

Unit Testing Framework / Image Flicker Debugging

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Textron Systems writes many programs that include thousands of lines of code. This code needs to be tested for consistency and functionality. In this case, a file comparison method would compare two files, which were generated by the NAPE (Non-linear Algorithms for Parameter Estimation or image reconstruction library), by doing a size comparison and then a byte-by-byte comparison. The framework was able to run the reconstruction program, output an avi file and then compare the file with another “master” avi, which should be identical. Frameworks are separate programs that are used by programmers to test-code. The key factors for the framework are the ability to do unit testing, simplicity, and popularity (number of people who are familiar with the system). Popularity is a factor because, if certain problems occur when running the framework, it is helpful to have an active community of people for support. Eventually we would like to use this framework to test many of the programs written at Textron Systems.

A problem with the graphical user interface for the Image Reconstruction program was a flicker that occurs when switching between pictures. A flicker is basically a flash of white when the picture changes to another picture. The problem was within the program, Wxwidgets, which was used to code the GUI (Graphical User Interface). Within the GUI there are events that are called when certain functions of the GUI are executed (Button clicks, resize, etc.). When the image was changing from one image to another there was an event called EVT_ERASE_BACKGROUND, which caused the flicker. By overloading the method to a blank function, which basically makes the function do nothing, the flicker problem was solved.