



# **TestMaker 5 User Interaction Design**

This document supplements the TestMaker 5 Completion Specification document with definition of the user interaction.

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## 1. Current Status

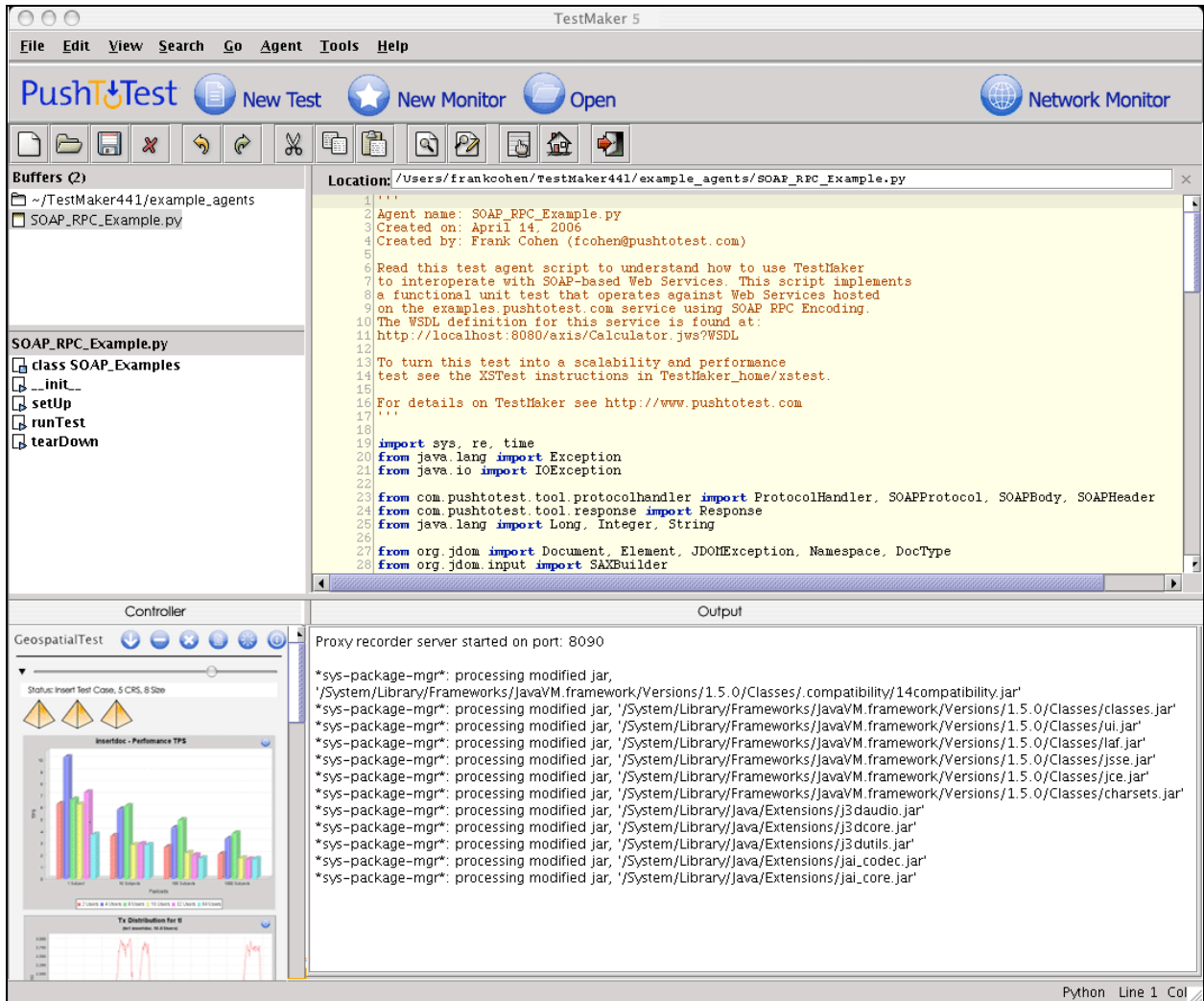
PushToTest awarded a software development contract to Group Avantica to build TestMaker 5. PushToTest anticipates completion of TestMaker 5 in April 2007. This document supplements the TestMaker 5 development plan by specifying the user interaction.

TestMaker 5 will offer enhancements to the user interaction in the following areas:

- Enhancements to the main graphical interface
- A new controller to operate TestScenarios
- A new HTTP/HTTPS/AJAX recorder to create test scripts
- A new SOAP Wizard to create Web Service scripts

## 2. Enhancements To The Main Graphical Interface


The Main Graphical Interface uses the underlying architecture from TestMaker 4. `com.pushtotest.testmaker.gui.ScriptEditor.TMFrame` provides a wrapper for the J Editor. `TMFrame` adds the Controller and Output panels to the bottom of the J Editor.



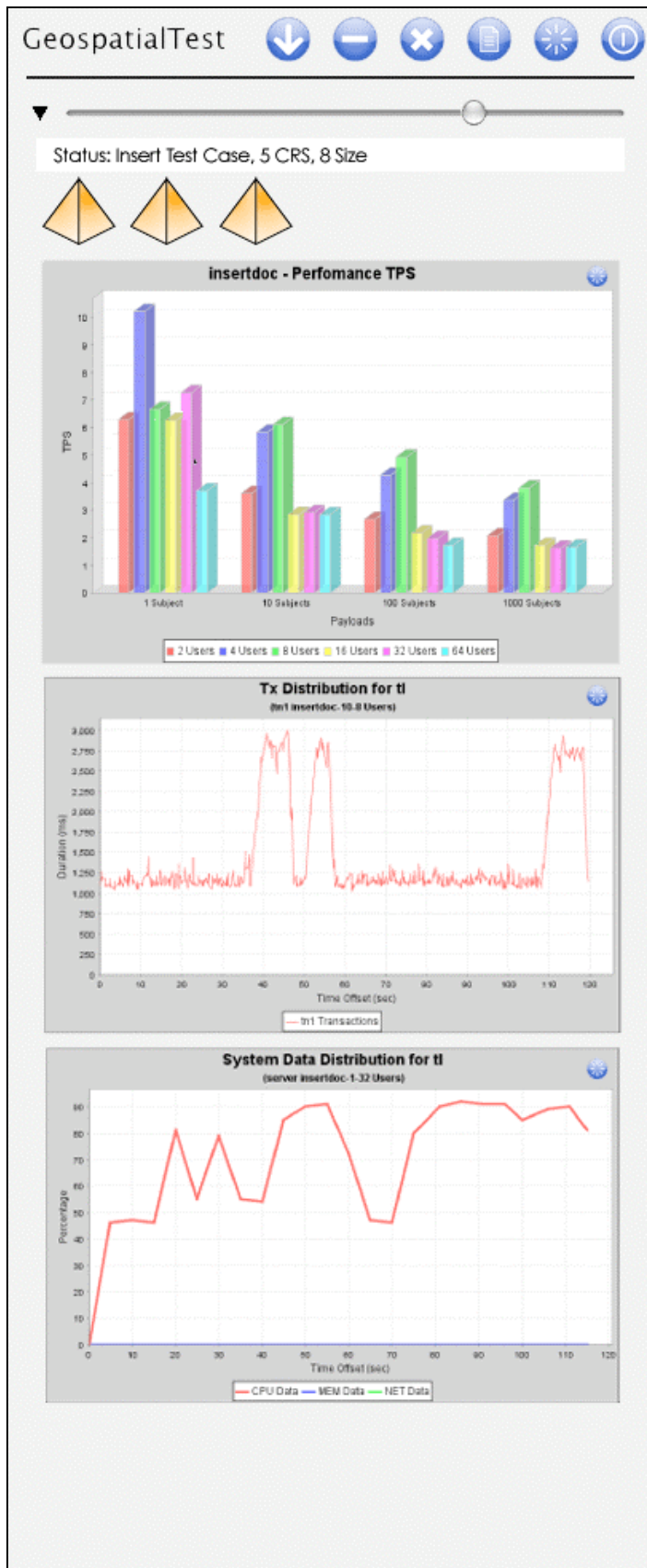
TestMaker 5 enhances user interaction by changing the following:

1. A new PushToTest icon bar appears below the menu bar. The icon bar displays icons to create a new test, create a new service monitor, open an existing TestScenario, and open the Network Monitor window. The icon bar shows the PushToTest logo. Clicking the logo opens a browser and points to <http://www.pushtotest.com>.

Clicking the new test icon displays a dialog box. The user chooses to create a new script using the Firefox TestGen4Web plug-in, create a new test using the soapui application, or create a new empty Jython script. See [com.pushtotest.testmaker.gui.NewAgentWizard.ChooseScriptType](http://com.pushtotest.testmaker.gui.NewAgentWizard.ChooseScriptType) for an example of the dialog box form.

2. The Controller replaces all of the existing TestRunner functions from TestMaker 5. The new Controller appears in the lower right corner of the main interface. See section 3 for details.
3. The Output panel in TestMaker 4 offered users a choice of viewing Output and Meters-and-Charts. The Output panel in TestMaker 5 now will show only textual output. The Meters-and-Charts ability moves to the Controller entry for the running TestScenario.
4. TestMaker 5 introduces a new "expand this panel into its own window" convention. The "expand" icon  moves a panel to its own JFrame window. Expanded panels may be shrunk and returned to their original location by clicking a "shrink" icon in the title bar of the JFrame. Lastly, a new Windows drop-down menu appears in the main window to let users change the selection and bring-to-front a selected "expanded" window.

### 3. A New Controller To Operate TestScenarios



Open TestScenarios appear as a vertical stack of panels in the Controller panel. Users open a TestScenario using the File -> Open command or the Open icon in the menu bar. Users close a TestScenario using the close icon in the panel.

A panel for a TestScenario has these features:

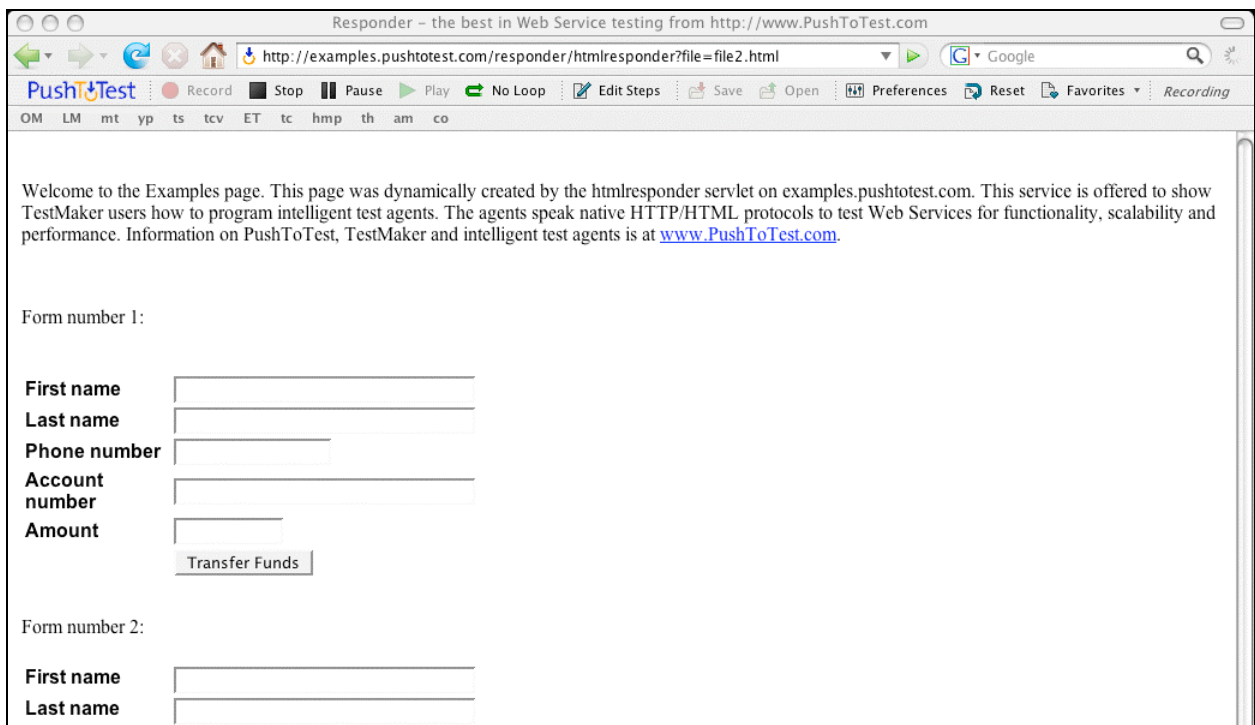
- The top of the panel displays the name of the TestScenario from the <name> element.
- To the right of the name is a list of icons to: run, pause, stop, edit, expand-to-a-window, and close.
- Below the name and icon is a "twisty" that controls display of everything below it.
- To the right of the "twisty" is a horizontal slider. This allows the user to manually adjust the test case of a running TestScenario.
- Below the "twisty" is a list of icons to show the status of each TestNode. Rolling the mouse over each icon displays the current snapshot data for the TestNode.
- Below the TestNode icons are the charts for this test. The top-most chart is always the live results showing TPS. (Note: There will be a special version of these charts for Service Monitor tests. I will provide this in a subsequent document titled Service Monitor Specification.)

The "edit" icon for a TestScenario in the controller operates the XML2Swing-based editor found in `com.pushtotest.testmaker.filehandlers.testscenario.guiElementPanel`. This needs to be modified to allow users to switch to a text view and make changes directly to the XML of the TestScenario.

## 4. A New HTTP/HTTPS/AJAX Recorder To Create Test Scripts

The TestMaker 5 project has a major feature enhancement to the Recorder to support HTTPS and AJAX. During its development Frank Cohen found two browser-based test recorder plug-in projects<sup>1</sup> that have an advantage over continuing with the MaxQ proxy recorder architecture. TestMaker 5 will substitute the current Recorder for a Firefox plug-in.

The plug-in is based on TestGen4Web, an open source project from SpikeSource. TestGen4Web is a Firefox plug-in that displays a user interface of test recorder features below the Firefox menu bar.



<sup>1</sup> Selenium at <http://www.openqa.org/selenium-ide> and TestGen4Web at <http://developer.spikesource.com/wiki/index.php/Projects:TestGen4Web>

Users operate the Edit Steps function to view and change the order of the functional test.

The screenshot shows the Responder web interface. At the top, there is a browser window with the URL `http://examples.pushdotest.com/responder/htmlresponder?file=file1.html`. Below the browser window, there is a toolbar with buttons for Record, Stop, Pause, Play, No Loop, Edit Steps, Save, Open, Preferences, Reset, Favorites, and Recording. The main content area displays a table of recorded steps with the following columns: Id, Label, Action, XPath, Value, and Page Refresh. Below the table are buttons for New Step, Edit, Delete, Move Up, and Move Down, along with an OK button. At the bottom, there is a legend for various actions: redirect (returns a 303 redirect), timeout (throws a timeout exception), lingosize (returns random paragraphs), and bomb (throws a servlet exception). A footer note provides information about the htmresponder servlet and its license.

Id	Label	Action	XPath	Value	Page Refresh
1		goto	window.location.href	http://examples.pushdotest.co...	true
2		verify-title	*	Responder - the best in Web Se...	false
3		click	*/TABLE[1]/TBODY[1]/TR[4]/T...		true
4		verify-title	*	Responder - the best in Web Se...	false
5		fill	*/FORM[1]/*/INPUT[@TYPE="te...	Frank	false
6		fill	*/FORM[1]/*/INPUT[@TYPE="te...	Cohen	false
7		fill	*/FORM[1]/*/INPUT[@TYPE="te...	374 7426	false
8		fill	*/FORM[1]/*/INPUT[@TYPE="te...	100	false
9		fill	*/FORM[1]/*/INPUT[@TYPE="te...	55.00	false
10		click	*/FORM[1]/*/INPUT[@NAME="...	Transfer	true
11		verify-title	*	Responder - the best in Web Se...	false
12		click	*/TABLE[1]/TBODY[1]/TR[4]/T...		true
13		verify-title	*	Responder - the best in Web Se...	false

redirect returns a 303 redirect to the defined URL  
 timeout if set to true the htmresponder servlet throws a timeout exception  
 lingosize when set to a non-zero value skips the file setting and returns an html page containing random paragraphs of lingo text  
 bomb when set to a non-zero value it waits that amount of milliseconds and then throws a servlet exception

For questions regarding htmresponder see the [Support Options](#) page on the [PushToTest](#) Web site. The htmresponder servlet is distributed with TestMaker under an Apache-style open-source license.

TestMaker will offer two significant changes:

- The recorder creates an XML file. TestMaker 5 adds a File -> Import command that reads the recorded XML and outputs a Jython/JUnit TestCase-based script. The script uses the HTTPUnit APIs to interact with the target Web host.
- The SpikeSource and TestGen4Web logos will be replaced by the PushToTest logo.

## Changing From A Proxy Recorder To A Browser Plug-in Recorder

The change from a proxy recorder to a browser-based plug-in recorder may introduce changes to TestMaker's effectiveness. The following information will appear in the TestMaker 5 documentation.

TestMaker 4 uses a network proxy recorder to watch network traffic between the browser and target Web application. The traffic defines the context of a functional test. The recorder outputs a Jython script that implements a JUnit TestCase class to play back in the TestMaker environment. The play back mimics the browser and generates load on the target host.

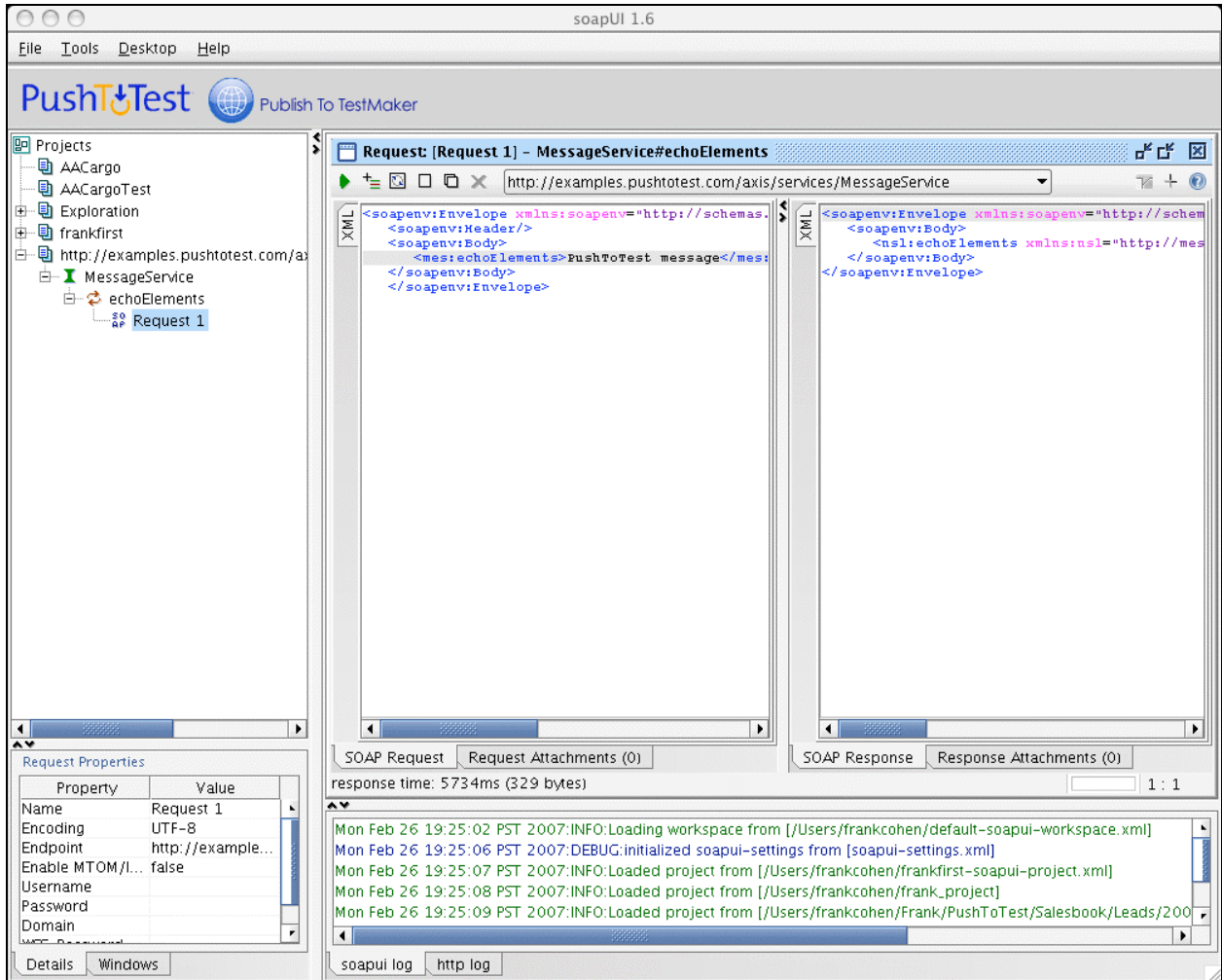
TestMaker 5 uses a browser plug-in to watch your use of the browser itself. The plug-in creates an XML file that is then imported into TestMaker and turned into a functional TestCase that uses HTTPUnit APIs to interact with the target host. Wrapping the functional TestCase in a TestMaker TestScenario turns the TestCase into a scalability, performance, and load test.

By watching the browser (Firefox) there may be specific browser behavior that skews the recording. For example, Firefox support for Javascript may diverge from Javascript in MS Internet Explorer. TestMaker users have three choices:

- Users will still be able to record scripts using the TestMaker 4 recorder by running TestMaker 4.
- Users may write scripts manually to implement the browser-specific functions.
- Users may ask PushToTest for a modification to TestMaker to support the new browser-specific style
- Users may make changes to the recorder and contribute the changes back to the open-source project.

## 5. A New SOAP Wizard To Create Web Service Scripts

TestMaker 5 will integrate the open-source soapui<sup>2</sup> project as a utility to create tests of SOAP-based Web Services.



TestMaker will offer two significant changes:

- Soapui creates an XML file of a functional test. TestMaker 5 adds an File -> Import command that reads the recorded XML and outputs a Jython/JUnit TestCase-based script.
- Add a PushToTest icon bar with an icon to "Publish To TestMaker" that saves the XML file and launches TestMaker.

<sup>2</sup> <http://www.soapui.org/>