**Test Script for Background Color and Color Map Settings**

**Context:**

The added feature allows the user to set a preferred background color and the color map in the Preferences window. Additionally, we memorize the background color and the color map when switching views. This was not available in previous versions and the settings reverted back to the default values when the view was switched.

There are two distinct tabs for the settings

* Md Plotting Tab
* VSI Tab

In addition to the new feature, we migrated the setting for the initial view from the Mantid.Users properties file to the Preferences window.

The following sample data sets are required:

* SampleDataSet
* MDEvent\_Osiris
* MDHisto\_Osris
* MDHisto\_Merlin
* MDHisto\_Larmor

**VSI Tab:**The tab can be found in the main window under:
View > Preferences > MD Plotting > VSI

It can only be assured that a change takes effect when the VSI is restarted, similar to other settings in the Preferences window.

**Test instruction for background color:**

The data set here is: SampleDataSet

Functionality for background color:
A color button can be used to select the background color.

* **No Setting and switching views**
	1. Start Mantid and go to the VSI tab of the Preference window(MD Plotting). Make sure that the checkbox “Use the settings of the last VSI session” (from now on CB1) is disabled. Set the initial view to “Standard”. Make a note of the set background color.
	2. Load the sample data set into the VSI
		1. Confirm that background color corresponds to the background color of the Preference window.
	3. Open “View > View Settings” in the VSI. A “View Settings” screen appears
		1. Click on the “Choose Color” button. A “Select Color” screen appears.
		2. Select a color and press OK on the “Select Color” screen
		3. Press OK on the “View Settings” screen
		4. Confirm that the background of the view in the VSI has the color you have chosen.
	4. Switch the view to THREESLICE
		1. Confirm that the background color is still the same as you have chosen in the previous step.
	5. Change the color again (to something completely different) following the above recipe and make a note of the color.
	6. Switch to MULTISLICE
		1. Confirm that the background color is still the same as you have chosen in the previous step.
	7. Restart the VSI and load the sample data set into the VSI
		1. Confirm that the background color is the default color and not the color which was selected in step 5.
* **Setting the background color in the Preference window**
	1. Open the Preference window and manoeuvre to the VSI tab.
	2. Set the background color to a different color. Make sure that CB1 is disabled.
		1. Press OK
	3. Restart the VSI.
	4. Load the sample data set into the VSI
		1. Confirm that the color that was selected above is presented as the background
	5. Switch to the THREESLICE view
		1. Confirm that the background color remains the same
	6. Change the background color in the “View Settings” ( see above for instructions)
		1. Confirm that the background color has changed to your setting
	7. Switch to the STANDARD view
		1. Confirm that the background color which was selected in the previous step is being presented.
* **Setting the background color with the “Use last session” option enabled**
	1. Restart the VSI and load the sample data set into the VSI. Make sure that CB1 is disabled.
	2. Change the background color in the “View Settings” (see above for instructions).
		1. Make a note of the background color
	3. Restart the VSI
	4. Open the Preference window and manoeuvre to the VSI tab.
	5. Set the background color to a different color (and not the one you have set in step 2)
		1. Make a note of the setting of this background color.
	6. Enable CB1
	7. Restart the VSI
	8. Load the sample data set into the VSI
		1. Confirm that the background color is the color that was selected in step 2, i.e. the background color of the last session and not the background color that was selected in step 5, i.e. the background color of the Mantid view.

**Test instruction for color map:**

The data set here is: SampleDataSet

* **No setting**
	1. Restart the VSI and don’t change anything in VSI tab of the Preference window. Make sure that CB1 is disabled. Make sure that the initial view is “Standard”
		1. Confirm that the color map is the one set in the Preferences window.
* **Setting the color map in the Preference window**
	1. Close the VSI.
	2. Got to the VSI tab of the Preference window and select a different color map. Make sure that CB1 is **disabled.** Everything else should be set as in the previous section.
	3. Restart the VSI
	4. Load the sample data set into the VSI
		1. Confirm that the color map is the one you selected above.
	5. Switch to THREESLICE view
		1. Confirm that the color map has not changed.
	6. Change the color map using the “Color Preset” button.
		1. Confirm that the color map has changed.
	7. Switch to the STANDARD view
		1. Confirm that the color map is still the color map that was selected in step 6.
	8. Restart the VSI and load the sample data set into the VSI
		1. Confirm that the original color map is being loaded.
* **Setting the color map with the “Use last session” option enabled**
	1. Go to the VSI tab of the Preference window and select a different color map. Make sure that CB1 is **disabled.** Everything else should be set as in the previous section.
		1. Make a note of the color map.
	2. Restart the VSI
	3. Load the sample data set into the VSI and change the color map via the “Color Preset” button
		1. Confirm that the color map has changed.
		2. Make a note of the color map
	4. Got to the VSI tab of the Preference window and set CB1 to **enabled.**
	5. Restart the VSI
	6. Load the sample data set into the VSI
		1. Confirm that the color map is the one that was selected in step 3, i.e. the color map of the last session and not the color map of step 1, i.e. the color map which the user has set.

**General Tab:**

The tab can be found in the main window under:
View > Preferences > MD Plotting > General

It can only be assured that a change takes effect when the slice viewer and the VSI are restarted, similar to other settings in the Preferences window.

Note that settings in this tab affect the VSI and the Slice Viewer. The settings of this tab take precedence over settings on the VSI tab, e.g. if a common color map is enabled and selected, then this overwrites the setting for the VSI color map.

**Test instruction for color map:**

The data set here is: SampleDataSet

* **No Setting and GUI functionality**
	1. Restart Mantid and make sure that the checkbox “Use Common Color Map for Slice Viewer and VSI” (from now on CB2) on the General Tab is disabled. Make sure that CB1 is disabled.
		1. Confirm that the label and the selector widget on the General tab are **disabled** (i.e. greyed out)
		2. Confirm that everything on the VSI tab is **enabled** (i.e. nothing is greyed out)
	2. Enable the checkbox CB2 on the General tab
		1. Confirm that the label and the selector widget on the General tab are **enabled**
		2. Confirm that the selector widget for the color map and the according label on the VSI tab are **disabled**.
		3. Confirm that the selector widget for the background color and the according label are **enabled**.
	3. With the checkbox CB2 enabled, set the color map on the General tab to something different, e.g. “Beach”.
	4. Disable the checkbox CB2 on the General tab.
	5. Disable the checkbox CB1 on the VSI tab.
	6. On the VSI tab set the color map to “Cold to Warm”
	7. Press OK.
	8. Restart Mantid and load the sample data set into the VSI
		1. Confirm that the color map is “Cold to Warm” and not the color map that was selected in step 3.
	9. Close the VSI
	10. Load the sample data set into the Slice Viewer
		1. Confirm that the color map is not the color map that was selected in step 3. Note that by chance, it might be the color map which was selected in step 3. This can happen if the color map which was used in the last session of the Slice Viewer coincides with the color map that you selected in step 3. If this is the case go back to step 3, select a different color map and continue from step 3 with the instructions.
	11. Switch the color map in the slice viewer.
		1. Confirm that the color map has changed and make a note of it.
	12. Restart Mantid and load the sample data set into the Slice Viewer.
		1. Confirm that the color map is the one which was selected in the previous step.
	13. Close Mantid.
* **Setting a common color map**
	1. Start Mantid and make sure that the checkbox CB2 is disabled.
	2. On the VSI tab select a color map and make a note of it.
	3. On the General tab enable the checkbox CB2 and select a color map which is different to the one you selected in step 2. Make a note of this color map as well. Press OK.
	4. Restart Mantid and load the sample data set into the VSI
		1. Confirm that the general color map was selected, i.e. the color map of step 3 and not the color map of step 2.
	5. Change the color map using the “Color Preset” button (see above) and make a note of it.
		1. Confirm that the color map has changed
	6. Close the VSI and load the sample data set into the Slice Viewer
		1. Confirm that the general color map was selected, i.e. the color map of step 3.
	7. Switch the color map in the slice viewer.
		1. Confirm that the color map has changed and make a note of it.
	8. Restart Mantid and load the sample data set into the VSI
		1. Confirm that the general color map was selected, i.e. the color map of step 3 and not either color map of step 2 (VSI setting) or step 5 (after switching).
	9. Close the VSI and load the sample data set into the Slice Viewer
		1. Confirm that the general color map was selected i.e. the color map of step 3 and not the color map of step 7 (after switching).

**Initial View (testing the changes):**

Since we migrated the way we store the initial view settings from the Mantid.Users properties file to QSettings, we need to retest the initial view feature.

The initial view, i.e. STANDARD , MULTISLICE, THREESLICE, SPLATTERPLOT, depends on the user setting or if the user wishes on the technique with which the data of the workspace was measured.

For testing the initial view feature, we require workspaces with appropriate instrument IDs. Find attached the following workspaces with their view-mapping:

* MDHisto\_Merlin 🡪MULTISLICE
* MDEvent\_Osiris🡪SPLATTERPLOT
* MDHisto\_Osiris🡪STANDARD
* MDHisto\_Larmor🡪STANDARD
* **Testing technique-dependent initial views**
	1. Restart Mantid and on the VSI tab set the selector for the initial view to “Technique-dependent”.
	2. Restart the VSI and load the workspace MDHisto\_Merlin into the VSI
		1. Confirm that the workspace was loaded into the MULTISLICE view.
	3. Close the VSI.
	4. Load the workspace MDHisto\_OSIRIS into the VSI.
		1. Confirm that the workspace was loaded into the STANDARD view.
	5. Close the VSI.
	6. Load the workspace MDEvent\_OSIRIS into the VSI.
		1. Confirm that the workspace was loaded into the SPLATTERPLOT view.
	7. Close the VSI.
	8. Load the workspace MDHisto\_Larmor into the VSI
		1. Confirm that the workspace was loaded into the STANDARD view.
	9. Close the VSI.
* **Testing initial view with a fixed user setting**
	1. Restart Mantid and on the VSI tab set the selector for the initial view to “Standard”
	2. Restart Mantid and load the workspace MDHisto\_Merlin
		1. Confirm that the workspace was loaded into the STANDARD view and not into the MULTISLICE view as above.
	3. Delete the source in the VSI and load the workspace MDEvent\_OSIRIS into the VSI
		1. Confirm that the workspace was loaded into the STANDARD view and not into the SPLATTERPLOT view as above.
	4. On the VSI tab of the Preferences window set the selector for the initial view to “Multi Slice”
	5. Restart the VSI and load the workspace MDEVENT\_OSIRIS into the VSI
		1. Confirm that the workspace was loaded into the MULTISLICE view.
	6. On the VSI tab of the Preferences window set the selector for the initial view to “Splatter Plot”.
	7. Restart the VSI and load the workspace MDHisto\_Merlin into the VSI
		1. Confirm that the workspace was loaded into the STANDARD view.
		Note: Although we force a splatter plot, we default to standard since we are dealing with an MDHisto workspace.