when resized. You can temporarily disable the Snap to grid option by keeping the Alt key depressed.
- If you have an active Base Station connected, it is not possible to start a presentation without also starting a session. However, it is possible to stop the session while the presentation is still running. A warning message will now be displayed in the lower right corner of the presentation screen, reminding you of the fact that no session was started and hence no results will be saved or displayed.
- Upgraded GraphicEx to a newer version. GraphicEx controls the loading and decoding of image files in various different formats. Because of this upgrade, TIFF and PSD images, stored in various formats, can now also be loaded.

Bug fixes

- If the laptop's primary monitor was set to a different DPI scaling than the secondary monitor, and the presentation screen was displayed on the secondary monitor, the presentation screen might not cover the entire screen.
- Various UI issues regarding high DPI displays were fixed.
- The template's dynamic background primary and secondary color when hovering and primary and secondary color when selected were not stored properly in the template file. The colors might revert to the normal background primary and secondary color.
- If the Score field or Participant field had to display a name that contained characters not available in the current code page, the name might not be displayed correctly.
- In the text editor window, if you pasted text without formatting, the text might not be displayed correctly if it contained characters not available in the current code page.
- When starting a session in a script that had an active internet connection and had a lot of identified questions, it might take a considerable amount of time before the New Session dialog was displayed. Also, the cursor didn't change to an hourglass to indicate that the application was actually performing a lengthy task.
- If a time bar was paused and its count down action was then performed manually (for instance, if the time bar was set to close the voting, it was paused before it could close the voting and then the voting was closed manually), the time bar would stay in its paused state. If the time bar was then

started again (for instance, the voting was opened again), it would continue from its paused state, rather than starting again from its starting position.

- If you were voting with IVS-Online and your remote script was set to display the results, answer 1 might not show any results if one of your answers contained an extra newline character at the end of its text.
- Multimedia files that were placed into the script's multimedia folder before they were inserted into the script, didn't get their filename updated to the multimedia folder's relative location. Instead, they kept their full path, which could cause the multimedia file to not get loaded anymore after the script was moved to a different location.
- The option to continuously play a video fragment, didn't just rewind and continued playing, but instead first stopped the video fragment before rewinding and replaying. This caused an unnecessary delay, during which the screen went black.
- Inserting a picture from a file that had an unknown format, could lead to several error messages.
- When applying a template to a script with an active internet connection, the information about the internet connection would be deleted. If you would reopen the script later, it could no longer connect to the internet.
- On Windows 7 and 8, the VMR-9 is used to display a video on screen, instead of the EVR, because of a bug in the EVR on these systems. Due to a wrong setting in the VMR-9, it was not possible to display a video out-of-aspect. This has been corrected, so that videos on Windows 7 and 8 can also be displayed out-of-aspect.
- When opening the voting on a question with a large number of actual answers, it could take a considerable amount of time before the voting was actually opened.
- When importing example results, the total number of voted keypads was never set. Also the total number of votes and the total weight wasn't set if the current slide didn't contain a result chart. And the total voting weight wasn't set if the current question wasn't an identified question. For a normal question, the total voting weight should equal the total amount of votes.
- Importing results from an older version could in some cases lead to an error message.
- When the last slide in a script was set up to jump to another slide, this jump was not working when a presentation was started. After starting a presentation, the buttons and keyboard shortcuts to go to the next slide, were disabled as soon as you reached the last slide, even though this slide was set up to jump to another slide.

Version 4.5.6 – Released 02/01/2018

New features

- In the connection wizard, there's a new page that lets you customize the text and upload an image that is shown to the remote voters after they have logged in, when no question is currently open and no results are shown. You can also customize the text and upload an image that is shown in between questions, when no results are shown.

- In the connection wizard, when you create your users, you can now also enter a group name and voting weight for that particular user. This information will not be used on the remote server, but it will be included in the participants list, that you can download at the end of the wizard.
- The start-up window, that allows you to open a recent script or create a new script, has been improved. The window is larger and the two tabs are now simply called Recent and New. The preview images of the templates in the New tab are twice as large (note that user templates will not show a high resolution preview image unless they are saved again in the new format; this format is not compatible with older versions of the software, but you can still choose to save the template using the legacy format), and both standard and user templates are sorted on their name. Only the two empty script templates always appear first. The Recent Scripts Tab also shows preview images of recently opened or saved scripts. Preview images are created from the first slide in the script, once the script is saved. Scripts not containing a preview image will show a default image.
- An Icon Handler Shell Extension was added, that shows the script's preview image and the template's preview image as an icon in the Windows Explorer. A script or template without a preview image will show a default script or template icon. An illegal script or template will show an empty page icon.

Minor changes

- The option 'Relative to number of participants' in the Result field was renamed to 'Relative to number of voters', because the percentage was actually based on the number of people that voted. A new option 'Relative to number of participants' was added, that calculates the percentage based on the number of participants, regardless of whether they voted or not. Other options under Type, that previously referred to participants, were also renamed to voters, and a new option 'Total number of voters' was added, to display the total number of people that voted.
- In the Preferences dialog, on the View tab, the aspect ratio option was changed to a screen size option. It now contains descriptive names rather than merely ratios. Some exotic ratios have been removed, although they can still be set up using the custom option.

Bug fixes

- When a slide contained a lot of answers, it took a relatively large amount of time to build up the slide.
- (IVS-Participant Registration only) When editing a user in advanced mode, the user defined value 2 and 3 were not stored when they were changed.
- When saving the script, the logo used for an internet slide was not saved to the images folder. If you moved the script to another computer, the logo might disappear, because the file was no longer accessible.
- The Result field did not show correct results if voting weight was used and the results had to be calculated next in rank.
- The Result field did not show correct results if voting weight was used and the results were displayed in percentages relative to the number of votes.

- The new link to the Scripts folder that was added to This PC, did not allow you to copy or move anything to the root folder.
- In the connection wizard, on the user list page, the Import button allowed you to import both .txt and .csv files. However, while importing, only the tab character would be accepted as a separator character, even when you selected a .csv, where a list separator character should have been used.
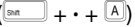
Known issues

- If the laptop's primary monitor is set to a different DPI scaling than the secondary monitor, and the presentation screen is displayed on the secondary monitor, the presentation screen might not cover the entire screen. **Work-around:** while the presentation screen is being displayed, go to **File > Preferences** and simply click OK. This will reset the presentation screen's size, so that it will cover the entire screen. You need to repeat this step each time you leave the presentation screen and start the presentation again.

Version 4.5.5 – Released 11/01/2017

New features

- On Windows 10, the Scripts folder will also be added to This PC, as an easy access shortcut to the actual Scripts folder. This shortcut will be created the first time you start IVS-Professional.
- (IVS-Participant Registration only) The filter field added in the previous version is now case-insensitive by default. To make it case-sensitive, prepend your search string with a \. For example, if you enter 'G:A*' as a search string, you'll get all participants that are in a group that either starts with an 'a' or an 'A'. If you enter 'G:\A*', you'll only get participants that are in a group that starts with an 'A'.
- If you insert an image that has EXIF information (jpg and tiff), the image will automatically be rotated, according to the rotation tag in the EXIF information. Note that rotation is performed on-the-fly, and can be relatively slow for large images.

Minor changes

- The free version now also gives you access to internet voting. The email you receive after downloading the software, contains a link to request an internet account. With this account, you can connect to the IVS-Internet Server, to try out internet voting with up to three remote voters. You can even combine it with keypad voting, up to a total of 30 participants (keypads and remote voters combined).
- In the text editing window, the Rich Edit control was updated. Instead of sticking to Rich Edit version 3, it now uses the latest Rich Edit version available on the computer. For Windows 7 this is version 4.1, for Windows 8 it is version 7.5 and for Windows 10 (with at least update 1607) this is version 8.5.
- Two new buttons were added to the text editing window, that allow for new functions that were previously only accessible through keyboard shortcuts. The new All Caps button (Shift + · + A) allows you to change the selected text to all capitals. Note that this function does not actually change

the text into capitals, it merely displays the text in capitals. If you switch the option off, the text reverts to its original capitalization. The new Line Spacing button allows you to set the spacing between the text lines. The single, double and one and a half line spacing options were already available through the shortcut keys · + 🄸, · + 🄰 and · + 🄰 respectively. New line spacing options are 1.15, 2.5 and 3 lines.

- In the text editing window, if you enable either bullets or numbering, the paragraphs are now also properly indented. And the font combobox no longer lists the vertical fonts (the ones normally starting with a @), as vertical text reading is not supported.

- When inserting an audio or video clip, the file type combobox in the open file dialog now shows the file types in the application's language rather than in English. The file types are also sorted alphabetically.

Bug fixes

- (IVS-Participant Registration only) If the new filter option in the Participant Manager was used to filter a specific participant, editing this participant would actually edit the first participant in the list, instead of the first filtered participant from the list.

- (IVS-Participant Registration only) On a computer with high DPI settings, the Participant Manager, search window and default participant window would have extra-large texts, because the text was accidentally scaled twice.

- Crossing a question with · + 🄶 and then selecting a question from the list, would not function correctly or not function at all. However, crossing with a reference question using 🄰 + 🄸 would function normally.

- In the properties for the result chart or the timebar, the font style selection box could display each font style multiple times for some fonts, and the font size selection box would not display the default font sizes for Type1 fonts.

- On a computer with high DPI settings, the zoom combobox in the main window's toolbar would have extra-large texts, because the text was accidentally scaled twice. This was also true for the ruler in the question, answer and text editing window.

- The ruler's indentation markers in the question, answer and text editing window were not scaled at all on computers with high DPI settings. This was also true for the color picker button's color drop down window.

- (IVS-Professional only) Although supposedly fixed in the previous version, the checkbox to remember your user name and password in the remote connection wizard, would still not be checked, even though your user name and password were already remembered.

- If, during the installation of the software, you selected a custom setup and disabled the installation of the Script version 4.3.x/4.4 plug-in (which, as of this version, is now disabled by default), then, when saving a script, the script's name would not appear in the application's title bar and would not appear in the list of last saved scripts. Because the script's name stayed unknown, it was also impossible to start a new session. As a work-around, you would need to close the script and re-open it.

- (IVS-Professional only) When creating a remote script with more than 1200 participants (give or take), the remote connection wizard would give an Access Violation and leave the application in a non-responsive state.
- If the options 'Results from high to low' and 'Last answer does not belong to total' were both set, then not only the last answer, but also the first answer was ignored when calculating the total. This could lead to a total result of more than 100% in the result chart.
- For questions without real answers, the option 'Last answer does not belong to total' would still display the results of the last answer in percentages.
- When clearing non-existent files from the last used files list in the start-up screen, the non-existent files were cleared, but some existent files might still be grayed out.
- When inserting a video fragment, it could take quite some time (about the same time as the length of the video fragment) before the video was inserted and also before the video was loaded when switching to the slide containing the video fragment. This was only true if the properties were set to display the first frame from the video and only happened for some specific video formats.

Version 4.5.4 – Released 07/10/2017

New features

- (IVS-Participant Registration only) The Participant Manager now contains a filter field that allows you to specify a filter to limit the number of participants displayed in the list. Enter a text to only display participant with that text in their name. Prepend the text with a * to only show names that end with that text. Append a * to only show names that start with that text. Start the filter text with G: to search for a group name rather than a participant name. Note that the filter text is case-sensitive. The same filter options can also be used in the Search Participant filter box.

Minor changes

- When duplicating objects, the clipboard is no longer used as an intermediate storage. Duplicating used to be a Copy immediately followed by a Paste. Duplicated items are now stored internally, which means that the contents of the clipboard are left untouched when duplicating items.
- Printing a script layout with results would only support absolute values and percentages. Any other setting would fall back to printing absolute values. This has been extended, so all other settings (except the 'legend' setting) are now also supported when printing a script layout.

Bug fixes

- (IVS-Professional only) When importing example results into a script with identified questions, the score field could display 'Invalid index' even though the given index was in fact valid.
- (IVS-Professional only) If you opened a script with an active internet connection by double-clicking on the script file in Windows Explorer, a window would pop up asking you to enter the password for your internet account (assuming you didn't have IVS-Professional remember your password). When typing into the password field, the main menu would also start responding to the keys you pressed. If your password contained an 'a', for example, the new answer text dialog would pop up.

- (IVS-Professional only) A score field set to display the 'Percentual score per number of voters' would not display anything. This was only true for newly created scripts. For scripts made with a previous version, the score field would continue to work normally, unless you tried to change the field's properties.

- (IVS-Professional only) When a slide is set to be displayed on the internet as well, the slide's image is sent to the internet as either a jpg or a png, depending on which one has a smaller file size. In case of a png, some parts of the image, or sometimes even the entire image, could end up being transparent and therefore not be visible on the internet.

- In the print dialog, when you select to have a question crossed with a single question, the combobox listing the possible questions to cross with would stay empty.

- (IVS-Professional only) In the properties of an answer, it was impossible to enter a negative score for this answer. When entering the minus sign, a pop-up message would say that the character you entered was not allowed because it wasn't a number.

- (IVS-Professional only) If the display type of a score field was set to display the group name, opening the field's properties would reset the display type to display the score.

- (IVS-Professional only) If your script has an active internet connection and the remote script was set to 'Anyone can vote after registration' and you started a session with a participants list in .cdl format, the original participants list would be overwritten in .ipx format. This would make the participants list invalid the next time you tried to open it, because the extension said it would be a .cdl file, while it actually was an .ipx file. The participants list is now saved as an .ipx file when it gets rewritten.

- (IVS-Professional only) If the participants list was rewritten, an error could occur when the location where the original list was stored, was not writable. The error is now ignored and the original participants list will continue to be used, which means that newly registered internet users can still not vote. If you're using this option, make sure that the location where the participants list is stored, is actually writable.

- (IVS-Professional only) In some situations, the checkbox to remember your user name and password in the remote connection wizard, would not be checked, even though your user name and password were already remembered.

- When right-clicking on a script file in Windows Explorer and selecting the 'Open with IVS-Professional' option, IVS-Professional might not be started at all, especially on 64-bit OSes.

Version 4.5.3 – Released 03/10/2017

New features

- All software is now also available as a true 64-bit version. Note though that the 64-bit version does not support the older (blue) USB dongle. You either need to new (red) USB dongle or a temporary license to be able to use more than 30 keypads.

- As of this version, the software is installed as a single language application. You can install additional language packs to use the software in other languages. The Preferences dialog has been extended with a new Language tab, where you can set the language priority order. This language priority order applies to all IVS applications and tools.

- The timebar has three new types that allow you to combine the bar or circle with the remaining time as text. The time is always drawn in the center of the bar or circle.
- The printer settings dialog has been replaced with a modern print dialog. This dialog can be accessed from the File menu, or from the print setup dialog when printing a script. In the latter case, the new print dialog allows you print all slides, only the current slide, or a slide range/multiple slide ranges. The From Slide and To Slide comboboxes are automatically updated to reflect the selected setting. If you enter multiple slide ranges in the print dialog, only the first one will be shown in the From Slide and To Slide comboboxes, however, all slide ranges will be printed. If you manually change the comboboxes, then only the single slide range selected with the comboboxes will be printed.
- (IVS-Professional only) A new question option was added to the Advanced tab of the question properties. This allows you to pose an approximation question, where the participants have to guess the correct value. You set up a correct value and a score for the correct value. Anyone guessing the correct value will get the full score. The more they deviate from the correct value, the less points they will get. If they deviate too much, the score will not get negative, unless you also check the 'Allow negative score' option.

Minor changes

- The USB dongle is now preferred over the temporary license. If you have a temporary license and insert a USB dongle, you will get the license from the dongle. Remove the dongle to continue to use the temporary license, if it's still valid.
- (IVS-Professional only) The option 'Also apply the above background settings to slides on IVS-Internet' was renamed to 'Always use a solid fill background for slides on IVS-Internet', to make it more clear what this option does. Because of the rewording, the option's use is now inverted, so instead of checking it, you now have to uncheck it to get the same background on the internet as in IVS-Professional.
- When playing a video file, the image can now also be played out-of-aspect, meaning that the video image stretches when you change the multimedia object's size. Due to a bug in the EVR on Windows 7 and Windows 8, the image on these OSes will always be displayed keeping the original aspect ratio.
- (IVS-Professional only) The option 'Only apply the above background settings to slides on IVS-Internet' now really only applies to IVS-Internet. It will not show the background in the template either.
- (IVS-Professional only) A new 'Advanced' tab was added to the question properties. The 'Identification group' and 'Default score' options have moved to this new tab, and the 'Default score' option has been renamed to 'Score for non-voters' to better indicate its use.
- (IVS-Professional only) The IVS-Internet Connection Wizard now has an option to remember your user name and password. If you open a script with an active internet connection, IVS-Professional will try to connect with the stored user name and password. If no user name and password were stored, you will be asked to enter them when you open the script.
- (IVS-Professional only) If a PNG image is selected as a logo file for the internet script's background slide, the file will now stay a PNG image, even if the file size of the converted JPG is smaller. This is to preserve transparency in the original PNG image.

- (IVS-Professional only) If an image is used as the slide's background and the image position is set to Fill, the image will now be centered on the slide for internet users, instead of left aligned. This resembles the way the image is displayed in IVS-Professional.

Bug fixes

- (IVS-Professional only) If an answer was marked as a correct answer, and the option 'Only apply the above background settings to slides on IVS-Internet' was used, the answer would still get a background color applied in IVS-Professional. This made it quite obvious to the user what the correct answer was.
- If, when closing the voting, some third-party application (such as a virus scanner) had locked the result files, the final result file would get damaged, so that it would no longer be able to show any results for that particular question.
- If the application was closed while the voting was still open, the result file would be left in an unfinished state. After importing the same session again, the final result file would get damaged because of that unfinished result file, so that it would no longer be able to show any results for that particular question.
- A field of type 'Result' would not display any results if the option 'Last answer does not belong to total' was selected and there were no results available for any answer except the last one.
- When you go to the last slide or the first slide, the button to go to the last/next or first/previous slide would still be enabled, suggesting that you could still go further back/forward.
- (IVS-Professional only) The option 'Only apply the above background settings to slides on IVS-Internet' was not stored in the template.
- If an image was used as the slide's background, and the image position was set to either fill, stretch or tile, the slide's background color was not drawn. This background color would normally not be visible, because the image would fill the entire slide area. However, if an image with transparency was used, you would see portions of the previous slide in the image's transparent areas.
- If the mean and/or standard deviation were enabled in the template, the displayed values in the template were wrong. They would either both be zero, or display some random value.
- When saving a template, the primary color selected under 'Background when selected' in the Advanced tab of the answer's properties would get overwritten with the secondary color.
- (IVS-Professional only) When a script was saved to the internet, the answers were sent in the order in which they appeared on the slide rather than the actual numbered order. After re-arranging an answer's order, the answers on the internet might appear in a totally different order as they appeared on the slide.
- (IVS-Professional only) When a logo was used on an internet script's background slide, and that logo's file size was too large, an 'Invalid pointer operation' could occur, which made it impossible to open the script again.
- (IVS-Participant Registration only) The application state was not properly initialized to 'Register', so you had to selected the 'Register' state from the menu first, before you could start registering.

Version 4.5.2 – Released 07/19/2016

Bug fixes

- If a device was attached to or removed from the computer, you could get a notification 'This application has stopped working and needs to be closed'. IVS-Professional would then be closed without giving you a chance to save your work.
- If one of the last used scripts came from a remote computer and that computer was no longer accessible, IVS-Professional would freeze for about 20 seconds during startup, before showing you the startup dialog.
- If a license on a USB stick was connected, and the license file had somehow become corrupted, an 'Out of memory' error would be displayed upon startup, and the application would not be completely initialized. An Access Violation could occur anytime the license needed to be read, or when the application was closed.

Version 4.5.1 – Released 06/15/2016

Minor changes

- The 'Result' field now has an extra option to display the total result including the last answer. This option always displays the result of all answers, regardless of the 'Last answer does not belong to total' setting.
- The 'Connection' menu is now always shown, even if no internet license is available. The only option available is the 'Info' option, which gives more information about online voting.
- The way keypads are initialized when you have connected more than once Base Station has been simplified. You are still asked if you want to initialize keypads for each connected Base Station. If you click Yes, the standard Initialization window appears. If you are finished initializing keypads for this Base Station, you can now click the Stop button in the Initialization window. There is no extra window needed asking you to click OK to stop initializing.
- If you right-click on a script file in Windows Explorer, that was saved by an application in a different language than the one currently installed, the Open action would not be the default action, because the application in the other language was not considered the preferred application. This has now been changed, because the application is perfectly capable of opening a script saved in another language.
- All executable files are now dual signed: once with a sha-1 signature and once with a sha-256 signature.
- Updated the drivers for the Base Station to version 2.12.16.0.

Bug fixes

- (IVS-Professional only) Voting on a group question turned out to be impossible, because this would give a List Index out of Bounds error message. The group question would accidentally take the second vote from each keypad although keypads are only allowed to vote once.

- When the number of bars to show in the chart was set so that the last answer wasn't shown, the total result count would still include the last answer, regardless of whether the option 'Last answer does not belong to total' was enabled or not.
- (IVS-Professional only) When creating an IVS-Internet script, that didn't have a specific start and end date, the time should have been set to 00:00, but that only happened when you were in the same timezone as the server and DST was not in effect.
- (IVS-Professional only) When a temporary license code was entered that included the IVS-Internet option, the menu wasn't updated to show the Connection menu. It was only shown when opening a script or clicking somewhere in an already opened script.
- (IVS-License Manager only) When a keylock expired, it was no longer possible to enter a new license code. That made it impossible to set a new expiration date for the keylock. Note that expiring key-locks are currently not in use.
- Printing to a printer (not to file or bitmaps, etc.) would fail in some cases.
- Calculating the results would take exponentially longer for an identified voting when a) there were more participants in the participants list and b) the participants were allowed to vote more than once on the same question.
- When uninstalling the application, the InstallDir was left behind in the registry. This InstallDir is used by Windows Explorer to determine the installed application when double-clicking a script file. This could cause a script to not open anymore, because the application to open the script had in fact been uninstalled.
- (IVS-Participant Registration only) When importing participants, any alternate group name or weight was not imported if only one of the two differed from the default. They were only imported if both the group name and the weight were different from the default.

Version 4.5 – Released 03/18/2016

New features

- (IVS-Professional only) The IVS-Card Link and IVS-Lite Link application are going to be replaced with the new IVS-Participant Registration application.
- A new Answer Manager was added to quickly move the answer texts up and down the available answers. Note that this only moves the texts, not the answer objects itself.
- The Background tab is now also available for question and answer objects. Also a new option was added to the Background tab to let you set a radius to let the background have rounded corners, and two options were added to set the transparency of the selected primary and secondary colors. The options to let the background color of a participants field change based on the given answer have now been moved to a separate 'Interactive background' tab.
- (IVS-Professional only) IVS-Professional can now connect to IVS-Internet which allows your audience to not only use keypads to vote, but also any device that can connect to the internet and display a web page. Use the 'Connect to internet' option in the new 'Connection' menu. Note that you need a license to use this option, you need to have an account on the IVS-Internet server or use your own

dedicated server, and you need to do a custom install to install the IVS-Internet Gateway plug-in, that can be found under Shared Components > Plugins > Communication.

▪ After having initialized keypads, you are no longer asked to save a list with keypads. Instead, the list is automatically saved. You can still save your own list by using the 'Save initialized keypads' option from the 'Communication' menu.

▪ When starting a presentation, you are no longer asked to start a session. Instead, when a Base Station is connected and initialized, you are required to start a session. If you don't start a session, you cannot start a presentation. This is to prevent you from starting a presentation without being able to see the voting results.

▪ The script plugins were updated, which results in an overall performance improvement, especially for larger scripts. It also allows undo information being retained after saving the script. This means you can still undo any changes, even after saving the script.

▪ As a result of the script plugins update, the way slides are moved in the slide sorter has also changed. If you move a slide backward, the moved slide is placed before the slide you drop it on. If you move a slide forward, the moved slide is placed after the slide you drop it on.

▪ Added support for a license file stored on a removable disk rather than using a keylock.

▪ The 'Participant' field cannot only show the participant's name, but can now also display the participant's group, weight, vote and three user defined values.

Minor changes

▪ Improved the speed with which the result and cumulative fields are calculated, especially for a question with a relatively large number of answers.

▪ Changed how the font for the question and answer number is determined. It is now always taken from the last character of the text (usually a carriage return value). This is consistent with how Microsoft Word determines the color of a paragraph number. Note that this might be a breaking change for some older scripts.

▪ Added more options to enter accented characters using a US keyboard layout. Press · + ⌐, followed by a, e, i, o, u, y (or their capitals) to get an acute accent. Press · + ⌐, followed by a, e, i, o, u (or their capitals) to get a grave accent. Press [Shift] + · + [^6], followed by a, e, i, o, u (or their capitals) to get a circumflex accent. Press [Shift] + · + ⌐, followed by a, e, i, o, u, y (or their capitals) to get an umlaut accent. Press [Shift] + · + ⌐, followed by a, n, o (or their capitals) to get a tilde accent. Press · + ⌐, followed by d or D to get ð or Ð respectively. Press · + ⌐, followed by c or C to get ç or Ç respectively. Press · + [?/], followed by o or O to get ø or Ø respectively. Press [Shift] + · + [&7], followed by a, A, o, O or s to get æ, Æ, œ, Œ or ß respectively. Press [Shift] + · + [@2], followed by a or A to get å or Å respectively. Press [Shift] + · + [Alt] + [!1] to get ¡, or [Shift] + · + [Alt] + [?/] to get ¿. These key combinations correspond to the ones used in Microsoft Word. Please note that the given combinations are for a US keyboard layout only. Other keyboard layouts may use other keys or combinations to get accented characters.

- (IVS-Professional only) For any field type where an answer has to be selected, it is now also possible to select answers even if there are no answer objects. In this case the answer list simply displays 'Answer 1', 'Answer 2', etc. for as many answers as indicated in the properties of the question.
- When trying to initialize a Base Station at application start-up, that's not connected anymore, a warning is displayed. On Windows Vista and higher, this warning has less text, with a 'More information' button to display the rest of the text, and it contains a checkbox to not display this warning anymore.
- When opening the voting without having started a session, a warning is displayed that now allows you to cancel the open voting request to start a new session. On Windows Vista and higher, there is a checkbox to not display this warning anymore, until the application is restarted.
- When aligning answers to the bars in the chart, the alignment now takes into account the first displayed bar in the chart and whether the chart displays its results from high to low. In the latter case, the answers are also rearranged from high to low.
- The preview images of the templates in the start-up screen now have a border around them, which makes templates with a white background better visible.
- Added an 'Open scripts folder', 'Open Keypad Lists Folder' and 'Open Participants Lists Folder' option to the Help menu to quickly open the folders in the Windows Explorer.
- (IVS-Professional only) During an identified voting using RF-II keypads where correction was not allowed, one could still 'correct' his votes by putting the chip card in another keypad and vote again. This has been changed. When correction is not allowed, voting with the chip card in another keypad will not overwrite existing votes from the original keypad. When correction is allowed, you can still overwrite previous votes by putting the chip card in another keypad.
- The results are now always immediately stored, even if the current slide is not an interactive slide. This has the side effect that some fields on the current slide are updated with new information when you change slides (i.e. go to some other slide and then return to the slide where you opened the voting) while the voting is still open. But this was already the case for interactive slides.
- The timebar has been updated to use GDI+ to draw itself. This results in a smoother looking timebar, especially the circular one and the textual one. The textual one now uses the time separator as set up in Windows instead of always using the colon.
- When a multimedia object is inserted and a video file is selected that is larger than the slide, the multimedia object is now resized to fit within the slide.
- When a multimedia object is inserted and a video file is selected, the first frame of the video file will be displayed instead of the default black rectangle. You can change this in the properties of the multimedia object, where you can now also select to display a transparent placeholder for as long as the video file is not playing.
- Audio or video files used in the timebar or the multimedia object, that are smaller than 50 MB, are now copied to the Multimedia folder in the script folder when you save the script. Files larger than 50 MB will remain in their original location and the script will link to this original location. If you want to include larger files in your script, copy them to the Multimedia folder first and then insert them in your script by selecting them from the Multimedia folder.

- Some options on the Answer properties page were moved to a separate Advanced page. These options control very specific behavior and shouldn't be allowed to be changed too easily.
- The File menu now lists eight last used files instead of four.
- (IVS-Base Station Locator only) The application now searches for Base Stations on all available network adapters.
- The text editing window for entering the text for a question, answer or normal text, now takes over the background color of the question, answer or text, instead of using the slide's background color.
- (IVS-Card Link only) When no reader has been selected yet, and one or more readers are connected, the first available reader is now selected by default. If no reader could be initialized, the ID label now reads 'No reader' instead of 'No card'.
- In the Chart properties, the result type 'Percentage relative to first vote' was renamed to 'Percentage relative to total voters' because this better describes how the percentage is actually calculated.
- In the Chart properties, an extra result type 'Absolute/Percentage relative to total voters' was added, which displays both the absolute number of votes, and the percentage of votes relative to the total number of voters.
- On the View tab in the Preferences, a new option was added to the multiple monitors list. The option 'Automatic' automatically chooses a monitor to display the presentation on. If only a single monitor is available, it will use that one. If multiple monitors are available, it will use the first non-primary monitor.
- (IVS-Lite Keypad Information only) When checking the keypad's battery status, the keypad itself is no longer actually initialized. This means that you won't see the green led anymore, and the keypad stays on its original channel, instead of changing to battery checking channel (channel 5).
- In the properties of a question, if you set the question to be a group question, the option to display a mean value is disabled, because it doesn't make much sense to display a mean value of group names. However, the option to display the standard deviation was not disabled, although it makes just as much sense as displaying the mean value. Both options are now disabled when you select a group question.
- In the properties of the Result you can now also select the display the chart top-to-bottom as well as right-to-left. This option differs from the option 'Answers from high to low' found in the properties of the question, because it also turns around the axis, whereas the 'Answers from high to low' only turns around the bars. If you switch on both options, the bars will be turned around twice, effectively staying unchanged.
- An image pasted from the clipboard is no longer inserted as a bitmap image, but as a JPG or PNG image instead, depending on which one has the smallest file size.
- To display a video file, the multimedia object now uses the Enhanced Video Renderer when available (Windows Vista and higher). With the current settings, the EVR is not able to display a video out-of-aspect. This means that if you manually scale the multimedia object, without maintaining the aspect ratio of the original video, the video will still be displayed with its original aspect ratio.
- Improved the icons displayed by the multimedia object. A speaker icon is shown when the selected file does not contain any video. A yellow triangle icon with exclamation mark in the bottom left corner means that the given file could not be found. A red circle icon with cross means that the file

could not be rendered (which usually means that no DirectShow codec is installed that can play the selected file). A green circle icon with triangle means that the multimedia object is currently playing an audio file. A yellow circle icon with two vertical bars means that the multimedia object has been paused.

- The timebar now only uses the DirectSound Renderer to play the sound files. In some cases this will speed up the loading times of the sound files.

- The script's aspect ratio is now also stored in the templates. This means that you can now save both normal and widescreen templates. A default widescreen template, based on the default normal template, is now also provided.

- Improved the display of the splash screen, status bar, main menu, popup menus and wizards on systems with a higher DPI setting.

- (IVS-Professional only) All fields that work with name filters or group name filters now allow you to use the '*' wildcard to match any remaining string. E.g. 'red*' will match any name starting with red. '*red' will match any name ending in red. '*red*' will match any name containing red. For name filters, the wildcards are implicitly added to the beginning and end of the given string, if no other wildcards were entered. If you don't want to use implicit wildcards, put the string between single quotes.

- The position and size of the main application window is stored when you close the application and used again the next time you start the application. The preferences window remembers which tab you selected last, and selects the same tab the next time you open the preferences. The reapply template window remembers your current selection and used that same selection the next time you open the reapply template window.

- (IVS-Professional only) Whenever the FieldText.xml is updated, the current slide is automatically refreshed to reflect any possible changes in the text fields.

- (IVS-Professional only) In the properties of a field of type 'Result', the option 'Number of digits' has been renamed to 'Show decimal places' and the maximum value has been increased from 5 to 9 decimal places.

- (IVS-Professional only) In the properties of a field of type 'Result', a new option 'Precision in decimals' was added, which allows you to display absolute values with decimal places. This option is only useful for identified voting with voting weight. This option divides the total number of votes by any power of 10 to get the desired number of decimals. This implies that you must multiply all your voting weights by the same power of 10 to get correct results. When this option is used and set to a value higher than 1, the option 'Show decimal places' can be used to determine the actual number of decimal places shown. The maximum number of decimal places is always one less than the given precision.

- (IVS-Professional only) Four new options were added to the 'Result' field to also display a supermajority of three quarters instead of only two thirds.

- After starting a session or importing an existing session, the new option 'Edit session' in the Voting menu lets you edit the session's name and (IVS-Professional only), with an identified session, lets you change the list of participants to use. Please be careful with the latter, because changing the list

of participants for a session that was already partly voted, could potentially change the results of the already voted questions.

- In the properties of a multimedia object, it is now possible to indicate that the multimedia object should be played continuously.
- In the start-up screen, the eight last used scripts are listed. If one of the scripts is unavailable, it will be greyed out and you won't be able to click OK to open a script that doesn't exist anymore.
- On the 'View' tab of the Preferences screen, three new options were added to the aspect ratio. You can now also choose a double full HD resolution (32:9) and a triple full HD resolution (48:9). The last option allows you to enter a custom resolution. Note that whatever resolution you enter will be treated as 100% screen size. If the given resolution doesn't fit on the screen, it will be resized (either enlarged or reduced) to make it fit.
- A popup menu was added to the last used scripts list in the startup screen that allows you to remove a specific item, non-existent items or clear the entire list.
- The help files were updated to reflect recent changes in the manuals.

Bug fixes

- When copying/pasting answers that had been re-arranged, the answer numbering of the pasted answers could get all mixed up.
- A Result field could give a wrong result (either absolute or in percentages) if the question it belongs to could be voted on more than once and one of the first votes of a particular participant was not received or was skipped by the participant himself.
- A Name field could lead to an Access Violation if the voting on one of the questions was opened and then cancelled.
- If a keypad goes out of reach during an opened voting and comes back into reach when the next voting is already opened, the keypad will still transmit its vote of the previous question. If this vote was now invalid (e.g. the keypad voted a 5 on the previous question, but the current question only has 3 answers), it would still be handled, resulting in the total vote count not corresponding with the vote count in the chart.
- The Result field would not display anything if the results contained a vote that was higher than the current number of answers. This could happen for a question that was already voted and then had one of its answers removed.
- When filtering the Score field on a specific group name, participants not belonging to this group would still be added to the list, with a score of 0 points.
- When displaying the answers from high to low, the chart would always end with the first answer, instead of the answer set as the First displayed bar. (This change was reverted, because the old behavior turned out to be correct.)
- When an invalid user template was found, the template was still added to the list of templates in the start-up screen, with the preview image of the previous template.
- If an image was used as the background of the text object on the template, the image was not scaled properly.

- An image used as the background of the text object on the template was not saved to the images folder when the template was saved. Instead it remained on the original location.
- When a timebar was set up to close the voting, but the voting was opened on a different slide, closing the voting would return to the slide where the voting was opened and then cause an Access Violation.
- When the option "Calculate answers next in rank" was combined with the option "Show percentage of first votes", the percentages were not calculated correctly, because the total number of first votes was not multiplied by the ranking order.
- When the option "Show percentage of first votes" was used in combination with multiple answer groups, the first vote could have been reset when any of the other votes came from a different answer group. In that case the percentages in the result chart would be wrong, because the number of first votes would be less than the actual number of voters.
- If a template was saved that used an image as a background, and later another template was saved that used a different image as a background, but the filename was the same (e.g. background.jpg), the first background image would be overwritten.
- When comparing multiple questions in the same result chart, where the results should be shown as a percentage relative to the total number of voters, only the first question in the chart would have a percentage relative to the total number of voters, all the other questions would have a normal percentage (i.e. relative to the total number of votes).
- Voting weights of more than 2,147,483,647 were not handled properly, resulting in the weight being reset to 1.
- If the "Result" field had a filter applied to only count the participants from a certain group, this filter was ignored when the field was set to display the results relative to the number of participants.
- (CC100 only) When the correction key was used for a Y/N question, the vote was corrected, but the vote count was not decreased.
- On the Presenting tab of the Preferences window, if you selected to use a presenter that alternately sends an F5/Esc, the selection was not remembered the next time you opened the Preferences window.
- (IVS-Professional only) If a question could be voted on more than once, and had answers in different answer groups, it was possible to vote on the same answer twice, even if that was not allowed, by voting with the same chipcard in two different keypads.
- If the software was accidentally started twice, the second instance could remove the temporary license, because it was made invalid by the first instance.
- When starting a presentation by pressing F12 for a script with identification, the Start Session dialog would appear. After selecting a participants list with the browse button, the input focus was set to the main window instead of to the Start Session dialog. This would allow you to press F12 again, which would bring up a second Start Session dialog. After completing the second dialog, the presentation screen would appear, but it wouldn't allow you to use any shortcut keys, because in the background, the first Start Session dialog would still be active.
- When applying a different template containing a background image, the image of the previous template would still be shown if the image of the new template could not be found.

- When running a presentation on the secondary monitor, you could open a second script and import example results into this script. The presentation screen would then display the text 'Example results' in the bottom right corner, even though the script on the presentation screen did contain real results. Likewise, if you would start a presentation from a script containing example results, you could open a new script, import results into that script and then stop the session. This would make the text 'Example results' disappear from the presentation screen, even though the script on the presentation screen was still using example results.
- When starting a new identified session, the participants list was copied to the session folder. Although this XML file said it was stored as UTF-8, it was in fact stored as Windows-1252. This would make this XML file incompatible with other applications that expected the file to be UTF-8, for example the new IVS-Participant Registration application. It could also cause data loss, because not all characters available in UTF-8 are also available in Windows-1252. The participants list is now written as a UTF-16 XML file. Note that this is a breaking change. Older versions of the software will not be able to read this XML file, effectively not being able to import identified sessions written by newer versions of the software.
- When a question and chart were copied and pasted to another slide, or if any property of the chart was changed, the 'Adjust bar width to' option of the chart would no longer follow the template.
- Fixed various memory leaks.

Version 4.4.14 – Released 03/11/2013

New features

- Added an extra chart type that displays the answer legends in the chart's labels. This is useful for a multiple-choice distribution.
- (IVS-Professional only) Added an extra option to the answer properties. When the option "This answer repeats the given answers of question x" is enabled, choosing this answer will automatically repeat the answer given for a previous question. Set the number of the question from which you want to repeat the answers, or leave it to zero to repeat the answer from the previous question.
- (IVS-Professional only) All fields that work with group names now allow you to enter multiple group names, separated by a semi-colon. You must enter the exact group name, which is case sensitive. Note that this is a breaking change: if you open a script, made with an older version, that relies on only part of the group name, then this script will no longer function correctly. You will have to modify the fields to include the entire group name(s).
- (IVS-Professional only) Changed the way the Score field works. You can now also display a top-5 of participants within a certain group. Just select the participant number and group number. Enter a 0 if you're not interested in a certain group. Enter a 0 for the participant if you want to see totals for the group. Enter a 0 for both to see the totals of the entire group. You can also filter on specific groups: just enter the group name or names, separated by a semi-colon.
- (IVS-Card Link only) The Communication menu was renamed to Readers menu. The option to refresh the readers had been removed because the application now automatically detects the arrival and removal of smart card readers and updates the menu accordingly.

- (IVS-Card Link only) A new Mode menu has been added, which allows you to set the programming mode. De default mode is "Add cards", which adds the cards inserted into the reader to the list of participants. A new mode is called "Remove cards" which allows you to quickly remove cards already added to the list of participants.

- The properties dialog for answers was compacted to make more room for extra options. Instead of separate sections for 'Jump', 'Score', 'Grouping' etc. these options are now all consolidated under the section 'Answer options'.

- (IVS-Professional only) Added a new option to the answer properties. With the option 'Group results with answer' you can choose to have the results of this answer added to the results of some other answer. The answer itself will then not show any results.

- (IVS-Professional only) Introduced a new participants list format. This version not only supports the old format (.cdl extension) but also a new format (.ipx extension). The new format is an XML-file that introduces several new options. It is now possible to enable or disable a participant without having to remove the participant from the list. It is also possible to define multiple identification groups per participant. Each identification group allows you to change the voting weight and/or group name, or enable/disable the participant. You can then choose which identification group you want to use for each question.

- (IVS-Professional only) Added a new option to the question properties. With the 'Identification group' option you choose which identification group from the participants list you want to use for this question. This allows you to give participants a different weight or put them in a different group depending on the question.

- Results are now stored in a new format. The actual result files are still compatible with previous versions, but the information stored per session is now stored in an XML-file rather than an INI-file. This allows for more information to be stored. For example, the session now keeps track of the exact time a question was opened and closed.

- The Keylock Update Utility and the Keylock Test Utility have been replaced with the new IVS-License Manager.

- If you start a presentation, the computer is prevented from entering stand-by state, blanking the screen or starting the screen saver when no user input is detected during a certain period of time. Only when you leave the presentation screen, the computer is allowed to enter stand-by state, blank the screen and start the screen saver.

- When the computer goes to a stand-by state, the Base Stations are automatically disconnected to prevent any problems with the USB port while the computer is in a stand-by state. As soon as the computer resumes from the stand-by state, the Base Stations are automatically re-initialized and a keypad list is loaded when necessary.

Minor changes

- Replaced the almost ten years old default templates (they were introduced in IVS-Basic 4.2, dated May, 2003) with a few more modern looking templates.

- The communication wizard now detects the arrival and removal of serial ports and automatically updates the available ports to choose from.

- A chart without any results would still show a single zero on the axis. This zero has been removed.
- The option "Last answer does not belong to total" now really refers to the last answer and not the last bar. These two used to be the same, but since it's now possible to have less bars in the chart than there are number of answers, the two are not necessarily the same. Also when combined with the "Display answers next in rank" function, this option still refers to the last answer, regardless of where it ends up in the chart.
- The "Jump to slide" option in the properties of the slide and answer now also allows you to make a relative jump. Start the value with a '+' or '-' to make it relative to the current slide. A relative jump is not affected by any slide insertions or removals. E.g. if you set the next slide for slide 1 to '+3', it will jump to slide 4. Even if you insert a new slide between slide 2 and 3, it will still jump to slide 4, which is now the original slide 3.
- A new keyboard shortcut · + ⎇Alt + · was introduced to go to the next slide, regardless of the "Jump to slide" option. E.g. if you are on slide 4, which is set up to jump to slide 7, pressing · will go to slide 7, but pressing · + ⎇Alt + · will go to slide 5.
- Printing a script layout now uses the complete width of the page and uses digit grouping in the results for better readability of larger numbers.
- Improved the speed with which the score fields are calculated, especially when the score must be calculated from a relatively large number of questions with a relatively large number of answers.
- Improved the painting of the background of the slide or text object. Painting is now done using GDI+, which is faster, produces a better image quality and offers more options. GDI+ supports only these image types: BMP, JPG, PNG and TIFF. If you use any other image type, which is not recommended, painting the background will revert to the old method using GDI.
- The Shell Extension is now also available in a 64-bit version. This is necessary for 64-bit OSes to be able to display the 'Open with IVS-Professional' option when right-clicking on a script file. The Shell Extension is now also multilingual on Windows Vista and higher. This means that regardless of the language of IVS-Professional that you install, the shell options (e.g. file type descriptions) are now displayed in the language of the OS (currently only English, German, French and Dutch are supported; for other OS languages the options are still displayed in English).
- Improved the start-up splash screen. It now also shows what the application is doing while starting up. You can click on the splash screen at any time to make it go away.
- When dragging and dropping files onto the application, all types of script files, image files and multimedia files are supported. Previous versions only allowed script files with the .isf extension. This version allows all supported script files. If you drop an image file or a multimedia file onto the application, it will be inserted into the current slide.
- The handles, with which you can resize an object, are now slightly bigger and the corner handles are round to indicate that corners can be moved in a vertical and horizontal direction.
- If you hold the Shift key while moving an object, you can move it either horizontally or vertically.
- The legend text of a question changed to (a shorter version of) the question text whenever you changed the question text. This has been changed so that the legend text now only changes if you hadn't manually changed it into something else.

- The options Select all and Deselect all from the Edit menu are now also available on the template slide.
- When you leave a slide while the voting is open and a time bar is running, the time bar automatically starts running again when you return to this slide. Note that the remaining time is reset, so the time bar starts again from original time that was set.

Bug fixes

- In the properties of the chart, the Number of decimals was not enabled even though the type was set to Percentages. Changing the type to Absolute and then back to Percentages would enable it.
- When using a temporary license, the time left as indicated in the splash screen was the time left from the previous start-up instead of the current start-up.
- When using a serial RF-I or RF-II Base Station connected with a USB-to-serial converter cable, the Base Station would not always initialize. When it did initialize, it would soon go offline.
- With multiple charts on the same slide and linked to the same question, one displaying normal results, the others displaying a crossing, changing the properties of one chart also influenced the results displayed in the other charts. For example, the chart displaying normal results would suddenly display crossed results as well.
- With an identified session already started, initializing the Base Station using Communication > Settings would cause that no votes were received and the Base Station went offline after trying the close the voting. Initializing the Base Station with the Communication > Initialize cluster option would not cause this strange behavior.
- Voting on an identified question with multiple Base Stations without having started a session, could sometimes cause the Base Stations to stop sending votes at all. Trying to close the voting would make the Base Stations go offline. The functionality of being able to vote without having started a session has now been completely removed. You can only see the results after having started a session, regardless of whether you have an identified or an anonymous question.
- When using the option to not show all bars in a chart, the percentages of the bars would change. The total amount of visible bars would add up the 100%, instead of the total amount of available bars.
- Using the options "Cross/Compare to 100%" and "Last answer does not belong to total" would leave some ridiculously large values in the last bar.
- When only one bar was visible in the chart, the option "Normalize to 100%" would take that single bar as 100% causing no normalization to occur.
- Opening the properties of a question and clicking OK without changing anything would make the question options no longer respond to changes made in the template.
- (IVS-Professional only) The Base Station locator could remove ports that were just added when linking the Base Stations twice and choosing a different starting port for the second time.
- (IVS-Professional only) When displaying an average score in the Score field, the results were inaccurate when some people had not voted.

- When a combination of a Lite Base Station and another type of Base Station was initialized, you wouldn't be asked to load the last used list upon application startup, which would leave the Lite Base Station without any initialized keypads.
- When exporting to a CSV, the results would all end up misaligned when the second question had more answers than the first question, but less answers than the number of voters.
- When exporting individual results or individual scores, you might end up with two export files, one for identified results and one for anonymous results, even if the script was fully anonymous. This could happen after starting a session, then importing example results and then importing the original session again.
- (English version only) When the Base Station did no longer respond, the message "Format '%d' invalid or incompatible with argument" was displayed rather than a message saying that the Base Station didn't respond.
- When a question or answer was inserted without any text, and the vertical alignment was set to center or bottom, the question or answer number wouldn't show.
- When a non-English version of IVS-Basic or IVS-Professional was installed for the first time on an English version of Windows, a folder called My Scripts was created in the user's profile. However, IVS-Basic or IVS-Professional would look for the localized version of that folder, which could not be found, and therefore they would open the Documents folder instead.
- If a new slide was inserted with the New slide option from the Insert menu, and the option 'Duplicate all objects on slide' was used that had to copy a question to the newly inserted slide, any fields referencing a question range after the newly inserted question were not updated to reflect the extra inserted question. For example, if a score field was set from question 1 to question 3, and you would add an extra question between question 2 and 3 using the method mentioned above, the field would remain set to question 1 and 3, instead of being updated to question 1 and 4.
- After voting on a question on a slide that contains more than one result chart, with at least one of the charts linked to the current question, any crossing or comparison would only be performed on the chart belonging to the current question. Repeating the crossing or comparison would then perform on the remaining charts as well.
- When resizing the right side of an object, the object could also move slightly upwards and/or to the left.
- When switching to the next slide and then back again while the voting was still open, the results received so far would already be shown, even if the result diagram was not set to be interactive.
- (IVS-Card Link only) If some cards were already programmed and a name list was imported, the first name of that list was shown in the name field. However, if you clicked the Start button, the second name would be shown, which would make it impossible to program the first name from the list.
- If you opened the voting in the presentation screen while having an animated GIF on the slide, the voting would open, but in some cases the status could hang on Opening. It was then no longer possible to close the voting, because of the status still being Opening. Going back to the edit screen would change the status to Opened and would allow you to close the voting.
- If the option Calculate answers next in rank was checked, and you were allowed to give three answers for example, the first answer was not rated with three point, but with only one point. After

giving your second answer, your first answer would be rated with two points and the second with one point. Only after giving your third answer, the first would be rated with three points. So if you decided to only give one answer, this would be rated with one point instead of three.

- When printing to JPEG, PNG or Bitmap, if you cancelled the folder selection dialog and then decided to print to a JPEG, PNG or Bitmap again, printing would fail.
- When copying an image object to the clipboard, not only the object itself, but also the entire image should be copied to the clipboard. The latter was not the case anymore, and could, in some circumstances, lead to the application shutting down unexpectedly.
- Changing the default printer using the Settings button in the print options dialog could only work for the first time something was printed. When printing again, the default printer might be used again.
- When exporting results to a file for the first time, the file types in the save file dialog were set up correctly. For each next time you exported results, the file types would be added to the already existing file types, which would make the file types appear twice in the list.

Version 4.4.12 – Released 01/17/2012

New features

- Updated the communication plugin for the CC100. This new plugin performs much better when large amounts of votes are received in a short period of time.

Minor changes

- The option introduced in the previous version to determine how many bars to show in the chart had the side effect that after starting a session, all charts would show 0% for all answers, if the question had not been voted yet. In this version, that side effect has been removed. The charts will stay empty as long as no votes are available for that question.

Bug fixes

- When comparing or crossing a question, the question list dialog box would show the questions with their slide number as if it were their question number.
- When comparing questions a question might show up empty even though it has been voted. Whether a question showed up empty depended on whether a certain keypad had voted or not.
- Under some circumstances the Lite Base Station would not initialize when clicking the Initialize button. Clicking again would then initialize the Base Station without any problems.
- When using an RF-I Base Station, closing the voting would make the Base Station go offline.
- On some computer systems an RF-I or RF-II Base Station could not be initialized when connected to a real serial port. It could only be initialized when using a USB-to-serial converter cable.
- When pressing · + Alt + · too many times, an Access Violation would occur.
- Printing a script to JPGs while crossing all slides would not cross the slides and give an Index Out of Bounds (-1) message when a slide without a question was encountered.

Version 4.4.11 – Released 12/16/2011

New features

- The communication wizard was updated to support more COM-ports. It can now show a maximum of 16 ports, with any port between COM1 and COM64.

- The communication wizard now differentiates between RF-II channels and Lite channels. This is because even though the wizard tells you to select different channels for each Base Station, you can still use the same channel for an RF-II Base Station and for a Lite Base Station.

- Updated the communication plugins for the Lite Base Station and the RF-II Base Station. These new plugins perform much better when large amounts of votes are received in a short period of time. There is also a separate plugin for the RF-I Base Station.

- (IVS-Professional only) Added a new option in the Results menu called Multiple-choice Distribution. For a question that could be voted on multiple times, this "crossing" shows how the multiple choices are distributed amongst the audience. You can, for example, see how many people voted 1, 2, 3, 4, how many people voted 1, 3, 8, etc. The results can also be split in different references, like a normal crossing. Note that at this moment, the order of the votes is not taken into account. This means that if someone voted 1, 3, 8, and another one voted 8, 1, 3, and another one 1, 8, 3, this will all be the same.

- The results in a chart can now automatically be compared, crossed or distributed. In the properties of the chart, set the desired question in the Cross & Compare tab. Note that you can select either a question to compare with, to cross with or to distribute. You cannot have all three. Also note that this setting is linked to the question number, and not the question itself. This means that if you add or remove questions, this question number is not automatically updated to reflect the new question number.

- If you have multiple charts on one slide, crossing, comparing or distributing will affect all charts. There is now an option to select a single chart, so that you can cross, compare or distribute only that single chart. Use the keys · + ⎇ + ⌨1 to select the first chart, · + ⎇ + ⌨2 to select the second chart, etc. Use · + ⎇ + ⌨0 to select all charts. Note that the first chart is the one that was first placed on the slide (the one in the background). Also note that this option allows you to select a single chart out of a maximum of nine charts.

- The properties of the chart have two new options to determine how many bars you want to show in the chart. For example, if you have 20 answers, you can set the first displayed bar to 1 and the maximum number of bars to 5, to only display the first five answers. If you then set the first displayed bar to 6 and leave the maximum number of bars to 5, you get bars 6 through 10. You can also use the new key combinations · + ⎇ + · to move to the next set of bars, and · + ⎇ + · to move to the previous set of bars. Note that the · + ⎇ + · key combination is not limited. If you press · + ⎇ + · 20 times, you also have to press · + ⎇ + · 20 times to get to the first set. Also note that some display drivers use the · + ⎇ + · combination globally to flip the screen upside down and · + ⎇ + · to flip it back to normal. If this happens, please disable the key combination in your display driver options.

- Added an option to the properties of the question to have the answers ordered from high to low. This only applies to the order of the bars in the result chart. Normally, answer 1 is at the top and answer 9 at the bottom. If you enable the option to have the answers ordered from high to low, number 9 will be at the top and number 1 at the bottom. Please note that you have to make sure that the actual ordering of the answer texts matches the order of the result chart. This is not done automatically. Also note that because of this option, the 'Display answers next in rank' option has also changed. In previous releases, this option would rank the answers from high to low. It will now rank from low to high. To get the same behavior as in previous versions, also use the option 'Answers from high to low'. For older scripts, the 'Answers from high to low' option is automatically enabled when the 'Display answers next in rank' option is also enabled. For newer scripts, you have to do this yourself.

Minor changes

- After initializing the keypads without actually having initialized anything, you would still be asked to save the list or test the keypads. You will now only be asked to save or test if at least one keypad has been initialized.
- The field of type Result can now also display the supermajority of voters and participants (in this case two thirds of the total votes), the simple and supermajority of voters and participants rounded upwards (this equals half of the total plus one, rounded upwards) and the total result of non-voters.
- The field of type Network Status can now also display the total number of valid and invalid votes and the simple majority of the number of valid votes.
- Updated the drivers for the Base Station to version 2.8.14.0. These drivers are signed with a VeriSign certificate and a Microsoft Cross-Certificate, so that these drivers can also be used on the 64-bit versions of Windows. Also updated the Card Reader drivers to version 1.2.6.5. These drivers are WHQL certified.
- (IVS-Lite Link only) Added two checkmarks in front of the ID and Name field. When either of them is checked, the cursor will move to that field after programming a keypad. If none of them are checked, the cursor will move to the Name field if it contains text, or move to the ID field otherwise.
- Updated the bitmapped status LEDs in the status bar and the Communication Wizard to one drawn using GDI+.
- (Windows Vista and higher only) The application sets the Windows UI language to the current application language. This means that some basic Windows UI elements appear in the application language rather than the current Windows language. When you have installed any language packs (Windows Ultimate version only) in the application language, all Windows UI elements appear in the application language, rather than the current Windows language.
- (Windows Vista and higher only) Updated the application manifest to include the DPIAware property. This property indicates that the application itself takes care of scaling the application windows at higher DPI levels. Without this property Windows 7 would scale the application windows, which would make it look like a scaled bitmap image.

- Updated the Communication menu. The Initialize Keypads submenu was integrated in the Communication menu. The Restore Communication and Save List options were renamed. The 'Initialize keypads from list' option can no longer be used for a Lite Base Station, because this makes no sense. Use the 'Initialize all keypads' option instead.
- A new warning message is displayed when you load a list of initialized keypads while all connected Base Stations already contain keypads. The warning will not be displayed if one or more Base Stations don't have any keypads.
- The question if you want to load the last used keypad list will now only be asked if you use Lite Base Stations and no longer when you are using RF-II Base Stations.
- Fixed several typos and wrong translations in the various warning messages.

Bug fixes

- When a field of type Network Status was put on the background slide, it was not updated properly.
- When a field of type Network Status was put on the foreground slide, it was under some circumstances not updated properly.
- On computers with a higher DPI setting (higher than 96 dpi) the question and answer number and the text of the timebar were displayed in a bigger font size than the rest of the text. This has been corrected, but is still the case for texts in the chart.
- In the properties of the result chart, on the cross and compare tab, the settings for comparing were obscured by the settings for font size adjustment, on computers running with a higher DPI setting.
- When voting a group question, the group name of people that did not vote for a specific group was reset to an empty group instead of leaving that group name to the original name.

Version 4.4.10 – Rereleased 05/23/2011

Bug fixes

- On Windows 7 computers that had a wrong version of wdrvr.dll, reading the keylock would first try the USB and if not found, would also try LPT. Trying LPT would hang the dll, in effect hanging the entire application. This rerelease installs the correct version of wdrvr.dll, always overwriting the version already installed. It also has more checks for wrong values in the registry, and only reads the keylock when all values are correct. It also changes a value in the registry so that the wdrvr.dll will no longer try the LPT anymore (although this version shouldn't even be able to try the LPT anymore).

Version 4.4.10 – Rereleased 04/22/2011

Bug fixes

- This version supports a new version of the proxy.xml, as well as being compatible with the standard proxy.xml. Unfortunately, the standard version was looking for questions nodes instead of question nodes. This would in effect make it incompatible with the standard version and wouldn't display proxy results anymore. This was changed back in this rerelease.

Version 4.4.10 – Rereleased 04/07/2011

Bug fixes

- In the score field the total voting time was displayed with five decimal digits. This was for testing purposes only and shouldn't have ended up in the release version. This was reverted back to two decimal digits.

Version 4.4.10 – Released 03/09/2011

New features

- The IVS-Lite Keypad Information tool can be used to check the battery status of the Lite keypads.
- Added the option to vertically align the text within the text box. The vertical alignment can be set up in the text editor, but it is only visible on the slide itself.

Minor changes

- The paragraph numbering option has been expanded with several new numbering options. They can be chosen from the drop down menu of the paragraph numbering button in the text editor.
- Added the 'Paste without formatting' option to the popup menu of the text editor. This option pastes any text from the clipboard in just plain text, removing any formatting options, so that the formatting of the original text is retained. The new paste option can also be accessed through the ⇧Shift + · + V shortcut.
- The option 'Absolute/Percentages' from the 'Results' menu does no longer simply change between absolute values and percentages. It now changes between absolute values if the original setting is something else, or percentages if the original setting is absolute values, and the original setting. For example, if the original setting is 'Percentage of total', you now change between absolute values and percentage of total.
- When a question that is set to display the results as 'Percentage of first vote' is crossed, the percentages are now based on the total number of first votes of the crossing instead of the total number of first votes of the entire population.
- The temporary license now shows how much time there is left for the license.
- The temporary license has been extended from a maximum of five days to a maximum of 127 years.
- The option to use a wireless presenter is automatically disabled when the software is closed.
- The option 'Cross/Compare to 100%' now also works when the results are displayed as 'percentage of first vote'.
- On Windows Vista and higher, the open and save dialog now support a favorite link. Also the Browse for Folder dialog has been replaced by an Open Folder dialog, because the Browse for Folder dialog does not seem to support network locations on Windows 7 anymore.
- Support for a new Proxy.xml version has been added. This version is simpler and can easily be maintained by Microsoft Excel. To use this new version, the document element tag must have a version attribute with a value of "2.0". Below the document element tag are a single set of Proxy tags with a question, answer and value attribute.

- (Windows 7 only) Added support for the taskbar jump list.
- Added a print plugin to print the slides to PNG images.
- The field of type 'Result' now has two extra options to display the simple majority of the number of votes and the simple majority of the number of participants.
- The field of type 'Result' can display the results of an answer in absolute values, percentages based on the number of votes and percentages based on the number of participants. The last two are the same for questions that can be voted on only once.
- In the properties of a question you can now also set the minimum times to votes. Anyone who votes less than this minimum amount will have all of his votes rejected.
- The field of type 'Network status' has three extra options to display the number of valid votes (for people who have voted at least the minimum amount of votes), the number of invalid votes (for people who have not yet reached the minimum amount of votes) and the simple majority of the valid votes.
- Moved the splash screen on startup slightly upwards, so that it won't entirely cover any message box that might also appear during startup. On Windows Vista and higher, under some circumstances, the message box could appear entirely covered by the splash screen. The application would seem to hang, because you were supposed to click on the totally invisible message box.
- Renamed 'Quorum' to 'Simple majority' because the value displayed is in fact the simple majority, which is not necessarily the same as a quorum.

Bug fixes

- The option 'Percentage of first vote' did not work correctly for questions that were crossed several times.
- The median value would often be 0.5 points too high.
- When inserting a new field, the 'Display', 'From question' and 'to question' were not filled in correctly.
- The Base Station Locator failed to link Base Stations to a COM port when the SERIALCOMM key was missing from the registry. This could happen on systems not having any real or virtual serial ports. A work-around is to create this key if it does not exist.
- Opening two different scripts, starting a session in both scripts and then closing one session could make the other session inaccessible.
- · + U to split a crossed question did not actually split the question when invoked from the presentation screen when the presentation screen was displayed on the same monitor as the edit screen.
- On an interactive slide with a very large background image an Access Violation could occur when the slide was very frequently updated due to a lot of incoming votes.
- On an interactive slide there was a memory leak whenever the result chart was updated.

Version 4.4.9 – Released 12/15/2009

Minor changes

- Improved the window handling when opening an existing script or creating a new one. You won't see the window of the script get maximized any more.
- Updated the drivers for the Base Station to version 2.6.0.0. These drivers are signed with a VeriSign certificate and a Microsoft Cross-Certificate, so that these drivers can also be used on the 64-bit versions of Windows. Also updated the Card Reader drivers to version 1.2.1.2. These drivers are WHQL certified.
- The installation script for this version is created using Microsoft's WiX toolset instead of InstallShield express. This toolset requires an XML file describing the installation requirements, which is much easier to maintain.
- The drivers for the Base Station and the Card Reader are not only pre-installed, but are also installed for already connected devices and for phantom devices. This means that when a Base Station is connected during the installation of the software, its drivers are automatically updated to the latest version. If a Base Station is not connected, but the drivers were already installed, it will automatically update its drivers once it's connected.

Bug fixes

- When the option 'Display mean' or 'Display deviation' was enabled, and the option 'last answer does not belong to total' was enabled, you would get a 'Range check error' if there were no results in your script. If there were results, you wouldn't get this error, however, after saving and reopening your script, it would still give this error and refuse to open your script.
- When the option 'Normalize to 100%' was used, the mean value and the deviation could differ from the real values.
- On Windows Vista or Windows 7, the application could hang when starting up. On Windows Vista 64-bit or Windows 7 64-bit, the application would only work the first time after a reboot. Any subsequent attempt to start the application would result in the application hanging at startup. This was caused by the keylock driver failing to read the keylock and hanging the entire application. An updated keylock driver prevents this, however, the new driver no longer supports the parallel keylock.
- Opening the voting on a question that had already been voted on would give an error message when the corresponding result file could not be opened. This would leave the status of the Base Station to 'Opening' which could never be changed anymore. Closing the application would solve the problem. There is now an extra 'File Error' status indicating something is wrong with the result files. This error can only appear when trying to open the voting. The voting will not be opened until the problems with the result file are solved.
- The default score, that can be set in the properties of the question, was not taken into account anymore.

Version 4.4.8 – Released 09/23/2009

Minor changes

- Added an option to the Score field to only display the score, name, etc. when the total score is positive, i.e. someone has more than zero points.

Bug fixes

- (Lite Base Station only) The Lite Base Station not only sends legal votes, but also sends 'bogus' messages. These are filtered out by the communication plugin. However, the plugin would still send a message to the IVS software to indicate that a vote was received, which would lead to unnecessary screen updates.
- Whenever a vote was received, the entire screen was updated, even though it was already clear that nothing on the screen had changed. This would lead to unnecessary slow screen updates.
- When the timebar was set to Close the voting after so many seconds and Go to the next slide after so many seconds, it would immediately start counting down to go to the next slide instead of waiting for voting to be opened.
- When the aspect ratio was set to 16:9, an image used as the background for the slide would still be in a 4:3 ratio, which would make it look compressed.
- (IVS-Card Link only) After programming a set of cards, you could only check the card if it was still in the card reader. Once removed and reinserted into the card reader, it could not be checked any more.

Version 4.4.7 – Released 07/21/2009

New features

- Added support for a license stored in the Base Station. Multiple licenses can be stored in multiple Base Stations and they will all be added up. Note that when a USB license is available, this one will take precedence and the licenses in the Base Stations will be ignored.
- Added support for a temporary license being less temporary. A temporary license can now last for as long as 128 hours (5 days and 8 hours). The actual duration can be determined by the license code.
- Added more preferences. It is now possible to set up an update checking interval. It is also possible to set up a Remote Presenter. This option allows for another shortcut key to be assigned to the 'Change voting' option in the 'Voting' menu, so that the Presenter can be used to open/close the voting.

Minor changes

- (IVS-Card Link only) Improved the card reader checking mechanism. This prevents the application from consuming about 70% processor time. This has been reduced to about 0% processor time.
- The Preferences dialog now checks each time to see if the monitor count has changed and updates the combobox accordingly. This prevents you from having to restart the application after setting up an extended desktop.

- The Score field now also calculates the score for a question that can be voted on more than once instead of only taking the first answer given.
- The option 'Cross/Compare to 100%' no longer prevents you from selecting anything else but percentages. You can leave this option enabled and still switch to absolute values. In that case the option will not be used, because it doesn't make sense for absolute values.
- Locking the presentation screen no longer reloads all objects on the slide. This means you can even lock the presentation screen while a timebar is running without the timebar starting over again.
- Crossing, comparing, splitting or showing the correct answer also no longer reloads all objects, so that an empty timebar stays empty when showing the correct answer.
- The keyboard shortcuts · + $\boxed{!_1}$ through · + $\boxed{J_0}$ to split a crossed question or to display the 1st, 2nd, etc. choice now also work from within the edit screen.
- The option to set a primary and secondary bar color in the properties of a question has been removed. Instead, you can now set up a maximum of five (IVS-Basic, IVS-ID) or ten (IVS-Professional) bar colors in the properties of the result on the template slide. This means that you no longer have to set up a single color for each question you ever want to compare with.
- The formatting of the question and answer number is no longer based on the formatting of the first character of the text, but instead on the entire formatting of the text. If this formatting is ambiguous, the formatting of the last character of the text (usually the CR/LF) is taken. The number is never underlined, regardless of whether you underline the entire text. The formatting and underlining is now according to how Microsoft Word formats and underlines paragraph numbers.
- Added a new action to the Advanced properties of a text object. This allows you to switch to the Risk Analysis application by clicking on a text object.
- The sound effects of the timebar can now also be set in the template.
- When a Base Station is not responding or was removed from the system, the notification window now includes the COM port of the Base Station that was not responding or has been removed from the system.
- (Keylock Update Utility only) Updated the UI so that it immediately shows for which software package the keylock can be used and up to which version. This is instead of having to first select the software package to be able to see the version.

Bug fixes

- Unable to load a list of keypads that were initialized on channel 0.
- When comparing questions that had an empty legend text, the legend in the chart would display 'Series0', 'Series1', etc. This has been changed to display 'Question #', where # is the number of the question.
- A question or answer without any text in it would not follow the text formatting as set up in the template slide.
- Importing a text script with a correct answer would not set the score to 1.
- (French version only) The text editor for entering question and answer texts was missing the images for the Bold (Gras) and Underline (Souligne) buttons.

- (Arabic version only) The Yes/No/Don't Know answer option was conflicting with the reading order option. Setting one would also set the other.
- The new status bar introduced in version 4.4.6 was being repainted 10 times per second, even though no changes in the status had taken place. Depending on your processor speed, this would drive CPU usage from anywhere between 10% to even as high as 90%. Repainting now only takes place after a status change, which drops the CPU usage back to 0%.
- Connecting both a Lite Base Station and an RF-II Base Station in that order would cause the software to go to Stand By as soon as the Lite Base Station was stand by, even though the RF-II Base Station could still be closing the voting. It was then possible to open the voting again, which would only open the voting on the Lite Base Station. Closing the voting would lead to an "Out of Memory" error. The software now waits until all Base Stations report Stand By.
- Using the option 'Percentage relative to first vote' would lead to ridiculously high percentages when the 'Vote weight for voting' option was also used. This was caused by the fact that the voting weight was not used when counting the number of first votes.

Version 4.4.6 – Rereleased 02/26/2009

Minor changes

- When multiple Lite Base Stations are connected, the ones that are not currently initializing keypads will be set in mute mode. This is to prevent that keypads cannot be initialized on the current Base Station because they will respond to one of the other Base Stations that is on the same channel as the keypad being initialized.

Version 4.4.6 – Released 02/10/2009

Minor changes

- The status bar was replaced by a new status bar component. This will hopefully get rid of the status bar sometimes showing menu options in its panels.
- The way options are saved in the registry was changed. Changed options are now immediately saved instead of upon exiting the application.
- The Communication Wizard now remembers which channel was used for a Lite Base Station. Previously it would switch to channel 0 if a channel higher than 10 was used and the Base Station was not connected.

Bug fixes

- When the options 'Group question' was checked, the option 'Reference question' was disabled. This is not necessary, a group question can also be used as a reference question.
- (IVS-ID only) The option to use the voting weight was disabled by default and could not be enabled.
- (Lite Base Station only) While initializing keypads, a keypad could sometimes fail to initialize even though the software said it initialized correctly. This behavior has been changed, but this also means that a keypad that had already been initialized cannot show anymore that it cannot be initialized

again. A keypad that is already initialized will still show a green led when a button is pressed for a second time. Of course the software will not count it again.

- When opening the voting, the field to display the total results would display '1' instead of '0'. This happened only when the result was set to be displayed in percentages (which shouldn't have been possible in the first place).
- When opening scripts saved with earlier versions, the bars in the result diagram that had a gradient would run from black to color instead of from color to white.
- When copying a question, the legend text of the question was not copied.
- After printing a script, the status bar would display that the last slide printed was shown, even if the first one was actually shown. After clicking once on the slide, the correct slide number was shown.

Version 4.4.5 – Rereleased 01/14/2009

Bug fixes

- (Lite Base Station only) The work-around for the Lite Base Station that was introduced in the previous rerelease only worked during an open voting. But it also had to work during the initialization of the keypads. This was fixed in this rerelease.

Version 4.4.5 – Rereleased 12/15/2008

Bug fixes

- (Lite Base Station only) The Lite Base Station could sometimes forget to send its data. A work-around was created which sends a message to the Base Station every second, so that the Base Station must answer and must send data that it already buffered but did not send yet. This work-around is only performed for Base Stations with a version less than 1.01. For newer Base Stations the problem has been resolved.

Version 4.4.5 – Released 11/24/2008

New features

- Importing from and exporting to a text file now also supports text objects. To include a text object in the text file, start the text with an ampersand.
- Added an automatic update checked. Upon application startup, a check is made to ensure that the latest version of the software is used. Also added an option in the Help menu to do a manual check.
- (IVS-Professional only) Added a new property 'Group question' to the question properties. This option is only available for identified voting, and can be used to let the participant choose to which group he belongs. Each answer of this group question defines a group name. The group name is taken from the legend text of the answer, so you can make long answer texts and short group names. Voting this question will completely overwrite the settings previously stored with the IVS-Card Link application. If a participant does not vote, he will be put in an empty group. The previous group, set either with IVS-Card Link or with a previous group question, will not be kept.

- Added a new color option to the Background properties of a field of type Score. When the Display setting is set to 'Name of group', you can choose the background color 'Group color'. This will set the background color of the field to the color of the group. The group color can be set with a group question. Each answer is a group name, and each answer color is a group color.
- A question now has a legend property. This legend text will be used when comparing questions.
- A question also has a bar color property and a secondary bar color property. The primary color will be used when comparing this question with a different question from the same script. The secondary color will be used when comparing this question with itself but with results from a different session.
- When using a bar chart with a gradient bar, the start color and a middle color can now be specified and the direction of the gradient can be specified.
- A new field type 'Network status' has been added, which allows you to display the number of active keypads, or the number of votes received, etc.

Minor changes

- The result diagram has several new bar types for displaying a bar chart.
- Pasting an image from the clipboard now uses a random filename instead of a sequentially numbered filename. This is to prevent that copying slides from one script to the other will overwrite an image with the same filename.
- Added a drop shadow and an exponential slide (instead of a linear slide) to the splash screen.
- Moved the separate Font dialog for the Result Diagram and the Timebar to the properties dialog.

Bug fixes

- The Lite Base Station could go offline sometimes. When closing the voting took longer than two seconds, the software would go to stand-by even though the voting was still closing. Immediately opening the voting again would make the software go to offline.
- If a Base Station was connected and set up to automatically initialize at startup, it would ask to load a keypad list. However, if a list was never saved before, loading the list would give an error message.
- If the software was set up to not initialize any Base Stations at startup, it would still ask to load the last used keypad list.
- Initializing a Lite Base Station could take a considerable amount of time, which was unnecessary.
- Clicking on a link that had to switch to the next slide while the voting was still being closed could lead to unpredictable results.
- Editing the text in the template slide is no longer possible. Because the entire text has to be selected, entering a single letter would already overwrite the entire text.
- When importing a session, after deselecting any item in the list, the OK button was not disabled. Clicking the OK button would lead to an Access Violation.
- When editing the font of a field, the font combobox would state that the font name was System even though the actual font name was Arial.
- Using Lite keypads on an identified question, a corrected vote could be corrected again. This could lead to a negative vote counter and an Access Violation.

Version 4.4.4 – Released 09/29/2008

New features

- Added support for identified voting with the IVS Lite Base Station and keypads. Use the IVS-Lite Link tool to create a list of participants. Each participant gets an identified Lite keypad.

Bug fixes

- When using both user-specific and machine-specific answer templates, the wrong template would be inserted when choosing one from the Insert menu.
- Saving a script as a text script would put all questions and answers on one slide.
- Closing the voting on a different slide did not return to the slide where the voting was opened.
- The software might refuse to start when another application (e.g. the Base Station Locator) was open.

Version 4.4.3 – Released 06/03/2008

New features

- Support for the new IVS Lite Base Station and keypads.

Minor changes

- In the properties of the chart, an option was added to remove the thin black frame from each of the bars in a bar chart.
- In the properties of the chart, the options to have the value displayed on top of the bar or just below the bar were replaced with an option to indicate the distance between the value and the bar. This allows for greater flexibility in displaying the values.
- Updated various icons used in the applications.
- (IVS-Professional only) The Participant field to show the names of participants that voted for a particular answer now has the option to start with a certain name and only display a certain amount of names. This allows you to display the names in columns.

Bug fixes

- When moving multiple objects around, they were placed at the new location one by one instead of all together at the same time.
- When setting the text alignment of a question or answer to something else than left alignment, any new question or answer would still left align.
- If a text had only one word underlined, editing that text would display the entire text as underlined.
- When opening a file from the Most Recently Used file list, it was automatically removed from this list when the file could not be found. However, the File menu was not updated.
- When opening the voting on a question with only one answer, the vote settings were taken from the previous question. For example, if the previous question had five answers, you could vote from 1 to 5, even though the current question only had one answer.

- (Arabic version only) The popup menus were still in the left-to-right reading order. This has been changed to reflect the correct reading order.
- On some Windows XP computers and Windows Vista computers with disabled Aero interface, the screen could flicker when opening a script and after editing texts.
- An Access Violation could occur when going to another slide using the `Shift` + · + `G` in the presentation screen while the voting was still closing. Going to another slide has been blocked while the voting is being closed.
- Opening and converting an older script could lead to an extremely large script, which would make the script unnecessarily slow.
- When using a CC100, the program would state that the voting was opened before it got a confirmation by the CC100. Immediately closing the voting could lead to the CC100 not responding anymore, because it stayed in an opened state while the software was already in a closed state.
- The Base Station Locator could sometimes link two Base Stations to the same COM port.
- Images used as the background for a text object or a field object were not saved into the Images folder of the script.

Version 4.4.2 – Released 03/21/2008

New features

- Support for the new IVS Lite Base Station and keypads, although the communication dll is not yet installed.

Minor changes

- Improved speed when displaying a slide containing lots of text.
- When opening a file from the Most Recently Used file list, it is automatically removed from this list when the file cannot be found.

Bug fixes

- The check for an already running instance did not work anymore. This resulted in a new instance being started each time a script was opened from the explorer. It also caused the link from Power-Point to IVS to not function anymore, because it didn't go back to IVS but instead started a new instance of IVS.
- Fixed two memory leaks in the handling of fields.
- Moving an object in the edit screen did not immediately move the same object in the presentation screen.
- Printing a script layout did not take into account the voting weight.
- After aligning the answers to the bars in the chart, the formatting of the last part of some answers could change back to the formatting as set up in the template, while the first part of the answer kept the formatting as set up for that answer.

Version 4.4.1 – Released 02/19/2008

New features

- Updated the Multimedia object to use DirectShow instead of Video for Windows. It can now play any file that has a DirectShow filter installed.
- The Multimedia object now displays an error message in the top left corner if the DirectShow system could not be initialized, or the file could not be found or rendered.
- It is now possible to place more than one Multimedia object on a slide. They can all start playing at the same time or one after the other. A new start action was introduced that allows the object to start playing after the previous one has finished playing.
- Updated the Timebar object to use DirectShow to play the sounds. The timebar can now play any file that has a DirectShow filter installed instead of only wave sounds. It can even play video files, but will of course only play the sound portion of it.
- Updated the way rtf texts are displayed. It now uses the ITextServices interface rather than a hidden RichEdit window. This also allows for more font and paragraph settings to be set up in the template.
- A new chart type '4-quadrant chart' was added. This chart type takes two questions with the exact same answers. It calculates the ranking of each of these questions and then puts the results of the first question on the X-axis and the results of the second question on the Y-axis.
- A new field type 'Cumulatives' was added. This field can display the total result per answer of a question or a group of questions. It can also display various statistical values of a question or a group of questions.
- The Base Station Locator tool now lets you choose from which serial port to begin with linking. This allows for serial Base Stations to be used on COM1 and COM2 and Network Base Stations on COM3 and further.
- The option 'Align answers' now makes the answers sticky: they stick to the bars in the bar chart. If the chart is moved, the answers move along with it. Note that this is a global option which will make the answers sticky throughout the entire script. Only the answers on the current slide are actually moved to their new position. All other answers stay on their original position, but will snap to the bars as soon as the slide is shown.

Minor changes

- When changing an image object or a multimedia object, the new image or multimedia will fit within the bounding rectangle of the previous image or multimedia, instead of using the full size of the new image or multimedia.
- Saving a list of keypads will also store the channel number of the Base Station. When loading this list again, it will try to match a Base Station based on the channel number rather than the port number. Note that it will not try both: if a channel number is present, the channel numbers must match; if a channel is not present, the port numbers must match.
- When the presentation screen is started on a secondary monitor, the cross, compare and go to slide function will no longer bring up the task bar to wait for input, but will instead bring up the normal dialogs on the primary monitor.

- The option to rotate the legend text on the axis with 90° was changed to rotate it only 45°. This makes the labels more readable.
- Updated the Keylock Test Utility and the Base Station Locator so that, under Windows Vista, they no longer need to be started with administrator rights. Only when administrative rights are required for a specific function, you will be asked to give permission.
- A new option 'Adjust bar width to' has been added to the Cross & Compare tab of the result diagram properties. This option allows you to set up a different bar width that is used during a crossing or comparison.
- The field type 'Score' can now also display the minimum, maximum and average score of a certain group.
- Increased the total time a voting can stay open using the voting time from 27 minutes to 49 days.
- A new option 'Percentage based on first vote' was added to the Chart properties. This can be used when voting more than once and will display the results in percentages, based on the total number of people that voted at least once. This could give you results of more than 100%.
- When using a 2D chart, it is now possible to hide the axes but still have the values on the axes.
- When reapplying the template, you can now indicate whether or not to put the objects back to their original location.
- The screen aspect ratio is saved with the current script. If you open a script which was made with a different AR, the current AR will change to match that of the script.
- The default resolution for the slide has changed for ARs other than 4:3. In previous versions, the width of the slide was always 1024 and the height was automatically adapted depending on the selected AR. Starting from this version the width and height of the slide are variable, depending on the selected AR: 4:3 = 1024x768; 5:3 = 1280x768; 5:4 = 1280x1024; 16:9 = 1280x720; 16:10 = 1280x800; 25:16 = 1600x1024; 85:48 = 1360x768.
- If a field of type 'Score' is inserted and none of the questions use identified voting, an error message will be displayed in the field, even if no session has been started yet.

Bug fixes

- Field objects that were on the background slide were not updated when the voting was closed. Going to the next slide and then back would still update them.
- When initializing keypads with more than one Base Station, you were not asked to save the list or test the network.
- When using a large font in the result diagram, the values on top of the bars might get cut off because they fell outside the diagram rectangle.
- Copying multiple answers at once would mix up the legend text of the answers.
- Aligning objects that fell outside the borders of the slide would align the object on the border of the slide instead of aligning them to each other.
- (IVS-ID and IVS-Professional only) The IVS-Card Link Utility might hang upon startup when no readers were connected.
- Cutting and pasting the last slide containing a question to a different location would lose the results of that question.

Version 4.4 – Released 06/12/2007

New features

- (IVS-Professional only) Answers can now be grouped together in different answer groups. When voting more than once, only answers belonging to the same group can be selected. As soon as an answer from a different answer group is selected, all the other answers will automatically be cleared.
- (IVS-Professional only) A text object can have an action associated. When you click on this object, the associated action will be performed.
- Added support for anti-aliasing for BMP, JPG and PNG images. (Note that this requires GDI+ to be installed on the system.)
- Added support for transparent and semi-transparent PNG images. (Note that this requires GDI+ to be installed on the system.)
  Note: GDI+ can be downloaded separately from the Microsoft website. It is included in Windows XP and above.
- Added support for transparent and animated GIF images. (Note that for the moment only one GIF image per slide is allowed.)
- When importing results, the statusbar shows the 'I:', 'A:', 'V:', etc. that were recorded at the moment the voting for this question was opened. This is only displayed when there is no active Base Station connected.

Minor changes

- Improved crossing of results. There is no real limit on the number of questions you can cross with, but for the moment it has been limited to 1 question for IVS-Basic, 2 questions for IVS-ID and 5 questions for IVS-Professional. The crossing uses the colors of the question you are crossing with. When splitting a crossed question, the title of the chart shows all the steps you took to get to this split. Use · + L to return to the original question, or Shift + · + L to go one step back.
- Improved comparing of results. There is no real limit on the number of questions you can compare, but for the moment is has been limited to 5 questions for IVS-Basic and IVS-ID, and 10 questions for IVS-Professional. The legend now shows the text of each question, instead of just 'Question 1', 'Question 2', etc. Use · + L to return to the original question, or Shift + · + L to remove the last question.
- Improved left-to-right and right-to-left support. This can now be set per paragraph instead of per the entire text. Note that these settings are only available when a right-to-left language is installed on the system.
- Improved license handling. If the license was removed after initializing more than 25 keypads, you could vote with all initialized keypads, but only the votes of the first 25 keypads would be used in calculating the totals. This has been changed so that one cannot start a session with more keypads initialized than the license allows.
- The license is checked more often and at different locations. If you connect a license you don't need to initialize the cluster, just to get your license working. The license is also checked when you open the about box or start a session.

- Added a 'K:' in the statusbar that indicates the number of keypads that have voted. This only differs from the 'V:' (number of votes received) if you allow voting more than once. For example, if one keypad voted three times, the 'K:' would be 1, and the 'V:' would be 3.
- The 'I:', 'A:', 'K:', 'V:' and 'W:' in the statusbar can now be separately switched on and off. This allows you to switch off information that you don't need. Just right-click on the statusbar and choose which items you want to see.
- Updated calculation of mean and standard deviation. If the option 'Last answer does not belong to total' is checked, the mean and standard deviation will also not use the last answer in their calculation.
- The field of type 'Score' now lets the user choose which relative score and which maximum score are displayed. One can now choose between the relative and maximum score based on the number of participants per group (that means all participants, whether they vote or not), or on the number of voters per group (that means all participants from a group that actually voted).
- The 'Communication > Initialize cluster' menu option can now only be used to initialize the cluster. If you need to change settings, use 'Communication > Settings' instead.
- Pausing the timebar and the multimedia object has been separated into two different commands. Use ⎋ to pause the timebar and ⇧ + ⎋ to pause the multimedia object.
- Fixed several smaller issues between the different language versions of the software.
- Improved calculation speed of the 'Score' field. Displaying a top-10 is now much faster.
- Added keyboard shortcuts · + ⎇ + F and · + ⎇ + T to the 'Align answers' options.
- Added an extra 'PRES' indicator in the statusbar. This indicator is highlighted when a presentation has been started.
- Added the option to lock the presentation screen when the presentation screen is shown on a different monitor than the edit screen. When the presentation screen is locked, any changes made to the edit screen will not automatically propagate to the presentation screen.
- Added an extra 'LOCK' indicator in the statusbar. This indicator is highlighted when the presentation screen has been locked.
- The result diagram now has an option to display the chart from-right-to-left. This is only useful for the Arabic version so this option will only be enabled when the Arabic language group is installed in Windows.
- When pasting or duplicating multiple objects at once, the newly pasted objects will all be selected. Previously, this was only done when only one object was duplicated or pasted.
- Pressing the Alt key in the presentation screen will no longer open the menu in the editing screen. This could lead to a seemingly unresponsive system, especially when the presentation screen was on the same monitor as the editing screen.
- Added Windows Vista support. Some file locations have changed to comply with the Windows Vista standard. An updated manifest is included in all applications to indicate whether the application requires elevation or not. Each executable and library is now digitally signed. The installation is now built with InstallShield Express 12 and is also digitally signed.
- Dropped support for Windows 95, 98, Me and NT 4.0. Even Microsoft no longer supports these versions. Drivers included on the cd only support Windows 2000 and above.

Bug fixes

- Setting a paragraph to be justified in the text editor did not (always) have effect in the text object.
- (German version only) In the text editor, some characters with "umlaute" were replaced by other characters.
- If a script could not be saved because the file was read-only, there was no warning message. Even the 'modified' indicator would disappear, suggesting that the file was successfully saved. There is now a warning message and the 'modified' indicator stays as long as the file could not be saved.
- If the 'Times to vote' was set to 0, meaning that one could vote an unlimited number of times, the results would not be shown.
- The question number and answer number did not take over the font style of the first line of text.
- The question number and answer number would always be displayed on the left side, even if the first line was set to right-to-left reading.
- If a 'Score' field was set to display the results of a certain group, it was not possible to display this group's name.
- A 'Field' object did not take over the font color of the template.
- (IVS-Professional only) The advanced properties of a text object did not take over the settings in the template.
- Some AVI files could not be loaded by the multimedia object.
- When applying a template, or creating a new script from the File menu, a checkbox 'Do not show this dialog again' was shown, but had no effect. This checkbox has been removed.
- (IVS-Professional only) When a field of type 'Score' was inserted and the option 'Sort on' was turned off, the next time you viewed the properties of this field, the option would appear to be turned on again. In fact, the option was turned off, but the checkbox was still checked. Clicking OK or Apply would actually turn the option on again.
- After changing the number of an answer and then copying and pasting the answers to a new slide would put the answers in the wrong order.
- When closing a script that was still used for the presentation, some unexpected errors could occur. Now when closing the script, the presentation will also be closed.
- Fixed the Stop command of the multimedia object. A wrong command was sent to the driver, that caused some drivers (the midi sequencer for example) to fail with an Access Violation.
- Fixed the Pause/Resume commands of the multimedia object. Some drivers do not support the Pause command but instead execute the Stop command. Trying to Resume playback then fails because the file has already stopped playing. Now, when a Resume command fails, a Stop and Play command will be sent, to continue playback from the beginning of the file.
- Duplicating multiple slides in the slide sorting would result in only duplicating the last selected slide.
- Removing a USB Base Station from the system by either disconnecting the USB cable or the power cable could result in Access Violations. A message box is now displayed instead, indicating that the Base Station was removed unexpectedly.
- Reapplying a template would remove the score from an answer.

- If a Base Station, a CC100 and another Base Station were attached in this order, resetting the keypads would stop after the first Base Station and not continue with the second Base Station.
- If two or more slide sorter views were open at the same time, right clicking in one of the windows would not give that window the focus, resulting in the action to be performed in the wrong window.