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Survey Testing Automation Tool (STAT)

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About This Publication

This work was conducted under IDA's independent research program C9095, "Survey Testing Automation Tool." The views, opinions, and findings should not be construed as representing the official position of either the Department of Defense or the sponsoring organization.

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Executive Summary

As an Operational Test Agent (OTA) for the Department of Homeland Security, the Institute for Defense Analyses has developed a new tool, the Survey Testing Automation Tool (STAT), to help manage and administer operator surveys and to quickly analyze responses. During an operational test, surveys are typically distributed in-person using paper copies. After administering the surveys, the OTA has to quickly review the responses, and try to gather information that might lead to a more informative interview that follows. Managing survey questions and responses over multiple years is a challenge, especially as new versions of the surveys proliferate. This new tool will reduce the effort to manage survey questions, and will produce a quick analysis of the survey responses, allowing OTAs to ask more informed questions during interviews.

In this work, we present the web-based Survey Testing Automation Tool with a Structured Query Language (SQL) database backend, which integrates and automates survey construction, administration, and analysis procedures. The

Survey Testing Automation Tool introduces a standardized approach to the construction of surveys and includes capabilities for survey management, survey planning, and form generation.

The surveys are administered via a website, using a locally hosted ad hoc wireless or wired network, or via the internet. Hosting the surveys this way gives administrators the flexibility to use multiple devices, such as portable electronic devices (tablets, laptops, or smart phones), which removes the dependency on paper survey forms.

The back-end analytics feature provides real-time analysis of survey responses, presenting the survey and interview administrator summary charts from the survey data. These summary charts help survey administrators to conduct more informed follow-up interviews during an assessment by identifying areas that the operators consider good, bad, or neutral, and reduce time needed to build charts for further reporting.



Survey Testing Automation Tool (STAT)

Kelly Tran, Tara McGovern, Bill Whitledge, and Gary Finnegan

Institute for Defense Analyses

ABSTRACT

In operational testing, survey administration is typically a manual, paper-driven process. We have developed a web-based tool called Survey Testing Automation Tool (STAT), which integrates and automates survey construction, administration, and analysis procedures. STAT introduces a standardized approach to the construction of surveys and includes capabilities for survey management, survey planning, and form generation.

OBJECTIVE

- Create a professional program to administer surveys electronically instead of manually.
- Reduce time spent constructing surveys and analyzing survey responses.
- Expand IDA's operational testing and analysis capability.
- Provide a free automated analysis capability to the operational test community.

DESIGN

- Manage surveys, survey questions, and survey responses in an SQL database.
- Administer surveys via a website that may be hosted locally (stand-alone) or on the internet.
- Analyze survey responses using Python and GNU Octave.

survey_database			
surveys	questions	survey_in_questions	survey_in_responses
project_name	question_id	question_id	response_id
project_abbrev	question_version	question_id	response_time
date_create	date_create	user_name	response_type
test_type	user_name	operational_capability	question_text
survey_type	operational_capability	measure_of_performance	
survey_instructions	measure_of_performance		
blank_scale	response_type		
blank_sda	question_text		



MANAGE

Manage Surveys

Create a new survey from scratch or use an existing survey as a template.
Organize surveys by project, test type, and survey type.

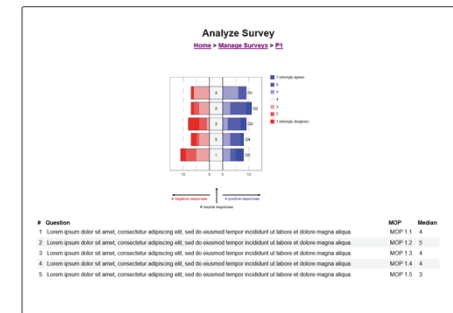
Manage Questions

View questions from all projects. Manage different question types including: free response, multiple choice, and Likert (5-, 6-, 7-point scale).

ANALYZE

Analyze Survey Responses

Real-time analysis of survey responses as data is collected.



OUTCOME

- Developed an integrated web-based survey tool to manage, administer, and analyze surveys.
- Ability to manage questions and responses for long-term projects.
- Conduct more informed follow-up interviews during an assessment.

FUTURE CAPABILITIES

- Sort survey questions
- Export survey data
- Enhance analysis reporting

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ADMINISTER

Administer Surveys Electronically

REPORT DOCUMENTATION PAGE

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