Security Management Maturity Questionnaire

A Survey Based Assessment of Management Practices

Version: 1.0 - September 2011

Administrators Guide

This document was prepared for the United States Department of Homeland Security.

SEI Administrative Agent
ESC/XPK
5 Eglin Street
Hanscom AFB, MA 01731-2100

The ideas and findings in this report should not be construed as an official U.S. Government or U.S. Agency (including, but not limited to DoD or DHS) position. It is published in the interest of scientific and technical information exchange.

This work is sponsored by the U.S. Department of Homeland Security. The Software Engineering Institute is a federally funded research and development center sponsored by the U.S. Department of Defense.

Copyright 2011 Carnegie Mellon University.

NO WARRANTY

THIS CARNEGIE MELLON UNIVERSITY AND SOFTWARE ENGINEERING INSTITUTE MATERIAL IS FURNISHED ON AN "AS-IS" BASIS. CARNEGIE MELLON UNIVERSITY MAKES NO WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED, AS TO ANY MATTER INCLUDING, BUT NOT LIMITED TO, WARRANTY OF FITNESS FOR PURPOSE OR MERCHANTABILITY, EXCLUSIVITY, OR RESULTS OBTAINED FROM USE OF THE MATERIAL. CARNEGIE MELLON UNIVERSITY DOES NOT MAKE ANY WARRANTY OF ANY KIND WITH RESPECT TO FREEDOM FROM PATENT, TRADEMARK, OR COPYRIGHT INFRINGEMENT.

Use of any trademarks in this report is not intended in any way to infringe on the rights of the trademark holder.

Internal use. Permission to reproduce this document and to prepare derivative works from this document for internal use is granted, provided the copyright and "No Warranty" statements are included with all reproductions and derivative works.

External use. This document may be reproduced in its entirety, without modification, and freely distributed in written or electronic form without requesting formal permission. Permission is required for any other external and/or commercial use. Requests for permission should be directed to the Software Engineering Institute at permission@sei.cmu.edu.

This work was created with the funding and support of the U.S. Department of Homeland Security under the Federal Government Contract Number FA8721-05-C-0003 between the U.S. Department of Defense and Carnegie Mellon University for the operation of the Software Engineering Institute, a federally funded research and development center. The Government of the United States has a royalty-free government-purpose license to use, duplicate, or disclose the work, in whole or in part and in any manner, and to have or permit others to do so, for government purposes pursuant to the copyright license under the clause at 252.227-7013. Any reproduction of this material or portions thereof marked with this legend must also reproduce the disclaimers contained on this page.

About this document

This document presents the Department of Health and Human Services Electronic Health Record (EHR) Capability Assessment Administrators Guide. The guide explains how to use the various tools provided to setup, score and report, and maintain data collected through application of the EHR Capability Assessment.

The Administrators Guide is comprised of three sections

- **Section 1** provides an overview of the process and setup for administrating surveys
- **Section 2** covers management of the completed surveys and exporting the data files
- **Section 3** details import of the data files into the scoresheet and generating reports.

1 Overview and Setup

Overview

Administering the SMMQ assessments is a simple process involving:

- Distributing the surveys
- Supporting survey completion
- Collecting completed surveys
- Creating survey data files
- Scoring surveys
- Generating survey reports

These steps are briefly described here. Additional detail for creating data files, scoring and reporting is provided in the remainder of this Administrator Guide.

Distributing the survey – The survey is an Adobe Reader form which can be distributed to users for completion or made available as a download via website. The form is configured such that it can be saved by a user during completion. This enables starting and stopping the assessment process and eventual submission of a completed survey. Once complete the user can use the *Submit by Email* button within the form to generate an answer data file that will be sent to the administrator for processing.

Supporting survey completion – Often a user will have questions before, during and after completion of the assessment survey. The administrator should be available to answer those questions to ensure proper understanding of the assessment questions, answer options and the resulting report.

Collecting completed surveys – When users submit their completed surveys, the administrator should apply a standard naming convention to the files (e.g., *UserName.Date.pdf*) and store the files in a completed survey repository for later access.

Creating survey data files – A users completed survey answers are extracted from the surveys into a survey data file for processing. This is done from within Adobe Acrobat Pro. Details of this are provided in Section 2 of this Administrator Guide.

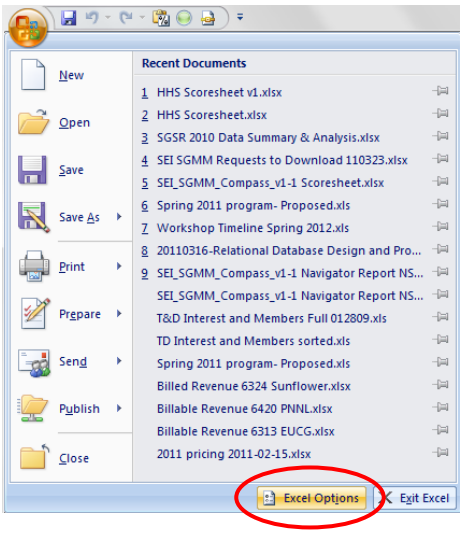
Scoring surveys – To score a submitted survey, the associated data file must be imported into the Scoresheet. Once imported, the results are available for analysis, validation, and subsequent report generation. Details are provided in Section 3 of this Administrator Guide.

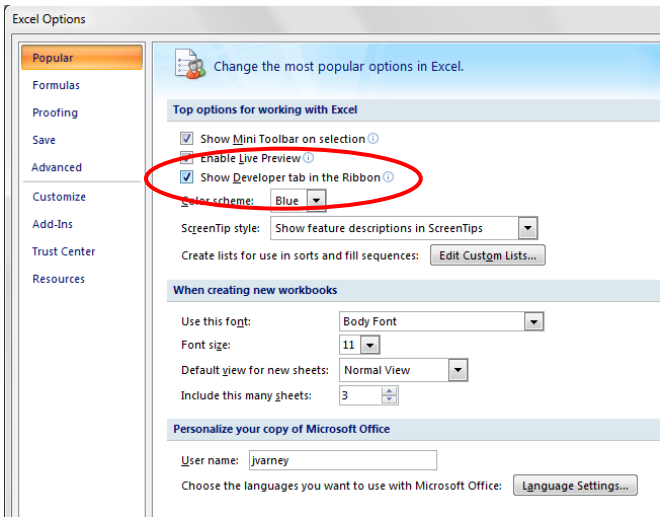
Generating survey reports – Once a survey is scored, the administrator can generate both printed and electronic reports for the user. Details are provided in Section 3 of this Administrator Guide.

Setup

In order to manage completed surveys and the scoresheet the administrator must have Adobe Acrobat Pro and Microsoft Excel on their computer. Adobe will be used to create a data extract from each survey and Excel is used to import that data file to the scoresheet and create report files.

In Excel, the administrator must have the *Developer* tab turned on in the Ribbon. To do so, start by opening the Excel Options dialog and selecting the checkbox as shown below.





This is necessary to enable the XML Import features embedded within the Scoresheet.

Managing Completed Survey Files

The preferred method for creating the answer data file is for the survey navigator to use the *Export Data* button in the form.

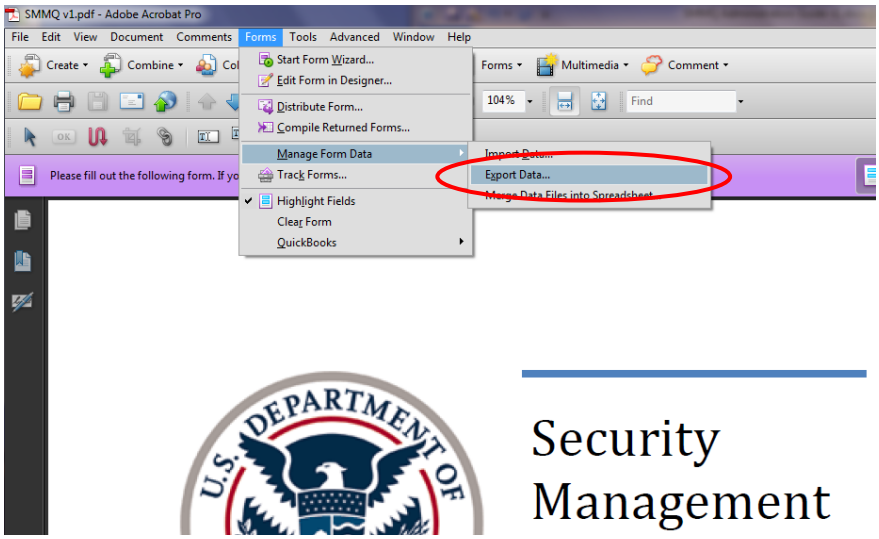
Clicking this button will launch a save as dialog where the user can specify a location and file name for the answer data file.

<u>Alternate Method 1</u>

An alternate method to submit the survey and create the scoreable data file is to use the *Submit by Email* Button. This method will generate an answer data file in XML attached to an email with the administrators email address. This file is ready for processing and reporting.

<u>Alternate Method 2</u>

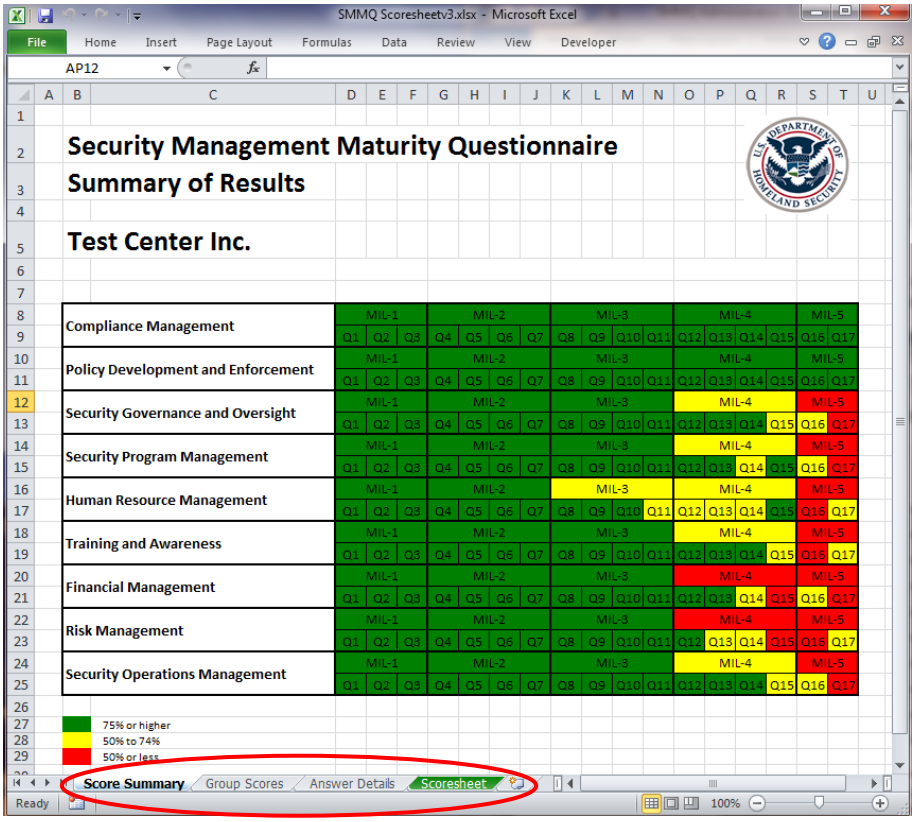
If the completed PDF survey file is submitted rather than the answer data file, the administrator may extract the data for scoring from within Adobe Acrobat Pro. To extract a data file from a completed survey, open the survey in Adobe Acrobat Pro and select *Forms:Manage Form Data: Export Data…* (Note: these features are not available in Acrobat Reader)



This launches the export dialog. Select a location to save and name the data file according to your naming standard for survey submissions. This creates a data extract file ready to import into the Scoresheet.

Managing the Scoresheet and Reports

The Capability Assessment Scoresheet is used to score, aggregate and report the results from completed surveys. The scoresheet is a Microsoft Excel worksheet that includes three tabs – Score Summary, Assessment Results and Scoresheet:



The Score Summary tab provides a view of the overall results from the assessment. The Group Score tab shows a summary of scores compared to an aggregate score of previous participants. The Answer Detail tab shows the question by question results along with the aggregated responses from all completed surveys. The Scoresheet tab is used to import a completed surveys data file and view validation checks.

The steps to process a completed survey are:

- Prepare for import
- Import data file
- Analyze and validate
- Generate Report

Each of these steps is detailed below.

For each received assessment survey, the scoresheet must be prepared for import of the data. This allows creation and maintenance of a master set of survey data for all received surveys in a single scoresheet file. This also provides comparison data reported in the results.

The structure of the Answer Detail tab includes the results data (columns A-E) and the master data set (columns G and beyond). To use the scoresheet properly, each new survey is imported and then saved in the master data set before the next survey is imported.

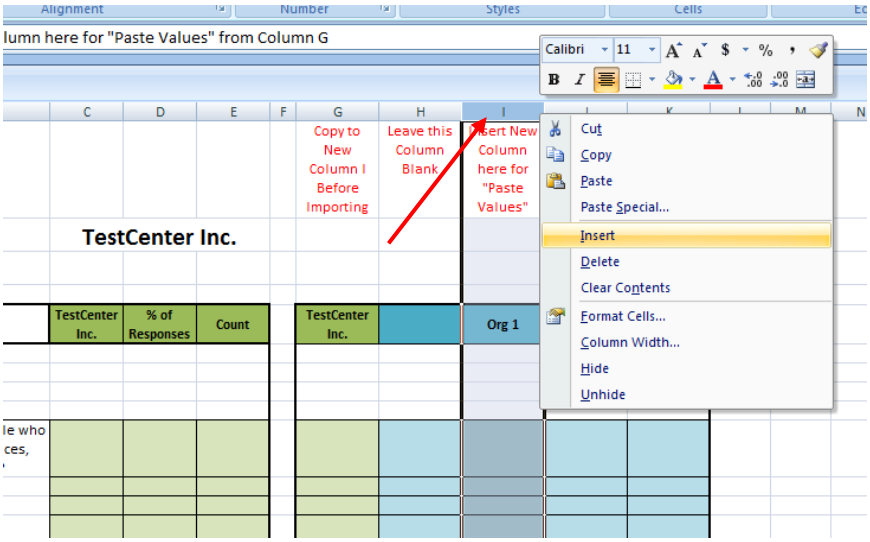
Results Data **Master Data Set**

M28

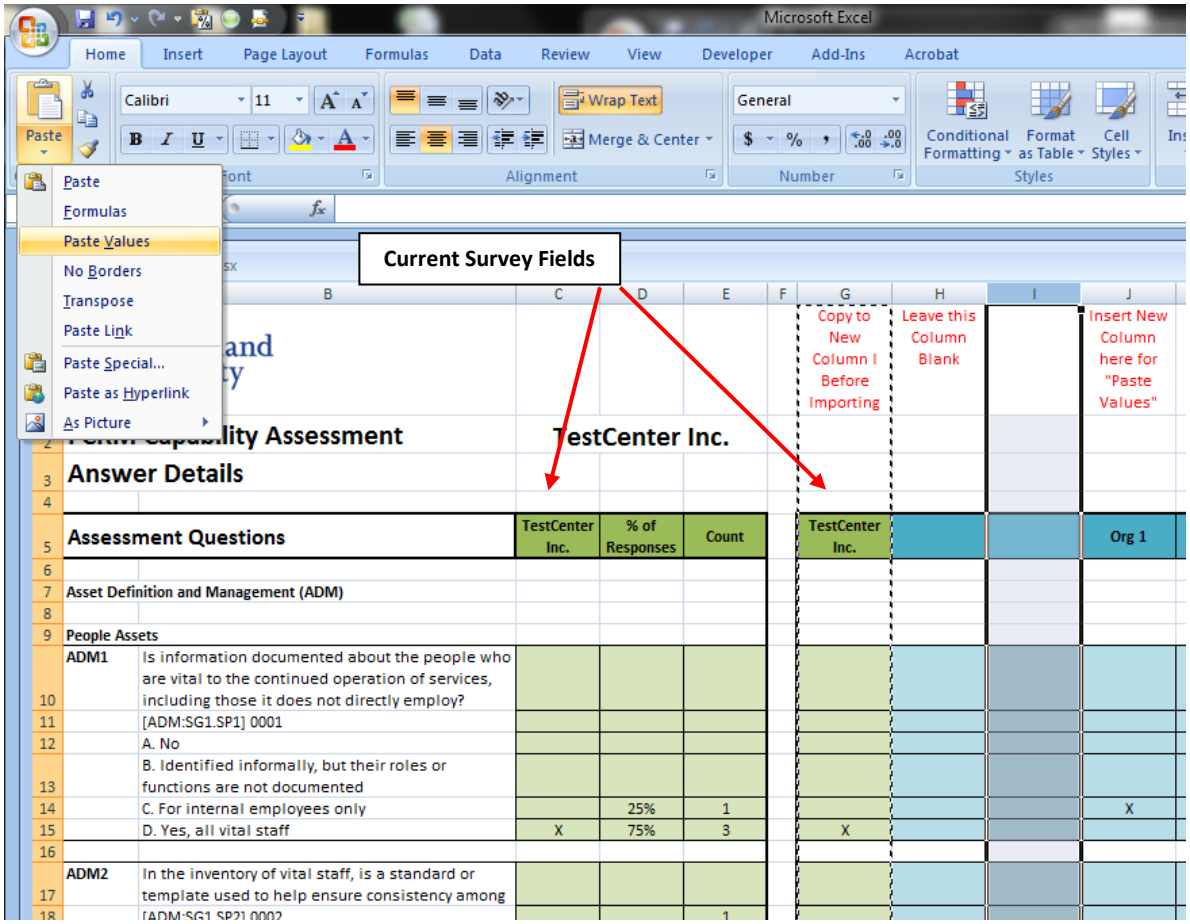
	A	B	C	D	E	F	G	H	I	J	K	L
1		**Security Management Maturity Questionnaire**					Copy to New Column I Before Importing New Survey	Leave this Column Blank	Insert New Column here for "Paste Values" from Column G			Dummy data in Columns I, J & K should be deleted before first use
2		**Answer Details**	**Test Center Inc.**									
3												
4												
5	**Assessment Questions**		Test Center Inc.	% of Responses	Count		Test Center Inc.		Test Center Inc.	Test Center Inc. 2	Test Center Inc. 3	Test Center Inc. 4
6												
7												
8												
9	**Compliance Management**											
10												
11												
12	**Base Practices**	1. There is an up-to-date inventory of compliance obligations.										
13		A. Yes	X	100%	5		X		X	X	X	X
14		B. Likely Yes										
15		C. Equally Likely										
16		D. Likely No										
17		E. No										
18		F. Don't Know										
19												
20		2. The inventory of compliance obligations is analyzed for conflicts and duplicate obligations.										
21		A. Yes		20%	1							X
22		B. Likely Yes	X	60%	3		X		X	X		
23		C. Equally Likely		20%	1						X	
24		D. Likely No										
25		E. No										
26		F. Don't Know										

<u>Prepare for Import</u>

Before importing a new data file, you must move the previously scored survey data (green columns) into the aggregate data set (blue columns). This is done by inserting a new column before column I. Right click the column I header and select *Insert.*



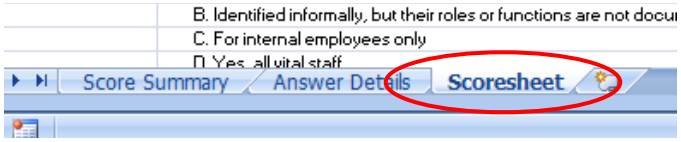
Now Copy the contents of column G and *Paste Values* into the inserted column.



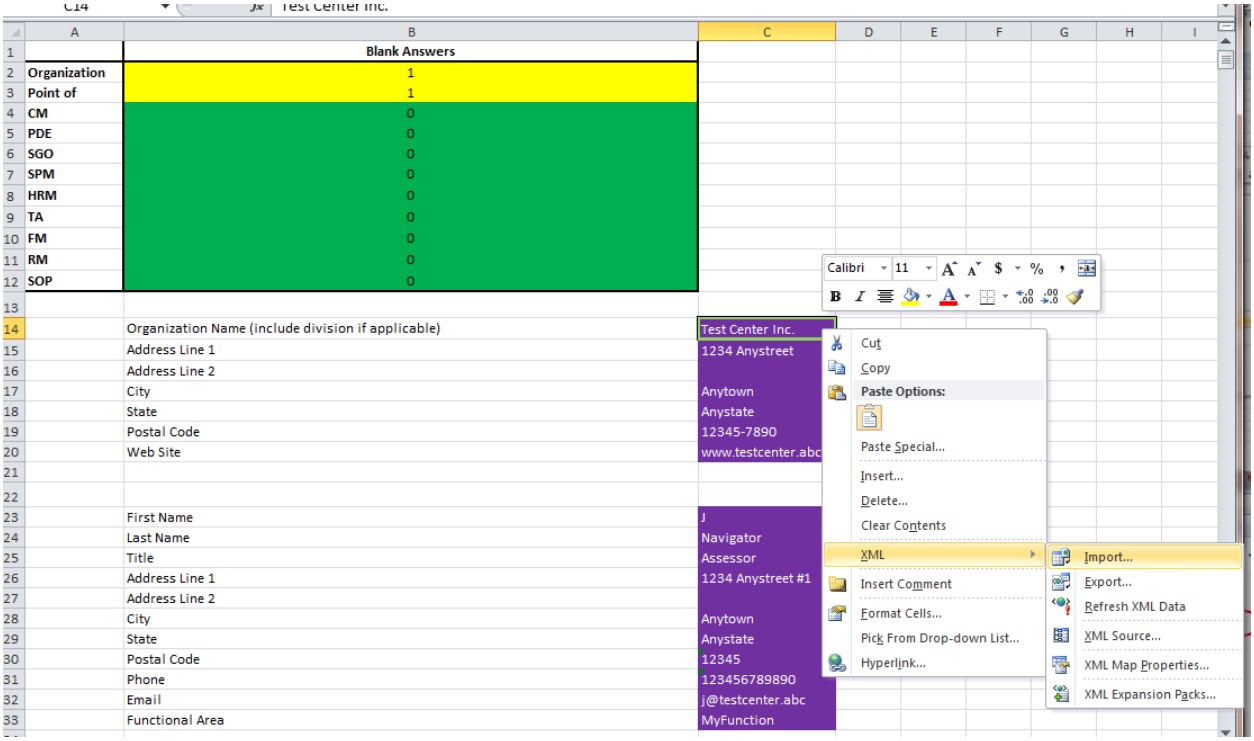
This moves the previous survey data – in this case TestCenter Inc. – into the master data set and allows the next import to populate the current survey fields. Now the next survey can be imported.

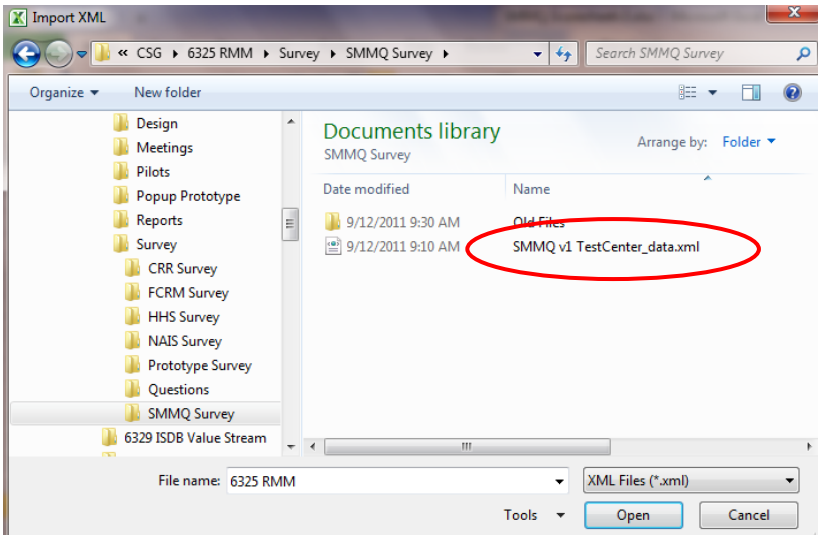
Import Data File

Import of a survey is completed in one step after the preparation detailed above is finished. Select the *Scoresheet* tab:



Right click any of the purple cells and select *XML:Import…* to bring up the import dialog box.

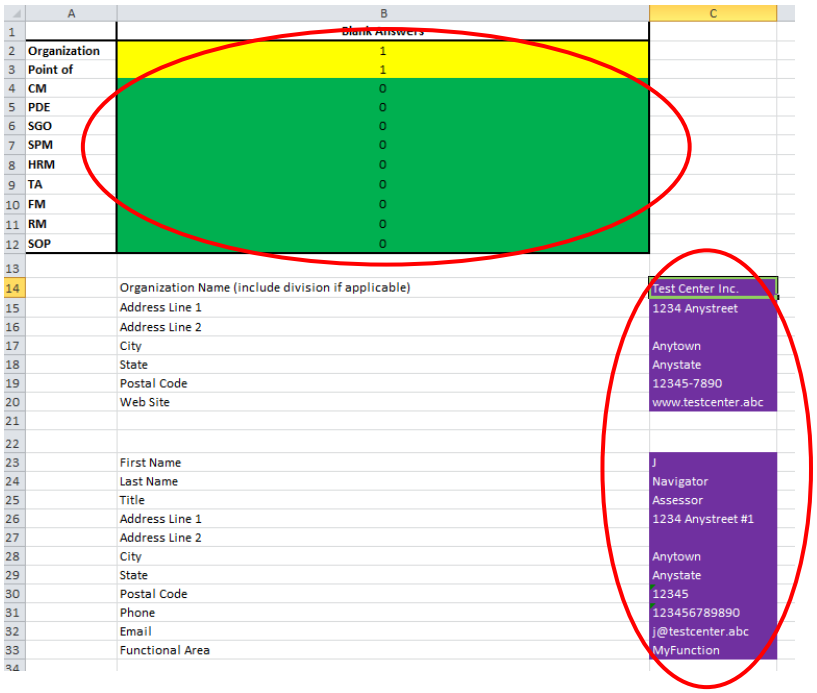




From this dialog, navigate to the data file created for the new survey and open it. All answers from that survey are automatically imported, scores generated, validation checks performed and the *Assessment Results* tab populated with the results.

Analyze and Validate

Some basic analysis and validation features are built into the *Scoresheet* tab: counts of blank answers by section. These are generated upon import of a data file. This allows the administrator to confirm whether unanswered questions should be discussed with the user.



	A	B	C
1		Blank Answers	
2	Organization	1	
3	Point of	1	
4	CM	0	
5	PDE	0	
6	SGO	0	
7	SPM	0	
8	HRM	0	
9	TA	0	
10	FM	0	
11	RM	0	
12	SOP	0	
13			
14		Organization Name (include division if applicable)	Test Center Inc.
15		Address Line 1	1234 Anystreet
16		Address Line 2	
17		City	Anytown
18		State	Anystate
19		Postal Code	12345-7890
20		Web Site	www.testcenter.abc
21			
22			
23		First Name	J
24		Last Name	Navigator
25		Title	Assessor
26		Address Line 1	1234 Anystreet #1
27		Address Line 2	
28		City	Anytown
29		State	Anystate
30		Postal Code	12345
31		Phone	123456789890
32		Email	j@testcenter.abc
33		Functional Area	MyFunction

The raw data from a survey is also provided in the purple shaded cells.

Scores for each area are calculated assessment values based upon the answers in the survey and provide a weighted assessment of SMMQ capability, from 0% to 100%. These are shown at the top right (blue cells) of each set of questions on the Scoresheet tab.

35				
36	**Compliance Management**			
37				
38				
39	**Base Practices**	1. There is an up-to-date inventory of compliance obligations.	1	100%
40		A. Yes	1	
41		B. Likely Yes	0	
42		C. Equally Likely	0	
43		D. Likely No	0	
44		E. No	0	
45		F. Don't Know	0	
46				
47		2. The inventory of compliance obligations is analyzed for conflicts and duplicate obligations.	2	
48		A. Yes	0	
49		B. Likely Yes	1	

The Score Summary tab provides a quick view of the scores for all process areas with color coding to indicate level of compliance to the goals of the survey.

Security Management Maturity Questionnaire
Summary of Results

Test Center Inc.

	MIL-1			MIL-2				MIL-3				MIL-4				MIL-5	
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17
Compliance Management																	
Policy Development and Enforcement																	
Security Governance and Oversight																	
Security Program Management																	
Human Resource Management																	
Training and Awareness																	
Financial Management																	
Risk Management																	
Security Operations Management																	

75% or higher
50% to 74%
50% or less

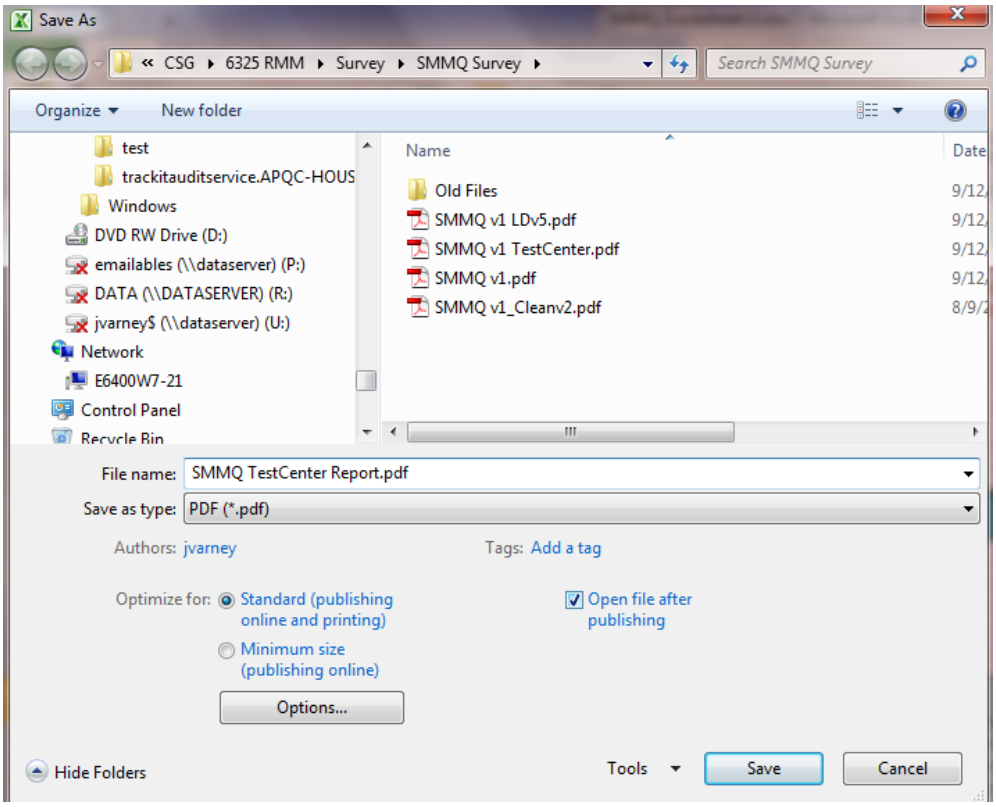
Score Summary | Group Scores | Answer Details | Scoresheet

The type and level of analysis and validation conducted by the administrator can be determined by SMMQ. Suggestions include confirming any blank answers were intentional and insuring data in sections 1 & 2 is sufficient to provide support to the user.

Generate Report

There are two methods to generate a report for the user from the Scoresheet – printed and PDF file. In both cases start on the *Score Summary* tab. With Score Summary selected, shift-click Answer Details to select multiple tabs. Now select Print to initiate printing a hardcopy report.

To create an electronic file (PDF) in MS Excel 2010 use the *Save As* feature of Excel to launch the dialog box.



Change the *Save as Type* to PDF (*.pdf), name your report file, and click the *Save* button.

The procedure for earlier versions of MS Excel requires using the *Save as PDF* rather than *Save as*, and following the instructions for the dialogs that launch.