Scanstation Manual
V3.3
Imprint

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1. Introduction: Using the Scanstation

The scanning of questionnaires is carried out using the “EvaSys Scanstation”.

![Main application window](image)

**Figure 1: Main application window**

This software can be used on Windows PCs which are connected to a scanner by SCSI or USB, as well as being combined with multifunction devices (MFDs).

Communication with the scanner takes place via the so-called TWAIN protocol. Here, the Scanstation controls the connected document scanner. When co-operating with a multifunction device, the Scanstation regularly checks a source folder, which can be defined, and automatically processes new TIFs contained therein.

The Scanstation creates graphic files with digital copies of the forms. These images are then transmitted to the target system, where the VividForms Reader, as well as the TeleForm Reader (optional), can further process the images. No recognition of the questionnaire’s content takes place in the Scanstation.

To simplify matters these scan processes will be named “batches”.

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In the main window you will see the following buttons:

**Scan**
This button starts the scanning process. Below the button you will see the information about the chosen paper format. You can change this setting in the scanner dialogue (for more information see chapter 2.2).

**Settings**
After entering a password, you will reach the configuration of the Scanstation.

**Manual**
This manual will be shown.

### 1.1. First starting of the Scanstation

When first starting the Scanstation, an input dialogue appears for:

- The password,
- The URL of the EvaSys server, in order to register the Scanstation (you can also input or change the URL in the settings of your Scanstation under “General Settings”, refer to the register card in chapter 2.3 “General Settings”), and,
- The name of the Scanstation for unambiguous differentiation.

After this input, it is checked to see whether the EvaSys server is available and whether a license is free or already assigned to the Scanstation. Please note, that the name of the Scanstation here is irrelevant.

The Scanstation license keys can be found in EvaSys under “System Information/License/Scanstation licenses”.

<table>
<thead>
<tr>
<th>License key</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer name: Electric Paper Training</td>
</tr>
<tr>
<td>License key:</td>
</tr>
<tr>
<td><img src="image" alt="License key" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scanstation licenses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name</strong></td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
</tbody>
</table>

![License key](image)

**Figure 2: The Scanstation license key**

The number of Scanstations is deposited in the license key.
If a new Scanstation is to be licensed in EvaSys, the administrator must activate the option “Automatically assign a license to next requesting Scanstation.”. In order to license a new Scanstation, an unused Scanstation license must be available.

With the brush icon behind each licensed Scanstation, the license of the corresponding Scanstation can be revoked. As such, this vacated license can be automatically allocated to a new Scanstation.

1.2. Automatic Scanstation Updates

At each start-up of the Scanstation, the EvaSys server is automatically checked to see if there are any new updates available.

If this is the case, the corresponding message is shown and the update is offered for download. Once the download is complete, the update has to be installed.

**Note:**

Please note, that to execute the Scanstation updates you must have administrator rights to the computer on which the Scanstation is installed.

There are two different cases for updates to the Scanstation: Mandatory updates and optional updates. In the case of a mandatory update, it is not possible to continue working before the update has been executed. Then there is only the option to either update or to end the Scanstation.

Optional updates can be skipped.

We highly recommend keeping the Scanstation up-to-date.

2. Scanstation Settings

The settings for use are password protected, in order to protect publicly accessible Scanstations from changes to the scanner settings.

![Password required](image)

Please enter your password to change the settings.

[OK]

**Figure 3: Entering the password**
2.1. Settings: Scan Destination Tab

2.1.1. Available transmission routes

**Directory**
The batches are written to a local or network folder. An UNC-path can also be used.

**FTP server**
The batches are transmitted to the appropriate server computer using the FTP protocol.

**Web server/HTTPS**
The batches are directly transmitted to the EvaSys-web server.
2.1.2. **Scan destination: Directory**

The batches are transmitted to a local directory or network drive. You can also use a UNC path.

**Figure 4: Settings for the scan destination**

**Target directory**

This is the EvaSys server's target directory (Default: `C:\Program Files\Electric Paper\VividForms\scanstation\abc`) and it serves as the target directory for the transmission of the scanned files. The VividForms Reader removes these files for the purpose of further processing. Please consult the VividForms Reader Manual if necessary.
Store a backup copy of the batch in the archive directory
Activates the archiving function. The backup copies of the scanned batches offer you the possibility, apart from that of archiving, of virtually repeating a scanning process where there have been possible recognition problems, without having to rescan the original forms.

Archive directory
Backup copies of all scanned batches are stored in this directory.

Also save backup copies of existing files
Even when scanning existing image files, backup copies are stored in the defined archive folder. This option is only applicable if you have activated the option “Existing files” in the tab “Scanner”.

Also save backup copies of automatically created batches
Also when scanning automatically created batches, backup copies are stored in the defined archive folder.

This option is only applicable if you have activated the option “Create automatic batches from the TIF-files of a source directory” in the area of “Automatic batch creation” in the tab “Scanner”. This function is often used in combination with multifunction devices.

2.1.3. Scan destination: FTP Server
This option allows the transmission of scanned batches directly to the computer where the VividForms Reader is set up (in most cases this is the EvaSys server) using the FTP protocol. A requirement is the correct set-up of an FTP server on the receiving system.

**FTP-Server settings:**

**Server:**
Name of the FTP server, like ftp.domain.de. An IP address is also permitted.

**Folder:**
Folder in the FTP server where the files are stored.

**User:**
User name, set up for access to the FTP server. The user must have all rights (writing, reading, renaming and deletion) for the directory.

**Password:**
User password for access to the FTP server.

The settings for the archive directory and backup copies can be seen in chapter 2.1.2.
By clicking on [Test connection] the FTP connection can be checked. [Show log] opens a connection log.

Here is an example:
04-31-2010 10:55:54 - Connection successfully tested.
04-31-2010 10:57:45 - FTP upload successful: S01_060131_105742

The log shows that there was a successful test of the FTP connection on 31.04.2010 at 10:55, and that the file was successfully uploaded at 10.57. The log is an effective source of information for the support department.
The following errors can occur:

<table>
<thead>
<tr>
<th>Error Description</th>
<th>Possible Error Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection test failed. Cannot connect to…</td>
<td>No connection to FTP-Server (Firewall, Server, Proxy,…)</td>
</tr>
<tr>
<td>Connection test failed. Cannot rename file.</td>
<td>Missing rename permission</td>
</tr>
<tr>
<td>Connection test failed. Cannot delete file.</td>
<td>Missing delete permission</td>
</tr>
<tr>
<td>Connection test failed. Cannot upload file.</td>
<td>Missing write permission</td>
</tr>
</tbody>
</table>

Table 1: Possible errors (FTP-server)

The button [Delete log] empties the log.

### 2.1.4. Scan destination: Web Server / HTTPS

This setting allows the batch to be transmitted directly to the web server by HTTPS. It is required that the web server is correctly set up on the EvaSys-Server. Furthermore, in this case the VividForms Reader must be installed on the same machine as the web server.

The settings for the archive directory and backup copies can be seen in chapter 2.1.2.

**Web server/HTTPS settings:**

**Server:**
Name of the web server, like my.domain.com. An IP-Address is also permitted.

**Folder:**
Receiving folder on the EvaSys-Server. In the directory there has to be an abc sub-directory, where the files will be stored.

**Password:**
Password for uploading. The same password needs to be configured in the receiving script on the EvaSys-server. The password should be at least 8 characters long.

**Use proxy:**
If a proxy server is used, this option has to be activated.

**Proxy:**
Name of the proxy, like proxy.domain.com. An IP-address is also permitted.

**Port:**
Proxy port.
By clicking on [Test connection] the web server/HTTPS connection can be checked. The Scanstation will now transfer the maximum allowed file size to the EvaSys-web server.
You may change the maximum file size which is accepted by the server by editing the following file

- when using Apache: “C:\Apache\apache\bin\php.ini” *
- when using IIS: “C:\PHP\php.ini” *

at the line starting with UPLOAD_MAX_FILESIZE on the EvaSys-Server. The standard value is 16M (= 16 Megabytes). Please add the “M” character to any new value.

After saving the updated file, the web server needs to be restarted to apply the new settings. Open a command prompt and execute the following commands:

- when using Apache: “NET STOP APACHE2” and “NET START APACHE2”.
- when using IIS: “NET STOP w3svc” and “NET START w3svc”.

You may need to contact your administrator to access the necessary files.

The button [Show log] opens a connection log.

Here is an example:

04-08-2010 16:34:32 - test connection – success

The log shows that there was a successful test of the web server/HTTPS connection on April 8th at 16:34. The log is only available in English and is an effective source of information for the support department.

The following errors can occur:

<table>
<thead>
<tr>
<th>Connecting to …</th>
<th>No connection to Web server (Firewall, Server, Proxy)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sending request failed (URL: …)</td>
<td>Server not correctly configured (PHP-files, folders)</td>
</tr>
<tr>
<td>Upload Error: Unauthorized access</td>
<td>Passwords do not match</td>
</tr>
<tr>
<td>Upload Error: Failed to delete file</td>
<td>Missing permissions</td>
</tr>
<tr>
<td>Upload Error: Failed to copy file</td>
<td>Missing permissions</td>
</tr>
</tbody>
</table>

* Depending on the server environment the actual folder names may differ from these examples. Please note that changes in the php.ini may lead to unpredictable results. You should not apply any changes without referring to your administrator.

Table 2: Possible errors (web server / HTTPS)

The button [Delete log] empties the log.
2.1.5. Setting up the EvaSys-Server for HTTPS transfer

Create a subfolder “Scanstation” in the EvaSys web server root directory

- When using Apache: “C:\Apache\htdocs\” (in most cases). *
- When using IIS: “C:\Inetpub\wwwroot\” (in most cases). *

Copy the contents of subdirectory “HTTPS scripts” into this new folder on the web server.

Open the following file:

- when using Apache: “C:\Apache\htdocs\scanstation\password.inc”*
- when using IIS: “C:\Inetpub\wwwroot\scanstation\password.inc” *

and enter a password. The Scanstation needs to use the same password for HTTPS uploads.

Then configure the following folder

- when using Apache: “C:\Apache\htdocs\scanstation\abc”*
- when using IIS: “C:\Inetpub\wwwroot\scanstation\abc” *

as the TIF directory in the VividForms Reader.

* Depending on the server environment the actual folder names may differ from these examples
2.1.6. IIS information

2.1.6.1. Installation of an official signed certificate

1. Open the Internet Services Manager and expand the server name so that you can view the web sites.
2. Right-click the web site for which you created the certificate request and click “Properties”.
4. Select “Process the pending request and install the certificate” and click “Next”.
5. Type the location of the certificate that you downloaded in the “Issue and download a certificate” section, then click “Next”. The Wizard displays the Certificate Summary. Verify that the information is correct, then click “Next” to continue.
6. Click “Finish” to complete the process.

2.1.6.2. Setting up a self-signed certificate

Instructions for IIS 6

To setup a self-signed certificate on IIS 6 you will need SelfSSL. You can get it with the “Internet Information Services (IIS) 6.0 Resource Kit Tools” from Microsoft available at:

1. Install SelfSSL
2. Run SelfSSL (Start -> All Programs -> IIS Resources -> SelfSSL -> SelfSSL)
3. Type selfssl /T /N:CN=<computer or domain name>

If you want to setup a certificate for a single site you have to use the parameter /s:<siteid>. The site ID is displayed in the Identifier column, when you click on the web sites folder on the right-handed site in the Internet Information Services (IIS) Manager.

Test the certificate by loading https://localhost.

Instructions for IIS 7

1. Open the Internet Information Services (IIS) Manager.
2. Click the root machine node in the left-handed tree-view explorer.
3. Double-click “Server Certificates” in the feature pane on the right.
4. Click “Create Self-Signed Certificate”.
5. Enter a name and click “OK”.

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6. Navigate to your web site in the tree-view explorer.
7. Click “Bindings…” on the right-hand side of the screen.
8. Click “Add…”
9. Select “https” for Type and the created SSL certificate for SSL certificate.
10. Click Close.

It is only possible to generate a certificate for the host name, when you are using this way. If you need a certificate for a domain name, you can use SelfSSL (Follow the instructions for IIS 6) to generate the certificate and bind it as described from step 6.

2.1.6.3. Switching to SSL

1. On the Directory Security tab, under Secure Communications, note that there are now three available options. To set the web site to require secure connections, click “Edit”. The Secure Communications dialog box appears.
2. Select Require Secure Channel (SSL) and click “OK”.
3. Click “Apply” and then “OK” to close the property sheet.
4. Browse to the site and verify that it works. To do this, follow these steps:
   - Access the site through HTTP by typing http://localhost/Postinfo.html in the browser. You receive an error message that resembles the following: HTTP 403.4 - Forbidden: SSL required.
   - Try to browse to the same Web page using a secured connection (HTTPS) by typing https://localhost/postinfo.html in the browser.

2.2. Settings: Scanner Tab

In this area the source of the scanned forms (batches) is defined.

Figure 7: Scanner dialog

Scanner
The currently selected scanner driver is shown here. Click on [Change], to choose a different driver. It is necessary to already have the TWAIN-drivers installed.

Existing files
Scanning from a folder instead of a scanner is useful to restart the recognition process for documents which were already scanned and backed up using the archive function. Remember, EvaSys Scanstation merely created a digital copy of your paper forms.
Clicking on the [Scan]-button will open a “select TIFF file” dialog instead of starting the scanner hardware, if this setting is selected.

**Delete the source files**
When scanning from a folder, the existing TIF files can automatically be deleted from the source folder once the scanning process is completed.

**Always show driver settings dialog before scanning**
Some TWAIN drivers “forget” their settings. This option will show the driver settings dialog each time the [Scan]-button is used.

**Button [Test scan]**
Use this button to open and configure the scanner settings.

**The following standard settings apply to all models:**
- Paper Format A4
- Black and white
- Resolution: 200 DPI
- Duplex (simultaneous scanning of both sides of the sheet)
- Brightness: The threshold value should be slightly darker than average

Scanner configuration can differ in detail depending on the model and manufacturer. For more information, please consult the documentation supplied with your document scanner.

Click on the button [Test scan] to read a test sheet. Please place only a single sheet of paper into the scanner for this purpose. Afterwards a dialog will appear, in which there is a preview of the scanned images.
2.2.1. Automatic Batch Creation

With this option, you can automatically create batches from existing TIF files. Enter the source folder in which the TIF files are stored, here. This function is often used in combination with multifunction devices.

As a rule, when using the automatic batch creation, the person scanning does not have access to the Scanstation program. As such, the user cannot communicate directly to the Scanstation, what action to take in the case of an error in the batch. Using the button [Processing specifications], the reaction of the Scanstation to certain (error) status codes can be specified.

Figure 8: Automatic batch creation
It is possible to define the behavior for 4 status codes:

- **5000**: OMR-Threshold exceeded for batch:
  Too many answer boxes not found.

- **5030**: Batch contains Nonforms to be defined:
  The batch contains pages, which are not readable but not empty

- **5590**: Duplicate serial number within the survey
  Either a serial print questionnaire was copied or a batch was scanned in more than once.

- **5595**: Several forms do not have serial numbering
  There are pages existing in the survey that have serial numbering and ones that don’t.
It can be defined whether the batch processing has to be continued despite an error, or whether the batch processing has to be stopped (the batch is then ignored).

**Note:**

If “Continue batch processing” is selected, the error occurring will be ignored and is no longer correctable!

If the option “Hold batch processing” is selected, in the case of an error the batch appears to be completely ignored from the perspective of the scanner.
Note:
Error messages concerning the serial number refer to the survey and not to the batch. This means that batches scanned twice lead to an error message, because the serial numbers in this case appear twice.

If other errors occur, the batch will always be halted (apparently ignored).

However, all erroneous batches are passed to the Scanstation, where they can be checked. For this process, access to the Scanstation is necessary. Erroneous batches can be rejected or (depending on the error) processed further. For example, the retrospective sorting of unrecognized forms (Nonforms) is possible. The Scanstation should be checked regularly so as to check the list of batches and to clean up.

![Scanstation V3.3](image)

Figure 11: List of batches in the Scanstation
2.2.2. Other functions in the Scanner Tab

Suspend the processing of VividForms batches before transmitting the data for checking

This will allow checking for empty pages, NonForms and unlocated checkmarks within a batch before its data is exported to EvaSys.

Stop processing if unrecognized pages are found, so as to verify dataset consistency

This option enables the checking of unrecognized pages in a batch before transmitting the data to EvaSys. In this way, you can check the data consistency of your batch. Compare this with the examples in chapter “3.2. Example 2: Batch including a NonForm”.

Display error status for batches with 100% NonForms

If this function is deactivated, then a batch with only NonForms is moved to the NonForms folder, where there may be other engines available for processing.

Automatic Blank Page Removal

This setting allows detecting and deleting empty pages from scanned batches before they are getting processed. This helps to reduce the number of false NonForms by separating blank pages from pages which may contain form data. Default value is 2800 byte.

2.3. Settings: General Settings Tab

The general settings area allows the configuration of job processing, batch handling, and identification of the Scanstation.

URL for activation

Here you can specify the URL of the EvaSys server, in order to activate the Scanstation.

Checking

By clicking the button [Check], you can check the URL for the Scanstation. On successful activation you will receive the following information: “Activation successful”. The Scanstation can now be used.

Use Proxy

If the internet connection takes place via a proxy server, this option must be activated. The settings for the proxy server must be entered in the configuration.

Configuration

If you have activated the option “Use proxy”, you can configure this connection here. In the automatically opening window, you can enter the proxy and the proxy port.

Abbreviated name for Scanstation

Three digit ID of the Scanstation. This information will be visible in the log files of the EvaSys server.
**Always show dialog with scanning advices before scanning**

Enabling this checkbox will show a summary of important pre-requirements for successful scanning at the start of each batch.

**Check available local disk space**

Before scanning, the available hard disk space is checked. Too little hard disk space can result in defective batches. This test is carried out in local directories only.

**Language**

Here you can choose the language of the Scanstation (German or English). After changing the language, the Scanstation application must be restarted.

**Settings password**

In order to change the password, the existing password must first be entered.

**Show extended batch status**

This option displays status information for each batch generated.

**Duration in seconds between two updates of the batch status**

The Scanstation will request an updated batch list from the EvaSys server once after the time specified in seconds has elapsed. To keep server load low it is recommended not to lower this setting.

**Duration in minutes.**

After this time a successfully processed batch will be hidden. This setting specifies the time after which a completed batch will be hidden from the status window.

**Hiding of batches directly after the successful processing**

If activated the batches will be hidden directly after successful processing.

**Duration in days.**

After this time a completed batch will be removed irrevocably. After the specified time batch information will be permanently deleted.

**Default Job**

This value informs the receiving unit which kind of batch it is or how this is to be processed. Normally, only the EvaSys job is relevant. To process questionnaires for EvaSys, no user intervention is necessary.

**Enable user to change job processing**

User can independently select the job, if the option is set. To process questionnaires for EvaSys, intervention from the user is not necessary.
Figure 12: General Settings
2.4. Settings: VividForms Reader Tab

Processing of scanned batches is done using the VividForms Reader. The VividForms Reader uses settings which are valid for all Scanstations connected to the EvaSys system. In certain cases it may be required to modify those settings without affecting the other Scanstations which exist in the environment. Thus each Scanstation includes the ability to run specific VividForms Reader settings by overruling the standard configuration.

![VividForms Reader Settings in the Scanstation](image)

Figure 13: VividForms Reader Settings in the Scanstation
**Process Settings**

**Override VividForms Reader settings**
Enable this checkbox to activate the area “Process Settings”.

**Delete result folder of NonForm batches**
If a batch completes nothing but NonForms the related data will be deleted automatically.

**%-Threshold for the percentage of answer boxes not recognized by the VividForms Reader**
If the relative number of unlocated check boxes exceeds this percentage a batch will be halted.

**OMR Thresholds**

*Note:* Please bear in mind, that changes of these settings have a deep impact on the form reading. Therefore changes have to be made carefully. We recommend contacting our support team previously.

**Override VividForms Reader settings**
Enable this checkbox to activate the OMR thresholds area.

**Minimum filling degree**
Value from which a box is considered as “possibly” filled. If verification is activated, then this box and the corresponding question will be displayed to the verifier. If verification is not used, then the system will assume that the box is valid. Standard: 15%

**Maximum filling degree**
Value from which a box is considered as certainly filled. Standard: 25%

**Undo filling degree**
Check boxes exceeding this filling degree will be recognized as revoked. Standard: 80%

**Treat single blackened checkboxes as marked answers**
If in a question only one single field is filled out, whose filling ratio exceeds the „undo filling degree“, this field is considered as a valid marking, if this feature is activated. By default, this feature is "deactivated".

**Open Questions**

**Override VividForms Reader settings**
Enable this checkbox to activate the area “Open Questions”.

**Reduce the width**
This setting can be used to eliminate horizontal borders which remain in the process of open questions being copied from a questionnaire.

**Reduce the height**
This setting can be used to eliminate vertical borders which remain in the process of open questions being copied from a questionnaire.
**Extended Settings**

**Override VividForms Reader settings**

Enable this checkbox to activate the area “Extended Settings”.

**Activate debug mode**

This sets the VividForms Reader into debug mode for extended logging. Use this setting with care as it reduces system performance.

**Override web verification**

This setting can be used to force the web verification status of the barcode either to true or false. Each time a new batch is started the Scanstation will prompt the user.

Please observe when processing EvaExam sheets (examination forms) the verification (Verifier) may not be disabled; otherwise the data cannot be transmitted to EvaSys correctly.

**Override Form ID**

The form ID can be entered at the start of a batch and replaces the information found in the barcode.

![Override Barcode](image)

**Figure 14: Override Barcode**

**Override Survey ID**

The survey ID can be entered at the start of a batch and replaces the information found in the barcode.

**Ignore Serial Number**

Use this setting only for surveys which were planned to use serial numbering in case duplicates exist which need to be included into the raw data.
3. Carrying out the scanning process

3.1. How does the system recognize a questionnaire?

The result of creating a form in the VividForms Editor is a questionnaire template that can be widely used for survey processes. In the background, EvaSys saves a template file for each questionnaire, which then becomes a part of the recognition set. A recognition set is defined as the entirety of all known types of questionnaires. By means of this recognition set file, the VividForms Reader can recognize and process a scanned form.

If a questionnaire is implemented for at least one survey, this questionnaire is automatically protected from being changed (write protected mode). This write protection is intended to prevent questionnaires in circulation being altered by changes to the template and, consequently, changes to the template file which is required for later recognition, which would then not be able to be read correctly.
Characteristic of a VividForms questionnaire are the four cornerstones positioned at each corner on every questionnaire page. These cornerstones indicate the outer limits for the content of the questionnaire. As such, these cornerstones play a very important role in the recognition of data.
The barcode at the bottom end of the form contains the information necessary for further processing:

- Questionnaire type
- Page number within a questionnaire
- Sequential numbering of the questionnaire (only in batch printing)
- Corresponding survey process
- Verification yes/no

Figure 17: Barcode

When processing a stack of paper each sheet is recognized from scratch and processed. It starts with the bar code. If this was found and read successfully, the system can load the required template file from the recognition set. The template file contains the coordinates of all the checkboxes and response zones. These are then converted on to the scanned page and evaluated according to the requirements for recognition of checkboxes (OMR = Optical Mark Recognition).
3.2. How does the System Read the Data?

When reading the check boxes, the density of the shaded area within a box is the decisive factor. The default values stored in the system are shown in the following table.

<table>
<thead>
<tr>
<th>Empty</th>
<th>Perhaps</th>
<th>Positive</th>
<th>Correction</th>
</tr>
</thead>
<tbody>
<tr>
<td>No value will be accepted.</td>
<td>Visual correction in verification, without verification the recognized value will be accepted.</td>
<td>The value is accepted.</td>
<td>The value will not be accepted, when an additional correct mark is found for this question.¹</td>
</tr>
</tbody>
</table>

Table 3: Standard degrees of shading

In the case of open questions, the proportional shading in the area of the answer box is calculated. This means that particularly large response areas also require a correspondingly higher “fill” to be recognized as a response. The default value here is 0.3% of the area.

The optional switchable verification allows visual correction for certain unclear cases. The system can, however, also make decisions automatically that are, as a rule, correct. The following table illustrates possible cases:

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>With Verification</th>
<th>Without Verification</th>
</tr>
</thead>
<tbody>
<tr>
<td>No mark</td>
<td>No mark</td>
<td>No mark</td>
<td>X</td>
<td>No mark</td>
<td>4 automatically accepted</td>
<td>4 automatically accepted</td>
</tr>
<tr>
<td>X</td>
<td>No mark</td>
<td>No mark</td>
<td>No mark</td>
<td>No mark</td>
<td>Shown for visual correction</td>
<td>Invalid, (no mark)</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>No mark</td>
<td>No mark</td>
<td>No mark</td>
<td>Shown for visual correction</td>
<td>2 automatically accepted</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>No mark</td>
<td>No mark</td>
<td>Shown for visual correction</td>
<td>Invalid, (no mark)</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>No mark</td>
<td>Shown for visual correction</td>
<td>4 automatically accepted</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>No mark</td>
<td>No mark</td>
<td>Shown for visual correction</td>
<td>No mark (Missing Value)</td>
</tr>
<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>No mark</td>
<td>Shown for visual correction</td>
<td>Invalid, (no mark)</td>
</tr>
</tbody>
</table>

Table 4: Verification

The visual correction can lead to a somewhat better quality of data, since borderline cases are decided by user assessment. This can, however, lead to a possibly significant additional expenditure of time. The decision then, for or against verification should be taken dependent upon local data and conditions. In principle, however, it is recommended that tests and random sampling be conducted with verification, so as to ensure optimal quality in normal working mode (without verification).

¹ In the event that the reader finds only one blackened field for a question, and no correct marking, this is considered a “taking back the choice”. However, should it be desired to evaluate individual blackened fields as valid responses, this can be activated in the job settings of VividForms Reader. For more information, please refer to the VividForms Reader manual.
3.3. How are the Pages of a Batch sorted?

When creating paper-based surveys there are two methods available in EvaSys. On the one hand, there is the cover sheet procedure and on the other, the hard copy procedure. Whereas in the cover sheet procedure, the questionnaires themselves have no relation to a specific survey and can only be attributed to a survey at all by first scanning in a cover sheet, all questionnaires in the hard copy procedure contain a survey-specific identifier in the barcode. As such, the advantages of the hard copy procedure are that each page alone can be attributed correctly, whereas in the cover sheet procedure a completed questionnaire cannot be processed without the corresponding cover sheet. The advantage of the cover sheet procedure is the efficient use of paper, because unused questionnaires from the hard copy procedure must be destroyed.

Both in the hard copy procedure as well as in the cover sheet procedure, individual examples of the questionnaires are printed repeatedly and as such, are identical to each other. Optionally, the hard copy procedure via batch printing allows for consecutive numbering of questionnaires via a barcode. This unique identifier allows for the positive identification and attribution of individual pages of a questionnaire to the corresponding survey.

<table>
<thead>
<tr>
<th>Cover Sheet Procedure</th>
<th>Cover Sheet + n * Examples of the blank questionnaire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hard Copy Procedure (without serial number)</td>
<td>n * Examples of the survey specific questionnaire</td>
</tr>
<tr>
<td>Hard Copy Procedure (with serial number)</td>
<td>Consecutive from 1 to n numbered questionnaires</td>
</tr>
</tbody>
</table>

Table 5: Batch printing

The use of serial numbers is recommended for questionnaires consisting of more than two pages, whereby it is assumed that a two paged questionnaire would be printed double sided (duplex). If the number of pages is greater, the use of staples could be considered, which however, must be cut off before scanning (the system tolerates the loss of one corner stone). If, in multipage questionnaires the use of consecutive numbering is not used, the sequence of the forms being read in is crucial to their aggregation to individual datasets. When, for example single pages of questionnaires are not recognized because they are damaged, the automatic data consistency check intervenes and, via a user dialogue, ensures the correct page attribution in the batch.
3.4. What determines the Data Quality?

From printing through to automated processing, each questionnaire goes through a number of stations that have an influence on the quality of the data to be read later. In short, a high quality print, careful completion by survey participants and a well-maintained and configured document scanner as well as trained operating personnel guarantee optimum processing results.

The influencing factors in detail:

**Figure 18: Influencing factors on data quality**

**Printing Process**

- PDF printing settings include scaling parameters that lead to a disadvantageous increase in the size of the questionnaire, as the important cornerstones threaten to wander outside of the printable area. Therefore, any scaling must be switched off.
- Dark or colored paper leads to poor contrast in the black and white images which are so important in the data processing, and therefore should be avoided.
- Weak toner produces incomplete print results with unpredictable consequences in data reading.

**Copying Process**

- We strongly advise against the use of copies for VividForms questionnaires. If, during a running survey, additional copies are made using a copier, the rotations and scaling that takes place must be kept to a minimum. There are tolerances that can compensate for such changes.
In the case of the hard copy procedure with serial numbers, all questionnaires have individual numbers. As such, copies inevitably lead to duplicates as well as page allocation problems.

**Participants**
- The care taken by the survey participants is the most important influencing factor. Crosses next to instead of in the check box, the use of inappropriate writing materials (e.g. too hard pencils) can also lead to data loss.
- In the hard copy procedure with serial numbers, survey participants may feel their anonymity impaired and change their response attitudes accordingly.
- Manipulation of the bar code or the cornerstones may occur as a form of evaluation refusal and lead to reworking or data loss.

**Paper Handling**
- Contamination or damage can occur during the handling of paper and this can sometimes affect the performance of the scanner. In some cases, e.g. even grains of sand can lead to scratches and permanent damage of the scanner (compare to vertical black lines in damaged fax machines). If surveys are conducted regularly in contaminated environments (e.g. manufacturing plants) regular cleaning of the scanner is of particular importance.
- When using the cover sheet procedure or the hard copy procedure without serial numbers for multi-page questionnaires, the sorted order of the questionnaires must be maintained. Only then can the correct attribution of data sets be made. To avoid attribution errors, stapling and/or the use of serial numbers is recommended. In the case of single page or double-sided two-page questionnaires, such measures are not necessary.
- Wet or sticky paper later results in double feeds in the scanning process. Such double feeds can, if the questionnaires do not have serial numbers, lead to unintended offsetting of the raw data.

**Scan Process**
- The scanner must be set at 200 dpi and black and white mode. Incorrect settings have a significant impact on the recognition rate.
- Too bright a picture leads to a decrease in shading and with that, a deficit in part of the data. As soon as detection of the check boxes fails too, the system warns that the OMR error threshold has been exceeded.
- Too dark a picture leads to an increase of the shading and ultimately to empty check boxes being erroneously recognized as marked.
- Contaminated or dirty scanners can greatly affect image quality, causing stripes to appear or the paper being partially rotated while passing through.

**VividForms Reader / Scanstation**
- The VividForms Reader is delivered with general settings proven in practice. Depending on local conditions and peculiarities, there may be potential for optimization.
- When errors occur, batches are halted for user inspection. It then depends on the user whether the difficulties encountered (which may also impact on data quality) are remedied or simply acknowledged.
3.5. What Tolerances are there?

The VividForms Reader used in EvaSys displays a good level of tolerance of typical errors occurring in print or in the duplication of questionnaires by copiers. Scaling effects can occur, whereby questionnaires appear larger or smaller than the original. Additionally, rotational effects can occur.

The graphic shows the tolerance ranges when searching for the cornerstones. These are zones which cover horizontally 25% of the page width and vertically 20% of the page length respectively.

As long as at least three of the four corner stones are found within the green marked zones, there is a very high probability of correct capturing. The page will be measured in terms of rotation, “turned back” and projected onto the anchor point dimensions of the cornerstones of the stored template file.
3.6. How can Recognition Performance be optimized?

From the previous chapters it becomes clear that there are several factors which can influence the quality of the data. If the life cycle of the paper, from printing to scanning, is already operating under optimal conditions, there may be more optimizing potential in the configuration of the OMR thresholds.

![Figure 20: OMR Settings](image)

The default values for the recognition of OMR data (check boxes) can be changed in the Scanstation settings. The decision rules listed in 3.2 are altered according to this, so changes to the OMR thresholds should only be made with great care.

In order to visualize the actual degree of shading measured in the capturing process, a test survey with visual correction activated must be created and read in. Alternatively, a “normal” survey can also be read in using the function “Overwrite web verification” in the Scanstation settings.

In the EvaSys verifier, the section “Filling Degrees” appears in the table. Using the PDF icon here, a PDF file can be opened which contains the scanned pages with all of the degrees of shading measured for the check boxes and open questions. If the ICR recognition (handwriting recognition) is in use, the characters read can also be viewed in this file.

![Figure 21: Verification](image)

This presentation already provides a good overview of the values measured and allows for consideration of adjustments to the OMR threshold. As in this PDF file only data above the minimum degree of shading (standard 15%) is shown, the minimal degree of shading can be experimentally lowered to 1%, so as to get a clearer insight into the degree of shading of empty, unchecked check boxes. For expedient OMR thresholds it is important to keep a sufficient gap between the degree of shading of empty check boxes as well as that of “real”, only lightly checked check boxes. Please make sure that, after
such an experimental scan test, the OMR threshold settings, where applicable, are returned to their original values.

![Figure 22: Displaying the degree of shading](image)

For an empirical analysis of the degrees of shading measured, the values can also be recalled from a CSV export. This feature is by default disabled, and can only be activated by the administrator via the configuration option “Maintenance/CSV export of filling degrees in the Verifier”.

If the determined optimal settings are to be used for the entire system including multiple Scanstations, the EvaSys administrator can deposit these values directly in the VividForms Reader.

### 3.7. How to scan VividForms questionnaires?

The scanning process is kept as simple as possible.

Before you start the scanning process, ensure that the following conditions have been fulfilled:

With VividForms you can mix any number of questionnaires, as long as they were created using the hard copy procedure. Coversheet surveys require a correct sequence of cover sheet and the corresponding questionnaires. So any number of following questionnaires can be read in one scanning process. It is recommendable to scan forms from one survey per batch only to simplify the process of managing the batch reading and allow making decisions based on error conditions which would affect a whole batch.

If you have too many forms for the feeder of the scanner, you can insert the next stack after the first was read. The scanning process will automatically be continued. If more than 1000 pages have been read in a single batch the Scanstation will ask the user to complete it soon. If more than 2500 forms have been scanned into a single batch the Scanstation will forcefully complete it.

We recommend scanning in batches of no more than 1000 sheets.

Insert the paper as it is shown on the figures.

The barcode must be shown on the first page of the batch.

When using the cover sheet-method, the cover sheet should be scanned first.
The questionnaires should be read in the correct order if possible, especially if the questionnaires have more than one page.

The recognition process is still possible even if questionnaires with more than one page have been mixed up. However, in this case an analysis of the subgroups is unlikely to deliver correct results. Please bear in mind that questionnaires with batch printing IDs can still be processed and filtered correctly.

Now you can start the scanning process by clicking on the button [Scan].

![Correctly inserted questionnaires](image1)

**Figure 23: Correctly inserted questionnaires**

![Correctly inserted questionnaires](image2)

**Figure 24: Correctly inserted questionnaires**

Normally you should scan duplex, i.e. the front and back page simultaneously. They are each counted as one page. Thus if you are scanning twelve pages of paper, which are each printed on only one side, the following dialogue in the duplex-scanning-mode will report the recognition of 24 pages. Empty pages are later removed automatically; the recognition process is not affected by them.
Now you can choose [Continue scanning], if you want to scan another stack of questionnaires.

You can choose [Finish Batch] if scanning is completed. The scanned questionnaires are sent to the EvaSys-server. Further analysis is carried out automatically. To scan another survey, click on the button [Scan] in the main window.

If the scanning process went wrong, click on the button [Discard batch]. Thus you delete the data that was retrieved in the actual scanning process. By starting the scanning from the beginning you can repeat the recognition.
3.8. Example 1: Standard batch processing

After completing the batch the status information shows the status “Waiting for processing”.

The status changes to “Data transmission” when the data is transmitted to the EvaSys server.
Figure 27: Data transmission
After the next refresh the status for this batch is shown as “Processing finished”.

Figure 28: Processing finished
A double-click on this batch shows additional information.

![Batch Information](image)

**Figure 29: Batch information**

The summary shows a total of four pages. Two of those were successfully recognized as forms. The other two pages were empty. There were no NonForms and all checkmarks could be located. A detailed batch processing history is shown when clicking the [History] button.

![Batch History](image)

**Figure 30: Batch history**

The batch history shows each step of the batch processing.
3.9. Example 2: Batch including a NonForm

3.9.1. Activated dataset consistency

This case will show the processing of two single sided forms which were scanned in duplex mode. The barcode of one of the two forms was damaged intentionally.

The batch is shown in red color since the batch was halted for user interaction.

The status “Checking dataset consistency” is shown if the option “Stop processing if unrecognized pages are found, so as to verify dataset consistency.” is activated in the Scanstation settings (tab “Scanner”) (Default setting: option is activated).

A double-click on this batch shows additional information.
The summary shows that the batch contained two pages. One was a form, no one was empty and one page turned out to be a NonForm.
By clicking the [Show] button next to the empty pages summary the following window is shown:

![Display of removed empty pages](image)

**Figure 33: Display of removed empty pages**

On the right a list with all pages recognized as empty is shown. Clicking on one item in the list will show the page content on the left side. The black areas on the border of the page show that this indeed was an empty page.

With the blue arrow icon, you can rotate the page 180° in the preview.

With the magnifying glass icon, you can enlarge and respectively reduce the page in the preview.

You can close the window by clicking on [Ok]. The batch information window opens automatically.
The batch information window also allows clicking the [Show] button next to the NonForms summary:

![Display of NonForms](image)

**Figure 34: Display of NonForms**

The right side contains a list with pages which resulted to be NonForms. The item visible in this example shows the error message “Barcode was not found (5545)”.

Moving the mouse over the preview window while holding the left mouse button shows a magnifier circle which allows examining the barcode area.

As well as this, you can enlarge and respectively reduce the page in the preview with the magnifying glass icon.

With the blue arrow icon, you can rotate the page 180° in the preview.
This proves in this case that the barcode was indeed damaged:

![Display of NonForms – damaged barcode](image)

**Figure 35: Display of NonForms – damaged barcode**

You can close the window by clicking on [Ok]. The batch information window opens automatically. The user has to decide

- whether the batch processing should continue and the incomplete data be transmitted to EvaSys (to do this, please choose the option “Continue batch processing”, and then click on the [Proceed] button),
- whether the batch should be discarded so as to avoid that incomplete data be transmitted (to do this, please choose the option “Cancel batch” and then click on the [Proceed] button),
- whether the data consistency should be checked by the user (to do this, please choose the option “Verify dataset consistency” and then click on the [Proceed] button) or
- whether the scanning process should be halted without data transmitted. The batch remains in the Scanstation until the user makes a decision (to do this, click on the [Cancel] button).
If you want to check the data consistency, activate the option “Verify dataset consistency” and then click on the [Proceed] button. The dialogue window for checking dataset consistency opens automatically:

![Dialogue window for checking dataset consistency](image)

**Figure 36: Checking data consistency (Damaged barcode)**

In this example, you can see in the bottom right that case 1 of 1 is being processed.

In this example, the error message “Form missing in recognition set (5570)” appears. Depending on the type of damage to the barcode, the error message can vary. In this case the system has found something resembling a barcode, but cannot find a form with these values in the recognition set.

To avoid displacements between datasets, you must now check whether the unrecognized page is a VividForms questionnaire. If this is the case, you must enter the missing information on the questionnaire.
### Example:
The following example shows how important checking the dataset consistency is.

Usual batch allocation with a two page questionnaire (it is irrelevant which page of a dataset is scanned first):

<table>
<thead>
<tr>
<th>Batch</th>
<th>1 2 2 1 2 1 2 1 2 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allocation:</td>
<td>__/ __/ __/ __/ __/</td>
</tr>
</tbody>
</table>

Although the second scanned page is a valid VividForms form, it becomes a NonForm (e.g. because of a damaged barcode).

As EvaSys automatically allocates the second recognized page to the first page recognized, the pages are erroneously sorted (the error only occurs if the user does not verify the dataset consistency):

<table>
<thead>
<tr>
<th>Batch</th>
<th>1 x 2 1 2 1 2 1 2 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allocation:</td>
<td>____/ __/ __/ __/ __/</td>
</tr>
</tbody>
</table>

This erroneous allocation of pages can only be corrected if the user notifies the Scanstation that “x” was the second page of a VividForms questionnaire. The batch can then be sorted correctly:

<table>
<thead>
<tr>
<th>Batch</th>
<th>1 (2) 2 1 2 1 2 1 2 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allocation:</td>
<td>_/ __/ __/ __/ __/</td>
</tr>
</tbody>
</table>

After verifying the dataset consistency all other datasets are allocated correctly even if the second page of the first dataset is missing.
If the unrecognized questionnaire page is a VividForms questionnaire, choose the option “VividForms Form”:

![Image of VividForms Form]

Figure 37: Entering the questionnaire definition (Damaged barcode)

If the questionnaire, apart from the barcode, was readable (at least 3 corners were found, otherwise the scan was optically faultless), as well as checking the dataset consistency of the questionnaire, the content can also be evaluated. To do this, you must activate “Continue processing for this form” To aid this, the blue arrow icon can be used to rotate the form correctly, should it be upside down.
Subsequently enter the missing data of the questionnaire page. For this, two options are available to you:

a. Via the drop-down menu, you can use the data of already recognized questionnaires.

b. You can manually enter the barcode information from the questionnaire preview (Barcode Text).
In order to read the barcode more clearly, you can enlarge the area using the magnifying glass symbol.

Figure 39: Entering the questionnaire's information (drop-down list)
As soon as you click the area “Barcode text” to manually enter the barcode information, the barcode area in the preview is automatically magnified. Now enter the information manually:

![Figure 40: Entering the questionnaire’s information (Barcode Text)](image)

If the problem is only a manipulated or unreadable barcode, processing will continue if you activate the function “Continue processing for this form”.

**Note:**

Processing of the data of a non-recognized page(s) is only possible in errors in the barcode. If cornerstones have been damaged, this function serves only to reproduce the data consistency of different questionnaires.

A flawless reading of a questionnaire is only possible if the rest of the image is faultless. If, for example, the barcode error was triggered by a far too bright or far too dark an image, an error free reading cannot be expected. In this case, deactivate the option “Continue processing for this form”.

Ensure that the form in this case is not upside down and, if necessary, rotate the form using the “rotate” function at the bottom right of the preview window before continuing processing.
Then (after necessary rotation) select the location of the barcode in the image. With a regular (rotated) form it would normally be at the bottom. However, as there can be special cases, the position must be specified for correct processing.

3.9.2. Deactivated dataset consistency

The status “Verify dataset consistency” described in chapter 3.2.1. is not shown if the option “Stop processing if unrecognized pages are found, so as to verify dataset consistency.” is deactivated in the Scanstation settings (tab “Scanner”) (Default setting: option is activated).

In this is the case, you cannot check any dataset consistency. The data of all recognized pages will automatically be saved in the EvaSys database.

This case will show the processing of two single sided forms which were scanned in duplex mode. The barcode of one of the two forms was damaged intentionally.
Figure 43: Processing finished
After processing was finished double-click on the batch in the status window to show batch details.

**Figure 44: Batch information**

The summary shows that the batch contained 2 pages. One was a form, no one was empty and one page turned out to be a NonForm.

If you click on the [Show] button next to the summary of the recognized forms, the empty pages or all recognized NonForms, the relevant pages will be displayed.

Compare this to the information and screenshots given in chapter “3.9.1. Activated dataset consistency”.

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3.10. Example 3: Batch with OMR Errors

This example shows the processing of two single sided forms which were scanned in duplex mode. On both forms a couple of checkboxes were erased using a whiteout marker.

![Scanstation V3.3](image)

The batch is shown in red color since the batch was halted for user interaction. A double-click on the batch opens a dialog box.

**Figure 45: OMR Threshold exceeded**

The batch is shown in red color since the batch was halted for user interaction. A double-click on the batch opens a dialog box.
Figure 46: Batch information

The user has to decide

- whether the batch processing should be continued and the incomplete data transmitted to EvaSys (to do this, please choose the option “Continue batch processing” and then click on the [Proceed] button),
- whether the batch should be discarded so as to avoid incomplete data being transmitted (to do this, please choose the “Cancel batch” option and then click on the [Proceed] button), or
- whether the scanning process should be halted without data transfer. The batch remains in the Scanstation until the user makes a decision (to do this, click on the [Cancel] button).

The user can display the recognized forms, the empty pages and the NonForms of the batch.
Figure 47: Magnifier view
3.11. Display of Status Codes

The batch status code is shown in the lower right corner of the batch information. It shows, for example, the successful processing:

Figure 48: Batch status codes

In errors during processing, the value of the status code gives an indication as to the type of error and possible solutions:

Figure 49: Batch status code (OMR-Threshold exceeded)
3.12. NonForm Error Codes

The status code, also with NonForms, delivers important information as to why a page was not recognized.

A NonForm is a non-empty page which could not be identified as a valid form/valid questionnaire.

As well as in the bottom right hand corner, the NonForm status code is also displayed on the right hand side of the NonForm preview screen:

![Display of NonForms](image)

**Figure 50: Display of NonForms**
3.13. Job Error Codes

Job status codes range from 6000 upwards and can be found in the lower right corner of the batch information window. Information can be found here, if problems or errors occurred when transferring data to the EvaSys system:

Figure 51: Job status code
### 3.14. List of all Status Codes

<table>
<thead>
<tr>
<th>Status Code</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>1200</td>
<td>Batch was stopped for checking. Please select one of the following options: The batch processing can either be continued or the batch can be deleted.</td>
</tr>
<tr>
<td>1220</td>
<td>The EvaSys export job is not activated in the VividForms Reader. Please set the job in the VividForms Reader and check all settings, processing may then be continued. The VividForms Reader is not configured correctly. Make sure the export job is setup like specified in the VividForms Reader manual. The batch processing can then either be continued or the batch can be deleted.</td>
</tr>
<tr>
<td>1239</td>
<td>The scanned batch only contains non-forms. The batch must be discarded Please check the scanned batch as no VividForms sheets were recognized. The batch can only be discarded.</td>
</tr>
<tr>
<td>1240</td>
<td>Batch moved to the NonForms folder If the function “Display error status for batches with 100% NonForms” is deactivated in the Scanstation settings (registry card “Scanner”), then the batch with only NonForms is moved to the NonForms folder, where there may be other engines available for processing.</td>
</tr>
<tr>
<td>5000</td>
<td>The OMR failure threshold has been exceeded for this batch. {0} percent of the check boxes in the processed batch could not be found. OMR failures are a sign of repairable systematic failures (print quality, scanner maintenance status or scanner settings) and can result in incomplete or defective data. Please select one of the following options: Exceeding the OMR error threshold is a warning signal for grave recognition problems. Please check if the paper or printing quality is sufficient. Also check for correct scanner settings before you continue. Raising the OMR error threshold can be a workaround but will also lead to losses in data. The batch processing can then either be continued or the batch can be deleted.</td>
</tr>
<tr>
<td>Error Code</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
<td>-------------</td>
</tr>
<tr>
<td>5030</td>
<td>The batch contains pages which were not recognized as VividForms forms or which could not be recognized. Choose the option “Verify dataset consistency” to avoid displacement of datasets in multiple page forms. Choose “Continue batch processing” to skip creating dataset consistency.</td>
</tr>
<tr>
<td>5060</td>
<td>The form is not part of the recognition set of the VividForms Reader. Please check the VividForms settings in EvaSys as well as the form and, if necessary, regenerate the VividForms recognition set in the administration of questionnaires. The batch has to be re-processed.</td>
</tr>
<tr>
<td>5090</td>
<td>The database connection for transferring the data failed. Please check the accessibility of the server and the settings in the export job of the VividForms Reader. Once completed, the batch must be processed again, with the aid of the Scanstation.</td>
</tr>
<tr>
<td>5120</td>
<td>The files could not be transferred. Please check the settings. To transfer the files again please re-process the batch or use the archive copy.</td>
</tr>
<tr>
<td>5150</td>
<td>The image file is invalid. Maybe there were problems transferring the file.</td>
</tr>
<tr>
<td>5180</td>
<td>The VividForms result folder is invalid. Please check the settings of the system.</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
</tr>
<tr>
<td>-------</td>
<td>------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>5210</td>
<td>The version of the Scanstation is invalid. Please update the Scanstation and</td>
</tr>
<tr>
<td></td>
<td>reprocess the forms.</td>
</tr>
<tr>
<td>5270</td>
<td>The VividForms job is not set up. Please carry out the setup. Once completed,</td>
</tr>
<tr>
<td></td>
<td>processing may then be continued.</td>
</tr>
<tr>
<td>5300</td>
<td>The VividForms Job could not be found. Please set up the jobs in the VividForms</td>
</tr>
<tr>
<td></td>
<td>Reader, processing may then be continued.</td>
</tr>
<tr>
<td>5370</td>
<td>The transfer of data from the VividForms Reader failed. Please check all job</td>
</tr>
<tr>
<td></td>
<td>settings in the VividForms Reader, processing may then be continued.</td>
</tr>
<tr>
<td>5500</td>
<td>Error during image processing</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>5510</td>
<td>Error during image processing</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>5515</td>
<td>Error during image processing</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>5520</td>
<td>Error during image processing</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>5536</td>
<td>Not enough corner stones found</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>5540</td>
<td>Width to height ratio too high</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Error Code</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
<td>-------------</td>
</tr>
<tr>
<td>5545</td>
<td>Barcode was not found</td>
</tr>
<tr>
<td>5555</td>
<td>Survey-ID in the barcode is invalid</td>
</tr>
<tr>
<td>5565</td>
<td>Serial number ID in barcode is invalid</td>
</tr>
<tr>
<td>5570</td>
<td>Serial number ID in barcode is invalid</td>
</tr>
<tr>
<td>5575</td>
<td>Form-ID does not match Cover Sheet</td>
</tr>
<tr>
<td>5576</td>
<td>Questionnaire without cover sheet.</td>
</tr>
<tr>
<td>5580</td>
<td>Invalid barcode area</td>
</tr>
<tr>
<td>5590</td>
<td>Double serial numbers in one survey</td>
</tr>
<tr>
<td>5595</td>
<td>Not all forms of the survey have a serial number.</td>
</tr>
<tr>
<td>5596</td>
<td>Combination of 5595 and 5590: Double serial numbers in one survey and not all forms of the survey have a serial number.</td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
</tr>
<tr>
<td>-------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>6000</td>
<td>The database connection between the VividForms export job and the server failed. Please check the export job settings in the VividForms Reader and try the connection. Once completed, processing may be continued.</td>
</tr>
<tr>
<td>6010</td>
<td>The VividForms export job could not call a EvaSys file to confirm a batch. Please check the URL of the server in the job settings and test the connection. Once completed, processing may be continued.</td>
</tr>
<tr>
<td>6020</td>
<td>The VividForms export job could not finish the confirmation of the batch. Perhaps there is a server overload. Please select one of the following options:</td>
</tr>
<tr>
<td>6030</td>
<td>The URL for the EvaSys server is incorrect. Please check the URL of the server in the job settings and test the connection. Once completed, processing may be continued.</td>
</tr>
<tr>
<td>6035</td>
<td>The VividForms export job could not complete the batch confirmation. An error occurred on the server side. Please contact support.</td>
</tr>
<tr>
<td>6040, 6050</td>
<td>An error occurred while confirming the batch in the VividForms job. Please check the URL of the server in the job settings and test the connection. Once completed, processing may be continued.</td>
</tr>
<tr>
<td>6070</td>
<td>An error occurred while generating a batch in the VividForms job. Please contact your vendor.</td>
</tr>
<tr>
<td>Code</td>
<td>Message</td>
</tr>
<tr>
<td>--------</td>
<td>-------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>6080</td>
<td>An error occurred while compiling the information of the result XML file. Please contact your vendor.</td>
</tr>
<tr>
<td>6090</td>
<td>The survey is closed. No further data can be added. To add further data the survey must be opened. Once completed, processing may be continued.</td>
</tr>
<tr>
<td>6100</td>
<td>The survey with the ID {0} does not exist. If you want to process the data you must create a new survey and adjust the ID. Once completed, processing may be continued.</td>
</tr>
<tr>
<td>6110</td>
<td>The form with the ID {0} does not exist in the system. If you want to process the data the form with the ID has to be rebuilt. Once completed, processing may be continued.</td>
</tr>
</tbody>
</table>

Table 6: Possible batch status codes