

**Certification Assistance Tool**

Code/Design Review





Created for

**Microsoft Game Studios**

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Revision History

|  |  |  |
| --- | --- | --- |
| Colen Garoutte-Carson (v-cogaro) | Initial draft | 6/6/2013 |
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# Primary Ownership Areas

## J. Kevin Connolly

* + UI Design/XAML
  + Documentation
  + Analysis
  + Testing

## Colen Garoutte-Carson

* + Framework

## Rose Kenner

* + Module Design and Implementation

## Matthew Klump

* + Simulated Input and Scripting
  + Testing

# Basic Design Requirements

* WPF
* XAML
* MVVM (Model-View-View Model)
* A Framework to host Modules
* Module per TCR Test Case
* Extendable to future test platforms

## Basic UI Design Components

### Framework

* + - 1. Main Window

##### Main Window related sources:

* View
  + MainWindow.xaml
  + MainWindow.xaml.cs
  + Styles.xaml
* ViewModel
  + MainViewModel.cs, ModuleViewItem.cs
  + TCRPlatformViewItem.cs, TCRVersionViewItem.cs, TCRCategoryViewItem.cs, TCRViewItem.cs, TCRTestCaseViewItem.cs
* DataModel.cs
* CertData.xml

##### Host Module UI

###### Module hosting related sources:

* IModuleContext.cs, ModuleContext.cs, XboxModuleContext.cs
  + Passed from Framework to Module
  + Provides Module with access to functionality in Framework.
* ModuleViewItem.cs
  + View Model class for module selection (not module’s own UI)

##### Display the text of TCR/CTC

HTML to XAML conversion of CTC text, to retain formatting

##### Device Pool

###### Device Pool related sources:

* View
  + MainWindow.xaml
  + MainWindow.xaml.cs
* ViewModel
  + XboxViewItem.cs

###### Display Xbox(s) in Xbox Neighborhood

###### Select Target Device(s) for Module

###### Control Xbox(s)

* + - 1. Settings

##### Configure current TCR Platform and TCR Version

Just for Xbox for now

##### Configure Game Title being tested

Auto-populate based on directory contents

##### Configure location of flashing utility

##### Settings related sources:

* View
  + Settings.xaml, Settings.xaml.cs
* View Model
  + SettingsViewModel.cs
* Settings.cfg
  + - 1. Debug Output Window (BAS 1 and 14)

##### Displays Debug Output from Xbox

##### Catches Dumps from: Assert, Exception, RIP

##### Debug Output related sources:

* View
  + DebugOutput.xaml, DebugOutput.xaml.cs, HasDebugOutputSymbolsConverter.cs, InvertHasDebugOutputSymbolsConverter.cs, MonitorAPIStatusConverter.cs
* View Model
  + DebugOutputViewModel.cs
* DebugStrings.cfg

### Modules

## Module Interfaces

* + ITCRPlatform.cs
  + ITCRVersion.cs
  + ITCRCategory.cs
  + ITCR.cs
  + ITCRTestCase.cs
  + IModule.cs
  + IModuleContext.cs
  + IDevice.cs
  + IXboxDevice.cs
  + IXboxTitle.cs
  + IProgressBar.cs
  + ModuleData.xml

## Xbox Interaction

* XboxDevice.cs
* XboxDebugManagerNative.cs
  + For functionality not available via Managed APIs
    - DmSetXboxNameNoRegister
    - DmFindPdbSignature
    - DmGetSystemInfo
    - DmGetConsoleDebugMemoryStatus
* LaunchXContent.xex
* CATNativeUtils.cpp
  + LookupSymbol()
    - Calls DIA2 API to open .XDB files

## Other Classes

### Theme

Theme.cs

### ProgressBar

ProgressBar.xaml, ProgressVar.xaml.cs, ProgressBarViewModel.cs

### Shutdown Synchronization

ShutdownSynchronization.cs

### Command.cs

### XAML Type Converters

InvertBoolConverter.cs, InvertBoolToVisibilityConverter.cs

### HtmlXamlConverter (from: <http://msdn.microsoft.com/en-us/library/aa972129.aspx>)

CssStylesheet.cs, HtmlCssParser.cs, HtmlFromXamlConverter.cs, HtmlLexicalAnalyzer.cs, HtmlParser.cs, HtmlScema.cs, HtmlToXamlConverter.cs

## LaunchXContent

* Xbox XEX to launch XContent based Content Package
* Uses XContentLaunchImageFromFile()
* LaunchXContent related sources:
  + LaunchXContent.vcxproj, LaunchXContent.cpp

## Other Noteworthy Functionality

### API Monitoring

Symbol Lookup

### Simulated Input scripts

## Modules

### TCR Test Case Module – BAS 1 and 14

* Built into Framework as DebugOutputMonitor Window
* Uses Debug Breakpoints to implement API Monitoring

### TCR Test Case Module – BAS 15

* Sign-in, Sign-out
* Uses specific quadrants for each profile
* Sign-out throws exception when already signed-out. Sign-in doesn’t throw.
* Create profile takes about one minute. Most of that is due (we believe) to Xbox looking for and not finding an Avatar
* No programmatic way to create an Avatar.

### TCR Test Case Module – GP 70

* Wizard for setup
* No API to detect current language, only to set language
* Difficult to parse for expected rich presence strings – complicated structure
* Captures screen shots and constructs html logs

### TCR Test Case Module – MPS 86

* Automation to disable multiplayer. No API
* Terminology on dev dashboard is Xbox Live Privileges instead of multiplayer
* No API to detect if multiplayer is enabled or disabled

### TCR Test Case Module – STR 50

* Wizard module
* Many steps
* Requires one storage device at a time: HDD, MU, USB
* No API to disable internal MU/USB – we use automation
* No way to disable just internal MU or just internal USB – both are always disabled
* Smallest write block is 16KB. We add 1KB which blocks out 16KB.
* Recurses into Xbox directories to detect saved file

### TCR Test Case Module – STR 51

* Storage Device Change
* Very little to automate
* Provides visual feedback of what storage devices are enabled
* Allows enable/disable of internal and hard drives, prompts for external devices

### TCR Test Case Module – STR 118

* Parses PC folders for saved Xbox games
* Can’t use standalone save files without the profile they belong to
* Guessing at location of some save types. Profile location is sure.

Profiles: ProfileID – DashboardID – 00010000 – ProfileID

Saves: ProfileID – TitleID – 00000001 – anything.sav

Shared: 0000000000000000 – TitleID – 00000001 – anything.sav

Avatar: 0000000000000000 – DashboardID – 00020000 - TitleID

### TCR Test Case Module – VID 117

* Enormous matrix of possible video resolutions
* Several cable types. Seven are tested.
* Confusion between region(asia/us/europe) and mode(ntsc-m/pal)

## Trickiness

* Connected/Disconnected vs. Online/Offline
* Detection of reboot complete
  + Wait for Xbox to be responsive
  + Wait for xshell.xex to be running
  + Wait for bootanim.xex to not be running
* Xbox API Monitoring using Debug Breakpoints.
* Use of LaunchXContent.xex to launch XContent package-based titles.
  + (Only works if run from HDD, does not work if HDD is disabled.)
* Use of Simulated Input when API access is not available.

## Issues

* No reliable way to detect if the System Extended Partition is present on a drive.
* No reliably way to detect if the Xbox is a slimline (if INTUSB is disabled).
* Can only launch (via LaunchXContent.xex) package-based titled if HDD is enabled
* Some CTC seem unclear.
* Cannot be done via API, Simulated input was used
  + Enable/Disable Internal MU
  + Changing console region
  + Enable/Disable Multiplayer privileges
  + Enable/Disable Communications settings
  + Open Friend Presence screen
  + Wake Up from dim screen

## V2?

* Support for additional platforms (Windows Phone, PC, Xbox One)
  + TCRs/CTCs/FTCs from other platforms
  + Modules for other platforms
  + Device Pool for other platforms
* Additional Modules