

# JTLS-2021-15210 Imaging Of Chemical Or Nuclear Impacts

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## 1.0 Summary of Model Change Request (MCR)

It would be valuable to have an easy way to automatically display contaminations areas in the map when chemical and nuclear events occur in the game. This can be a type of switch in the Contamination filters to automatically show the areas of impact as they happen. This design investigates how to improve the Contamination filter panel in the Web Hosted Interface Program (WHIP) map window to allow their automatic display.

## 2.0 Design Summary

Currently in order to see chemical and nuclear impact sites, the user is required to turn-on the chemical and nuclear events from the Contamination filters by checking its corresponding check-box in the filter table. From the map alone, a user cannot tell whether such an event occurred without navigating to the Contamination filter to see if any exist. If one does exist, the user is then required to select it “on” to see it displayed on the map.

The design proposes a means to automatically show the impact zones of these events. This design also takes a broad look at the current filter set and propose a similar mechanism for other filters can also benefit from the capability.

## 3.0 Detailed Design

This design proposes adding an “Auto Display New” check-box to the map filters that can benefit from this new capability. A mock-up of the proposed contamination area filter panel is shown in [Figure 1](#). If the “Auto Display New” box is checked, when a new contamination area is sent to the WHIP, the WHIP will automatically and immediately display the contamination area. The design obviously seems straight forward, but there are several nuances that need to be considered. These include:

- Which filter panels will benefit from this capability
- How will the WHIP handle saving and recalling the user desired settings.
- What default color will be given to the areas being displayed
- What happens when a WHIP gets a new download.

Each of these detailed design issues are discussed below.

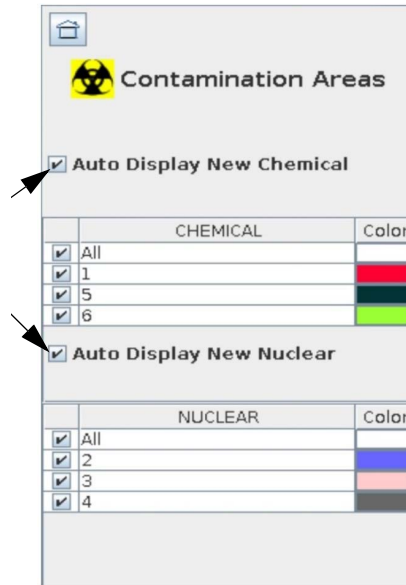


Figure 1. Sample Contamination Area Filter Panel

### 3.1 Filter Panels Receiving New Capability

In effort to provide a uniform and consistent user experience with the WHIP’s filters, [Table 1](#) lists the candidate filters that will benefit from adding the “Auto Display New” check-boxes in their respective filter panel. The table also includes the Design Team’s suggestion concerning whether the “Auto Display New” check-box should or should not be turned on by default the first time a WHIP starts.

Table 1. Proposed Auto Display WHIP Filters

FILTER	“ON” BY DEFAULT	DESCRIPTION
Areas	No	The Area Filter is used to define the display requirements for: <ul style="list-style-type: none"> <li>• Weather Fronts</li> <li>• Operations Areas (OPAREA)</li> <li>• Political Countries</li> <li>• Battle Damage Assessment (BDA) Areas</li> </ul> The Design Team felt that none of these areas were of operational importance that a default of Yes was warranted.

**Table 1. Proposed Auto Display WHIP Filters**

<b>FILTER</b>	<b>“ON” BY DEFAULT</b>	<b>DESCRIPTION</b>
Boundaries	Yes	The boundary filter panel is used for: <ul style="list-style-type: none"> <li>• Barriers</li> <li>• National Boundaries</li> </ul> Although seldom created during game play, the Design Team decided to include boundaries in the implementation list. The team is suggesting that the default be set to “Yes” since if they are created during game play there must be a significant operational reason to do so.
Directed Search Area (DSA)	No	The DSA filter panel is used to display both National and Tactical DSAs. The Design Team has decided to suggest that the default for this capability be set to No since only a limited number of WHIP players would be interested in this type of information.
Contamination	Yes	The entire purpose of this ECP is to add the capability to the Contamination filter panel. Both Chemical and Nuclear contaminations areas will have their default setting to “Yes” meaning that they will automatically be displayed as soon as the WHIP is notified of their existence.

### 3.2 Saving and Recalling Filters

Users can currently configure their map filters as desired and save these preferences. The WHIP user can then recall these saved preferences for quick and easy WHIP configuration. The filters are saved using the “Filter” and “View” options in the “Save” menu on the WHIP’s Map component menu. The settings of the “Auto Display New” check-boxes will be part of the save and recall mechanism that currently exists. This allows users to save, recall, and share the new check-box preferences.

The following is a summary of the work breakdown tasks for a WHIP user:

- When a WHIP is started, the “Auto Display New” check-boxes will be set to the defaults specified in [Table 1](#).
- WHIP Users can alter the default settings to meet their specific needs
- Users can save their filter preferences in a named Filter or named View

- The next time the WHIP is started, the User can recall the saved Filter or View by name. The new “Auto Display New” check-boxes will be restored to the desired settings.

### 3.3 Auto Displayed Area Default Color

Table 2 summarizes the current default colors for the type of filtered objects that are part of this design. The proposal is to not change this default color characteristic for any object. Instead once automatically displayed with the default color, the user can alter the desired color for any of the WHIP held objects for which color alteration is allowed. An object’s color information is saved as part of the Filter and View save capabilities described in Section 3.2.

The reader should note that the default colors described in Table 2 are the current default colors as delivered in Configuration Managed JTLS-GO. The default color scheme is not hard-coded in the WHIP; instead, the colors are managed in a delivered file called map.colors located within the \$JTLS\_HOME/game/data directory. End users are free to alter these default colors by simply editing the file. The WHIP will display the newly received objects using the default colors specified in the file not necessarily the colors specified in the table.

Finally while reviewing the map.color file for this design, several inconsistencies were noted which have accumulated over the years. The cells in Table 2 are color coded with the following meaning:

- Red - Inconsistencies that will be fixed along with this design.
- Yellow - Noted inconsistencies that are currently beyond the ECP’s available funding,
- Green - No issues noted by the Design Team

**Table 2. Default Area Colors**

FILTER PANEL	WHIP DISPLAYABLE OBJECT	COLOR FILE OUTLINE	COLOR FILE FILL	WHIP CHANGEABLE
Area Filter Panel	Weather Fronts	Gray	Light Gray	No
	Operations Areas	Light Blue, but not used	Not Specified, and would not be used.	No - Under Control of the Model.
	Political Countries	Light Blue	Not specified, but assumed to be the same color as the outline	No
	BDA Areas	Light Blue	Not specified, but assumed to be the same color as the outline	No

Table 2. Default Area Colors

FILTER PANEL	WHIP DISPLAYABLE OBJECT	COLOR FILE OUTLINE	COLOR FILE FILL	WHIP CHANGEABLE
Boundaries Filter Panel	Barriers	Fuchsia	N/A	No
	National Boundaries	Dark Red	N/A	No
DSA Filter Panel	National DSA	Not specified. Default hard-coded to Blue	Not specified. Default hard-coded to Blue	Yes
	Tactical DSA	Not specified. Default hard-coded to Blue	Not specified. Default hard-coded to Blue	Yes
Contamination Filter Panel	Chemical Contamination	Not specified. Default hard-coded to Black	Not specified. Default hard-coded to Black	Yes
	Nuclear Contamination	Not specified. Default hard-coded to Black	Not specified. Default hard-coded to Black	Yes

### 3.4 When Is Object Labeled As “New”

This design indicated when any of the objects specified in [Table 1](#) are received by the WHIP, the WHIP will access the new “Auto Display New” check-box to determine whether the new object should or should not be automatically displayed. The WHIP can receive “new” objects from the JTLS Extended Markup Language (XML) Server (JXSR) under the following circumstances:

1. **When the WHIP starts.** It will get a download of all current information. Any existing objects listed in [Table 1](#) will be a part of this download.
2. **When the WHIP reconnects to the JXSR.** There are numerous reasons that a WHIP will lose communication with the JXSR. These reasons include, losing network connect to the main server, the WHIP can have an exception fault, the JXSR could have an exception fault, the JTLS Object Data Authority (JODA) could have an exception fault, Technical Control can take down Apache while reconfiguring the web-services, or the Combat Events Program (CEP) could have an exception fault to simply name a few. When the connection is reestablished, the WHIP will get a new download. Any existing objects listed in [Table 1](#) will be a part of this download.
3. **When a new object is created during normal game execution.**

The third circumstance is the only time in which the automatic display rules should be executed. The Design Team felt it would be annoying and highly undesirable for all of the [Table 1](#) objects

checked for automatic display to appear when the WHIP starts or reappear after a JXSR reconnect. Thus the following rule will be implemented as part of this design:

The WHIP knows when it is getting a complete download. It is informed when a download starts and ends. During a download any display objects from [Table 1](#) that are received by the WHIP will refer to their current display settings and not the new “Auto Display New” check-box. After a download is complete, any new [Table 1](#) objects will obtain their initial display settings from the new “Auto Display New” check-box.

[Table 3](#) provides several examples and an explanation concerning whether the object will or will not be automatically displayed “Red” highlighted rows indicate the object will not be displayed; while “Green” highlighted rows indicate the object will be displayed.

**Table 3. Examples Of Display Rule**

RECEIVED DURING DOWNLOAD	AUTO DISPLAY NEW CHECKED	OBJECT DISPLAY CHECKED	RESULTS
YES	YES	NO	The “Auto Display New” is not accessed, the object will use its current object display flag. It will not be displayed.
YES	YES	YES	The “Auto Display New” is not accessed, the object will use its current object display flag. It will be displayed.
YES	NO	NO	The “Auto Display New” is not accessed, the object will use its current object display flag. It will not be displayed.
YES	NO	YES	The “Auto Display New” is not accessed, the object will use its current object display flag. It will be displayed.
NO	YES	N/A	The “Auto Display New” is active and will determine whether the object should or should not be displayed. The object will be displayed.
NO	NO	N/A	The “Auto Display New” is active and will determine whether the object should or should not be displayed. The object will not be displayed.

One last item of note concerning this rule. If there is an object, such as a contamination area, created during a period in which a user has the WHIP down, when the user restarts the WHIP, the user will not be notified of a problem. There is no way to determine whether a user missed the initial notification or not. The Design Team felt this was not much of a determinant because it is the same way in which important alerts are handled. If a WHIP is down, when it restarts it is not notified of missed alerts.

## 4.0 Data Changes

None

## 5.0 Order Changes

None

## 6.0 JODA Changes

None

## 7.0 Test Plan

### 7.1 Test Basic Capability

Purpose: To ensure the implemented basic automatic display capabilities works as summarized in [Table 3](#).

Step 1: Create new displayable objects according to [Table 4](#).

**Table 4. Test Table For Test 7.1**

TEST #	OBJECT TYPE	SETTING OF "AUTO DISPLAY NEW" CHECK-BOX	EXPECTED RESULTS
1	Weather Fronts	Checked	The weather front should automatically be displayed.
2	Operations Areas	Not Checked	The OPAREA should not be automatically displayed.
3	Political Countries	Checked	The political country should automatically be displayed.

**Table 4. Test Table For Test 7.1**

TEST #	OBJECT TYPE	SETTING OF “AUTO DISPLAY NEW” CHECK-BOX	EXPECTED RESULTS
4	BDA Areas	Not Checked	The BDA should not be automatically displayed.
5	Barriers	Checked	The barrier should automatically be displayed.
6	National Boundaries	Not Checked	The national boundary should not be automatically displayed.
7	National DSA	Checked	The National DSA should automatically be displayed.
8	Tactical DSA	Not Checked	The Tactical DSA should not be automatically displayed.
9	Chemical Contamination	Checked	The Chemical Contamination Area should automatically be displayed.
10	Nuclear Contamination	Not Checked	The Nuclear Contamination Area should not be automatically displayed.

Step 2: Create a saved View from the WHIP.

Step 3: For each of the Test numbers in Table 4 accomplish the alterations defined in Table 5

**Table 5. Alterations Test Table For Test 7.1**

TEST #	OBJECT TYPE	SPECIFIC OBJECT CHECK-BOX	EXPECTED RESULTS
1	Weather Fronts	NO	The weather front should not be displayed.
2	Operations Areas	YES	The OPAREA should be displayed
3	Political Countries	NO	The political country should not be displayed.
4	BDA Areas	YES	The BDA Area should be displayed
5	Barriers	NO	The Barrier should not be displayed.
6	National Boundaries	YES	The National Boundary should be displayed



**Table 5. Alterations Test Table For Test 7.1**

TEST #	OBJECT TYPE	SPECIFIC OBJECT CHECK-BOX	EXPECTED RESULTS
7	National DSA	NO	The National DSA should not be displayed.
8	Tactical DSA	YES	The Tactical DSA should be displayed
9	Chemical Contamination	NO	The Chemical Contamination Area should not be displayed.
10	Nuclear Contamination	YES	The Nuclear Contamination Area should be displayed

Step 4: Take the WHIP down and bring it back up.

**Expected Results:** The areas should and should not be displayed as specified in [Table 5](#).

Step 5: Recall the Saved View created as part of [Step 2](#).

Step 6: Re-Execute [Step 1](#).

**Expected Results:** The results should match the results described in [Table 4](#).

Step 7: Change the color of the objects for Test objects number 7 through 10.

**Expected Results:** The Tactical DSA and Nuclear Contamination Area should already be displayed and the object's color should change.

Step 8: Re-save the created View to include the color changes.

Step 9: Take the WHIP down and bring it back up.

Step 10: Recall the Saved View.

**Expected Results:** The WHIP's displayed objects and color should be identical to what was displayed when the WHIP was taken down.

Step 11: Display the Nuclear DSA and the Chemical Contamination Area.

**Expected Results:** These two objects should be displayed with the color selected as part of [Step 7](#).

Step 12: Create a group of displayable objects that are all created in a single WHIP update for each Object Type in [Table 4](#). This is accomplished by using the Order Group Editor to submit a group of orders that create multiple objects; one order group for each object type in the table.

**Expected Results:** Each group of created objects should match the results described in [Table 4](#).

Step 13: Create one of each object type listed in [Table 6](#). This step is designed to test that the defaults specified in [Table 1](#) are properly implemented.

**Table 6. Default Display Test Table**

TEST #	OBJECT TYPE	EXPECTED RESULTS
1	Weather Fronts	The weather front should not be displayed.
2	Operations Areas	The OPAREA should not be displayed.
3	Political Countries	The political country should not be displayed.
4	BDA Areas	The BDA Area should not be displayed
5	Barriers	The Barrier should be displayed.
6	National Boundaries	The National Boundary should be displayed
7	National DSA	The National DSA should not be displayed.
8	Tactical DSA	The Tactical DSA should not be displayed
9	Chemical Contamination	The Chemical Contamination Area should be displayed.
10	Nuclear Contamination	The Nuclear Contamination Area should be displayed

## 7.2 Test Default Object Colors

Purpose: The purpose of this test is to determine if some of the noted map.colors file inconsistencies have been addressed.

Step 1: Edit the map colors file for the following object attributes.

**Table 7. Altering map.color File**

TEST #	OBJECT TYPE	OUTLINE COLOR	FILL COLOR
1	Weather Fronts	TBD prior to test	TBD prior to test
2	Operations Areas	Should not be listed in the map.color file	Should not be listed in the map.color file
3	Political Countries	TBD prior to test	TBD prior to test
4	BDA Areas	TBD prior to test	TBD prior to test
5	Barriers	TBD prior to test	
6	National Boundaries	TBD prior to test	
7	National DSA	TBD prior to test	TBD prior to test
8	Tactical DSA	TBD prior to test	TBD prior to test
9	Chemical Contamination	TBD prior to test	TBD prior to test
10	Nuclear Contamination	TBD prior to test	TBD prior to test

Step 2: Setup a new scenario with the basic WHIPs.

Step 3: Bring up the game, the service, and start a WHIP

Step 4: Create new objects according to the instructions in [Table 8](#)

**Table 8. Test Table For Test 7.2**

TEST #	OBJECT TYPE	SETTING OF "AUTO DISPLAY NEW" CHECK-BOX	EXPECTED RESULTS
1	Weather Fronts	No Checked	The weather front should not be automatically displayed.
2	Operations Areas	Checked	The OPAREA should be automatically displayed. The color should be the color specified in the order. If not color was specified, the color should be "Black"

**Table 8. Test Table For Test 7.2**

TEST #	OBJECT TYPE	SETTING OF “AUTO DISPLAY NEW” CHECK-BOX	EXPECTED RESULTS
3	Political Countries	No Checked	The Political Country should not be automatically displayed.
4	BDA Areas	Checked	The BDA Area should be automatically displayed. The BDA Area should have an outline color and fill as specified in <a href="#">Table 7</a> .
5	Barriers	No Checked	The Barrier should not be automatically displayed.
6	National Boundaries	Checked	The National Boundary should be automatically displayed. The National Boundary should have a color as specified in <a href="#">Table 7</a> .
7	National DSA	No Checked	The National DSA should not be automatically displayed.
8	Tactical DSA	Checked	The Tactical DSA should be automatically displayed. The Tactical DSA should have an outline color and fill as specified in <a href="#">Table 7</a> .
9	Chemical Contamination	No Checked	The Chemical Contamination Area should not be automatically displayed.
10	Nuclear Contamination	Checked	The Nuclear Contamination Area should be automatically displayed. The Nuclear Contamination Area should have an outline color and fill as specified in <a href="#">Table 7</a> .

Step 5: For those objects that were not automatically displayed in [Step 4](#), turn them on.

**Expected Results:** The newly displayed objects should have an outline color and fill as specified in [Table 7](#).