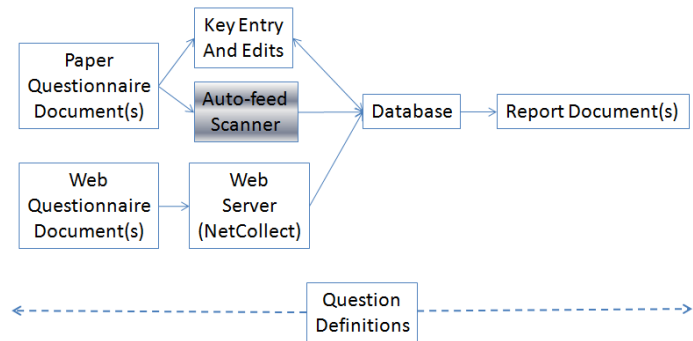


Scanning Questionnaires Procedure

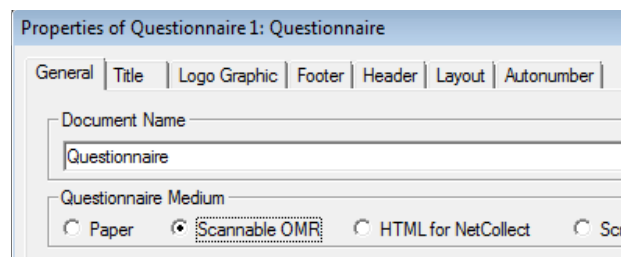
SurveyPro with Remark



Questionnaire Design

SurveyPro questionnaires can be designed to work with Optical Mark Reader scanning, such as our partner's Remark software. The layout can be free-form, including text entry areas, printed on any laser printer, copied and read by standard desktop image scanners. *These notes apply to SurveyPro 5 builds after 1/10/2012; the latest builds can be downloaded from www.apian.com.*

Create the survey in SurveyPro using the Document, Properties OMR layout option:



Instead of checkboxes the questionnaire will have bubbles with fine outlines, plus some new scale layout options like barcodes and number bubble grids.

SurveyPro's protocol for scannable surveys was designed with Remark in mind to meet their minimum specifications regarding the distance between bubbles and any other page text, object or image. SurveyPro adheres to those specs when creating a survey questionnaire when Text Styles are close to the default question and scale sizes. Radical changes in font sizes may upset this spacing.

Folding the paper surveys at any point in the process can create shadows when scanned. This can lead to false positives and require more operator intervention time during data cleanup. If you are designing a form that will be folded for display or mailing avoid placing any question's bubble entry area across a fold line.

If you intend to print dual-sided you should use 24 pound paper rather than 20 pound paper. Thinner paper can result in bleed through which can affect the ability of OMR software to recognize valid marks.

Questionnaires should be printed on a laser printer in black on white for any areas with answers for maximum contrast. You can use color for logos and fill areas for appearance, but it is best to not put any colored backgrounds behind the entry bubbles or writing areas.

Bar Coding

If you want to print bar codes the 3 of 9 barcode font will be available. It is a public domain TrueType font that is widely recognized by readers. This can be set in a graphic text tile, inline or fixed on the page. The OMR software can read it and select the correct page template to process the scan and/or pass the code along as data for SurveyPro to process. There are a few things to be aware of:

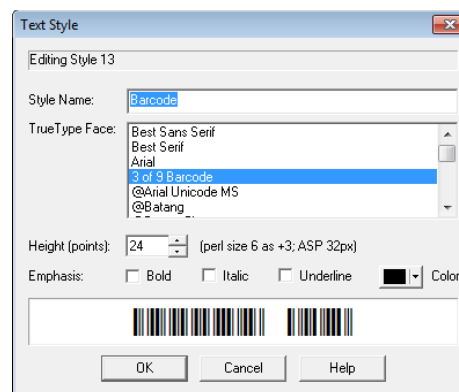
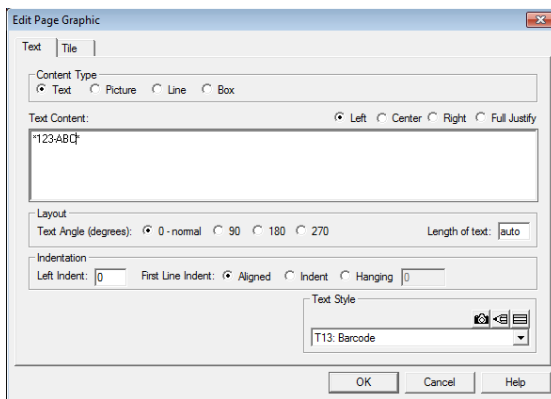
- The 3-by-9 barcode specifies a start and stop asterisk * character, thus to print the code ABC123 it needs to actually be *ABC123*
- This barcode is case-independent, so upper and lower case letters print the same codes. It can do the ten digits and some punctuation specifically

- . \$ / + %

- It will print a space character if you type an exclamation point !
- Best scanner readability with this font is when printed near 24 point, or about 1/3 inch high. Laser printers will provide a clearer image than inkjets.

SurveyPro can print fixed values from in-line or page text tiles or it can print answers from a pre-loaded data base. Fixed answers are to identify a particular form copied in large numbers. Printing answers is for a mail-merge operation for individualized forms. These two are done a little differently.

To put a *fixed bar code* on the questionnaire page either create a page tile or an in-line tile to have the bar you want to display. In this case you should follow the specifications above since SurveyPro is going to print exactly what you type. Include the beginning and ending asterisks; thus if the value you want for the bar is 123 then you would type in *123*. For a space character use the ! and limit your punctuation to the legal ones. Illegal characters will result in white gaps in your bar code. Create a TextStyle for the 3/9 bar code font at the recommended 24-point size for the tile's text.

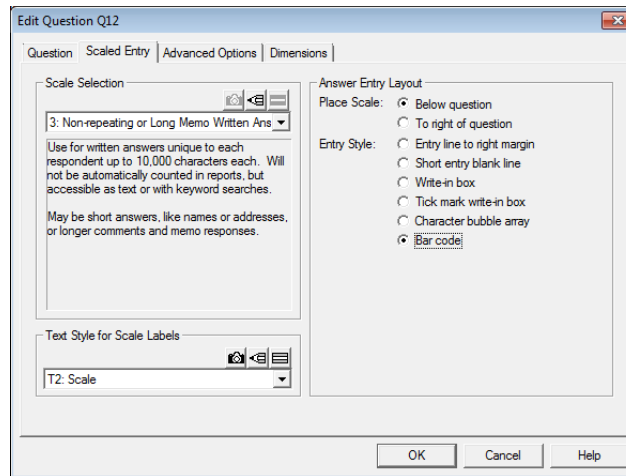


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When setting up a question in order to print each form with a *preloaded barcode value* (up to 50 characters long):

Select the appropriate written scale for your imported data values in question dialog. Set the entry type to Bar Code. Leave the default scale text style; it is ignored for this entry type.



In the design screen you will see the bar code as a layout placeholder with either a <none> underneath since there is no data available or the entries in the scale pattern if any.



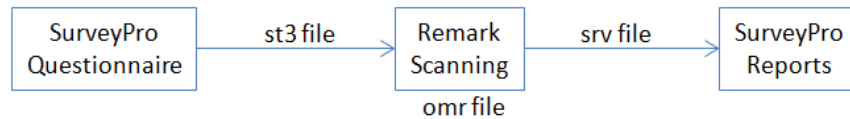
Preload the forms by importing the mail-merge data

To print go to the answer entry screen and select File, Print-With-Data. Use a normal text style for the written answers, not the barcode style. The bar code entry answers will be shown as a bar code with their text value underneath it and the coding rules will be handled for you. The leading and trailing * are automatically applied. If there are blanks in the answer they will be converted to ! for the bar code. Illegal characters will also be converted to blanks.



Data Collection

When you work with Remark and SurveyPro, you export your survey information from SurveyPro which becomes a scanning template in Remark. Then, when you're done scanning, the data collected in Remark is imported into SurveyPro. This process works smoothly as long as you use the correct file formats.



You setup the process once for a questionnaire, single or multi-page. When forms come back from respondents you scan them using the template. We recommend you test the process with a few dummy forms before distributing questionnaires.

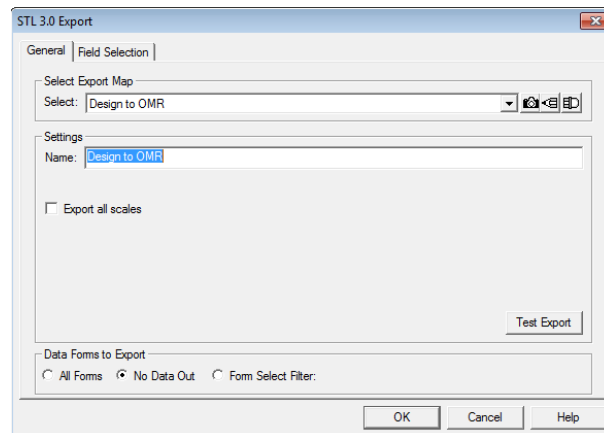
Prepare Scan Template and Import Map

In SurveyPro: Export the survey to .st3 format which contains the questionnaire design definition: questions, scales and data entry locations on the document page(s):

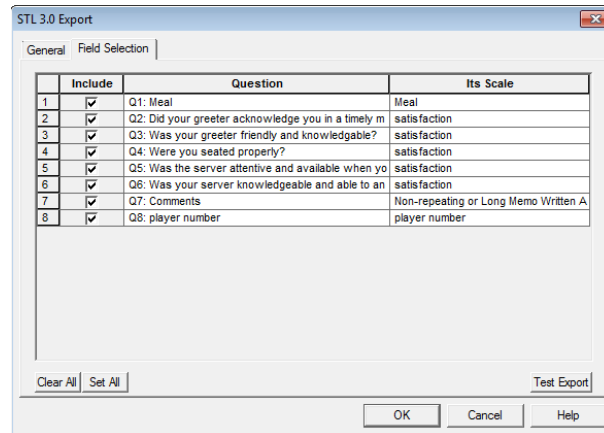
In the Database menu, choose Export To, then Survey Tag Language 3.0 (.st3)

Choose a filename and location for your .ST3 file and click Save

On the General tab, under Data Forms to Export, select No Data Out.



Click Next. Leave all the questions selected:



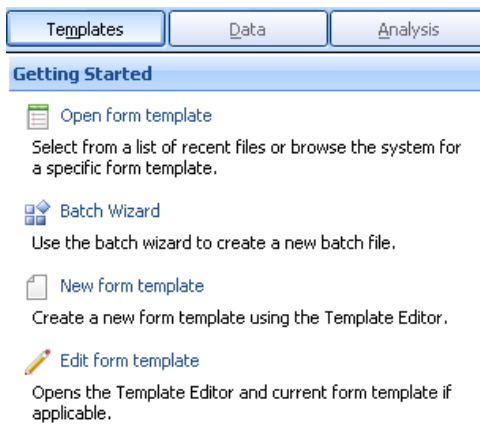
Click Finish. Type a name for your mapping and click Yes

Click OK to write the file and close the confirmation dialog.

Print a copy of the questionnaire and leave it blank to serve as a template for the Remark setup. Also make a few copies of a fixed questionnaire or print-with-data some samples with merged bar codes to be marked up as test forms for checking the scan process.

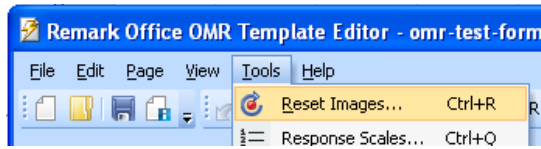
In Remark:

These instructions are for Remark 8 but the same general approach works for other versions, though there may be differences in screens and labels.

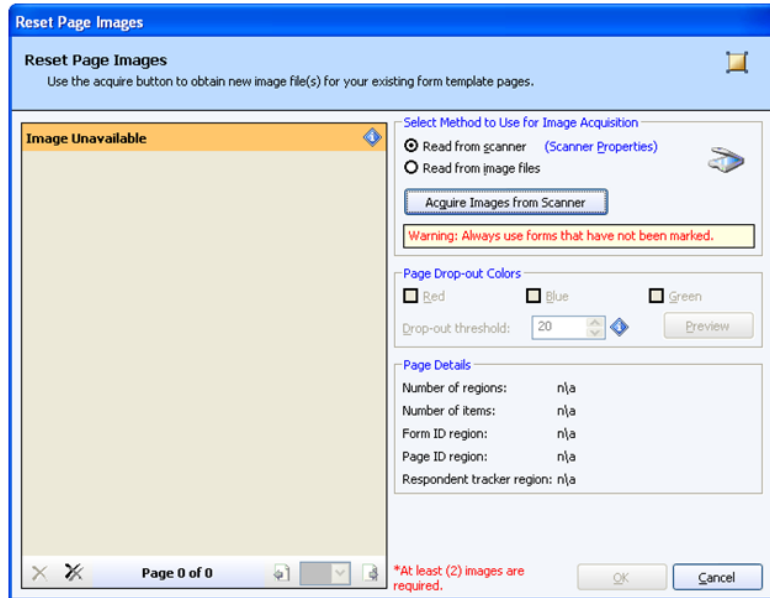


Select the Templates tab and Open Form Template to read the .st3 file. Remark will create a database in which to contain the scanned data in accordance with the definition contained in the .st3. The column headings will match the question labels from SurveyPro.

Re-select the Templates tab and click Edit Form Template.



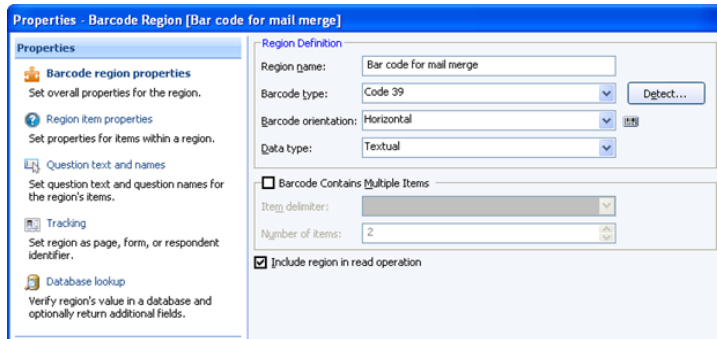
In this Template Editor select Tools, Reset Images which will capture an image of a real form to fine-tune the alignment of answer areas taken from the .st3 file:



Use your blank questionnaire for the template. Select Read From Scanner and click Acquire Images from Scanner. For a multipage questionnaire load all of the template pages in the feeder. Remark knows how many pages to expect for the questionnaire from the .st3 file, shown at the bottom of the screen shot. It can accommodate either single or double sided forms with scanners that read one side (simplex) or both (duplex). Click Scanner Properties or check the Remark help system for how to get the page count scanned to match the pages needed.

Once the page images are in click OK. Use Auto Alignment Yes which will overlay the answer “hot spots” on the scanned form. Adjust any that are misaligned, which can happen because real sheet feeders are not perfect, hence the possible need for fine-tuning.

For bar codes, if they are mail-merged answers to a question then Remark will have created an entry region for them. Verify the region’s settings are Code 39 and Horizontal:



For graphic tiles with fixed barcode values like document IDs you will need to create an entry in the database using Insert Barcode Region and assign it the Code 39 type and horizontal entry. In either case make sure the active region has enough width for the longest barcode you expect for these questionnaires.

Save the template setup as an .omr file and close the Template Editor window.

Return to the Remark Office OMR main screen with the data grid. It may still have the .st3 “draft template” open so open the edited .omr template file you just saved.

To scan some test forms first try the Easy Scan option in the toolbar. If that does not work out then use the Read Wizard which has all the detailed controls available.



Check the OMR bubble and barcode data cells for correct answers. If the test scan finds non-existent answers in blanks spaces then the OMR is too sensitive. Go to Tools, Recognition Settings, choose Template or Default, and Recognition. Adjust the Global OMR region threshold upward (4 was better than 3 for our scanner for example).

Do the entry for written answers by selecting each answer cell and typing the text shown in the Image Viewer window.

Use File, Save Data As to save the data as to the SurveyPro .srv format.

In SurveyPro: Open your project file and import the .srv file.

In the Database menu, choose Import from, and then choose Comma Delimited (csv,srv)

Change Files of Type to Scanned or All Files and locate the .svr file

An Import dialog appears. On the General tab, make sure First Record is Field Names is checked

On the Field Matchup tab the questions in SurveyPro are in the top window and the raw data you are importing is in the bottom window. Put the number of the correct Field from the bottom window to match the correct question in the top window

Click Finish. By default, the imported forms will be appended to the forms already in the database.

Click yes to save the Import Map for future imports of this .srv format.

Make sure the test data tracks all the way through from marks on questionnaires to the SurveyPro data table report.

Scanning Respondent Forms

Once this process tests successfully, print the real questionnaires. When they come back simply start Remark, open the .omr file, stack the forms in the scanner (make sure the simplex/duplex settings are ok for this batch), scan, do the written entries, save as .srv and import.