



Altair

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**HyperWorks**

Altair HyperWorks Desktop 2019 Tutorials

HWD-0080: Flexible Reports

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# HWD-0080: Flexible Reports

In this tutorial you will learn how to:

- Create a report template
- Use Channel Mapping to reconcile mismatched channels

## Tools

The **Build Plots** panel can be accessed one of the following ways:

- Click the **Build Plots** icon, 

OR

- From the menu bar, select **Curves > Build Plots**.

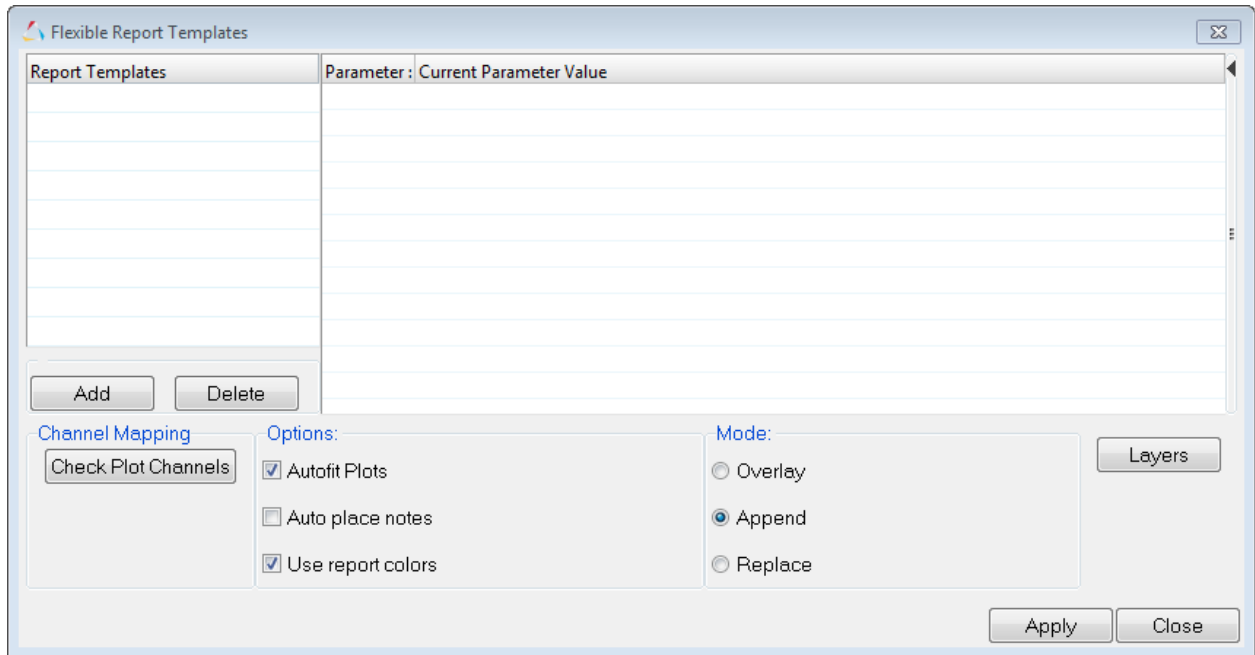
This panel allows you to construct multiple curves and plots from a single data file. Curves can be overlaid in a single window or each curve can be assigned to a new window.



The **Flexible Reports Templates** panel can be accessed one of the following ways:




- Click the **Open Report Panel** icon, , from the **Reports** toolbar.

The **Flexible Report Templates** panel allows you to add these predefined page sets to the current session. This replaces the **Reports** panel from earlier HyperWorks Desktop versions. The panel allows you to easily compare test and simulation data. In addition to the standard Report panel features, Channel Mapping is available, which allows you to reconcile mismatched channels (Type, Request and Component data). You can save the reconnected channels to a configuration file and use this file later. From the panel, you can directly edit parameter attributes for parameters created with the Parameter browser.



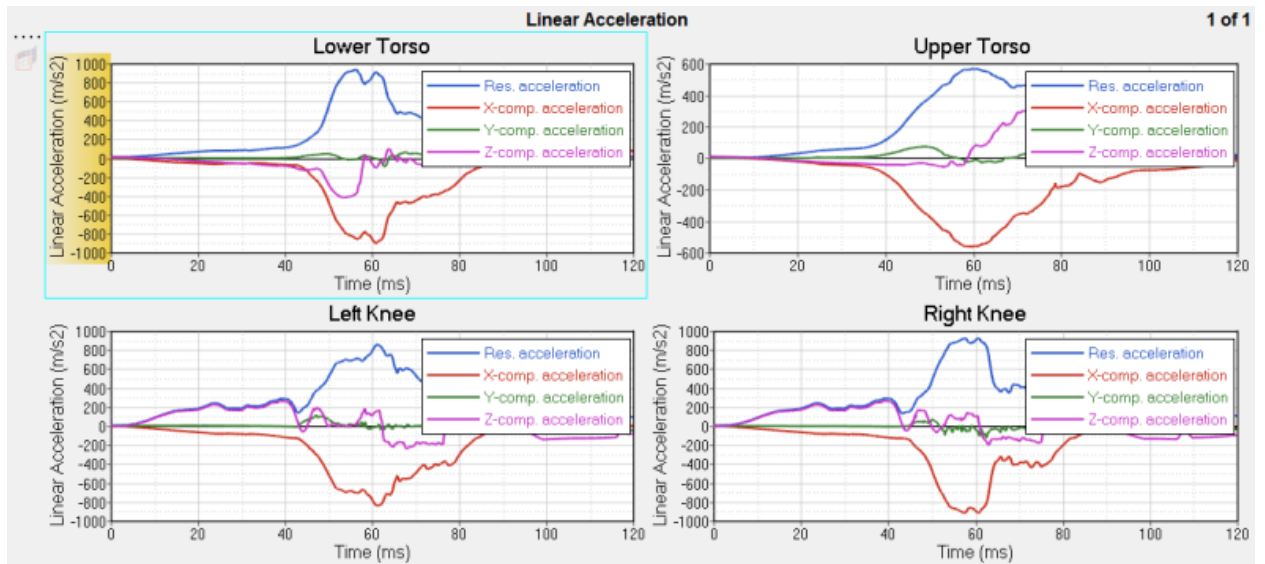
## Exercise: Create a Report Template and Use Channel Mapping to Resolve Conflicts

### Step 1: Open the data.lac file.


1. From **File** menu, select **New > Session** to clear all contents in the HyperGraph session.
2. Verify **XY Plot** is selected from the plot type menu, .
3. Click the **Build Plots** icon, .
4. Click the **Open File** button, , and open the file `../tutorials/mv_hv_hg/reports/Run1/data.lac`.

5. From the **Build Plots** panel, choose the following:

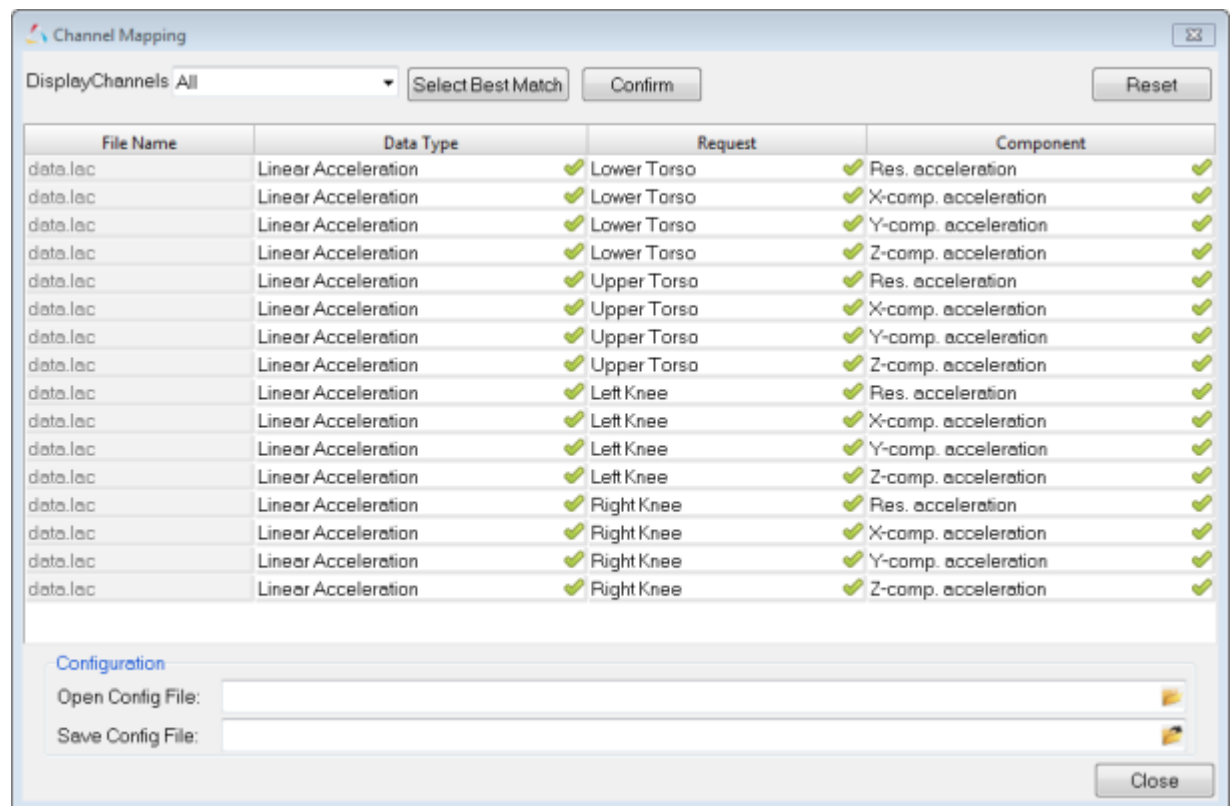
- For **Y Request**, select **Lower Torso, Upper Torso, Left Knee, and Right Knee**.
- For **Y Component**, select all options.
- From the **Layout** drop-down menu, select **One Plot Per Request** and select the four-window plot layout.
- Click **Apply**.



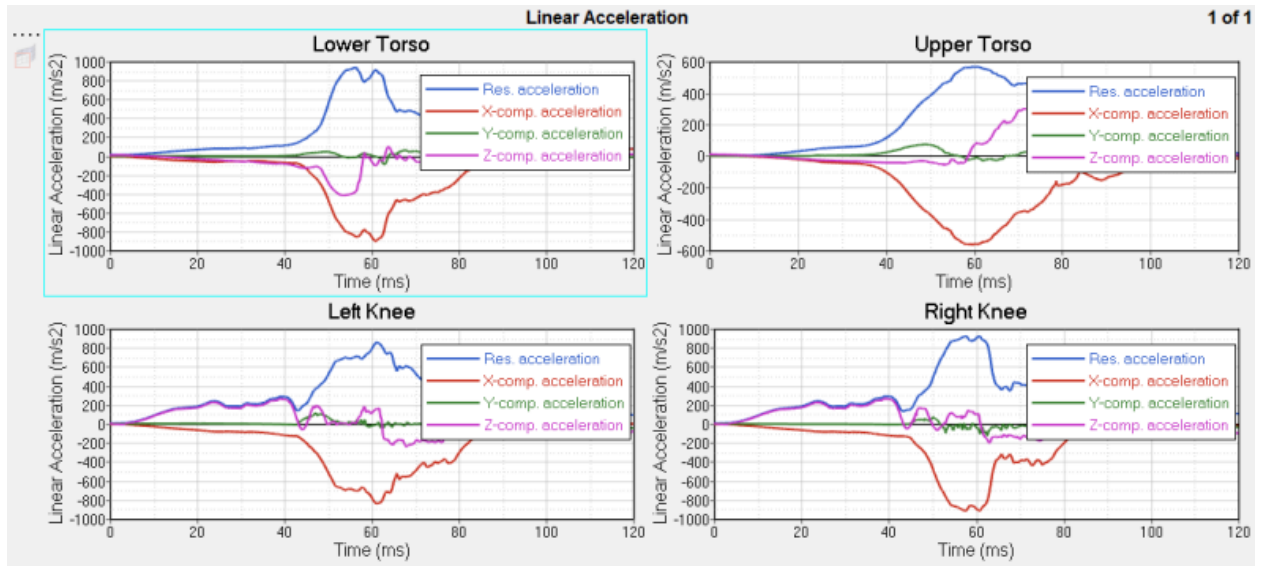
## Step 2: Create a report template and check the plot channels.

1. Click **File > Save As > Report Template**. Save the file as `crash_report` to your working directory.
2. Click **File > New > Session**.
3. Click **Yes** to discard all data.
4. From the **Reports** toolbar, click the **Open Reports Panel** icon, .
5. The report template you just created should be displayed in the **Report Templates** list.
6. Under **Channel Mapping**, click **Check Plot Channels**.



All of the channels are mapped. Click **Close**.



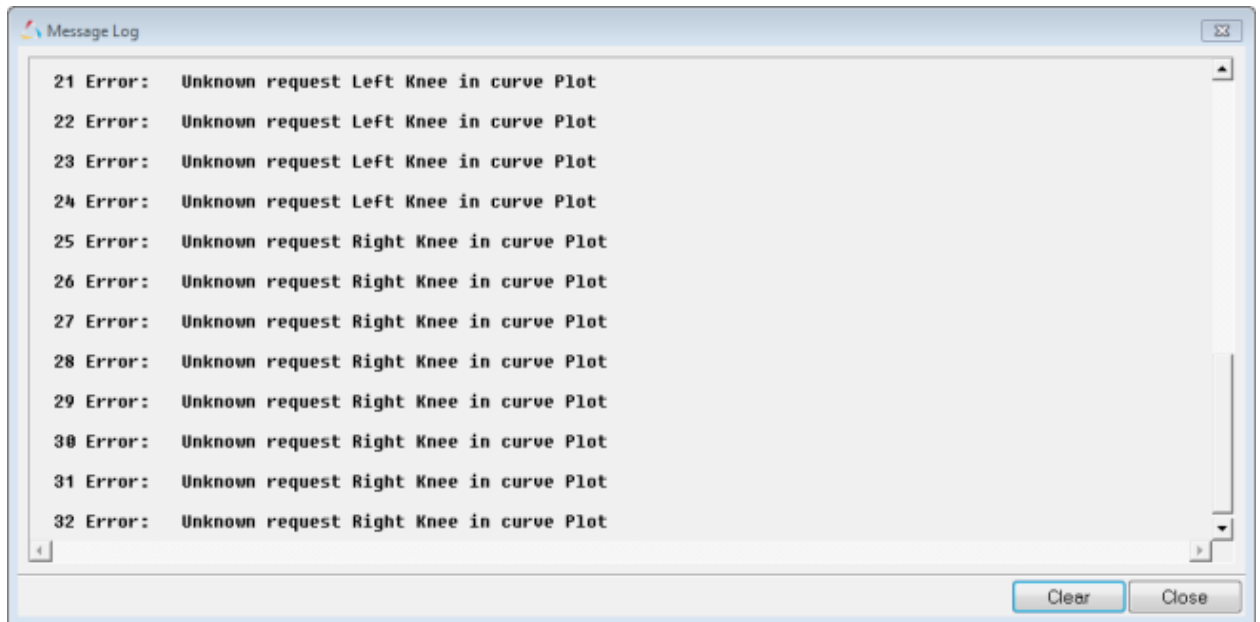
7. From the **Flexible Report Templates** panel, under **Mode**, select **Replace** and click **Apply**.



### Step 3: Load file with different test data.

1. From the **Reports** toolbar, click the **Open Reports Panel** icon, .
2. Under **Current Parameter Value**, click the **Open File** icon, , and open the file `../tutorials/mv_hv_hg/reports/Run2/data_different_request_labels.lac`.
3. Under **Mode**, select **Replace** and click **Apply**.

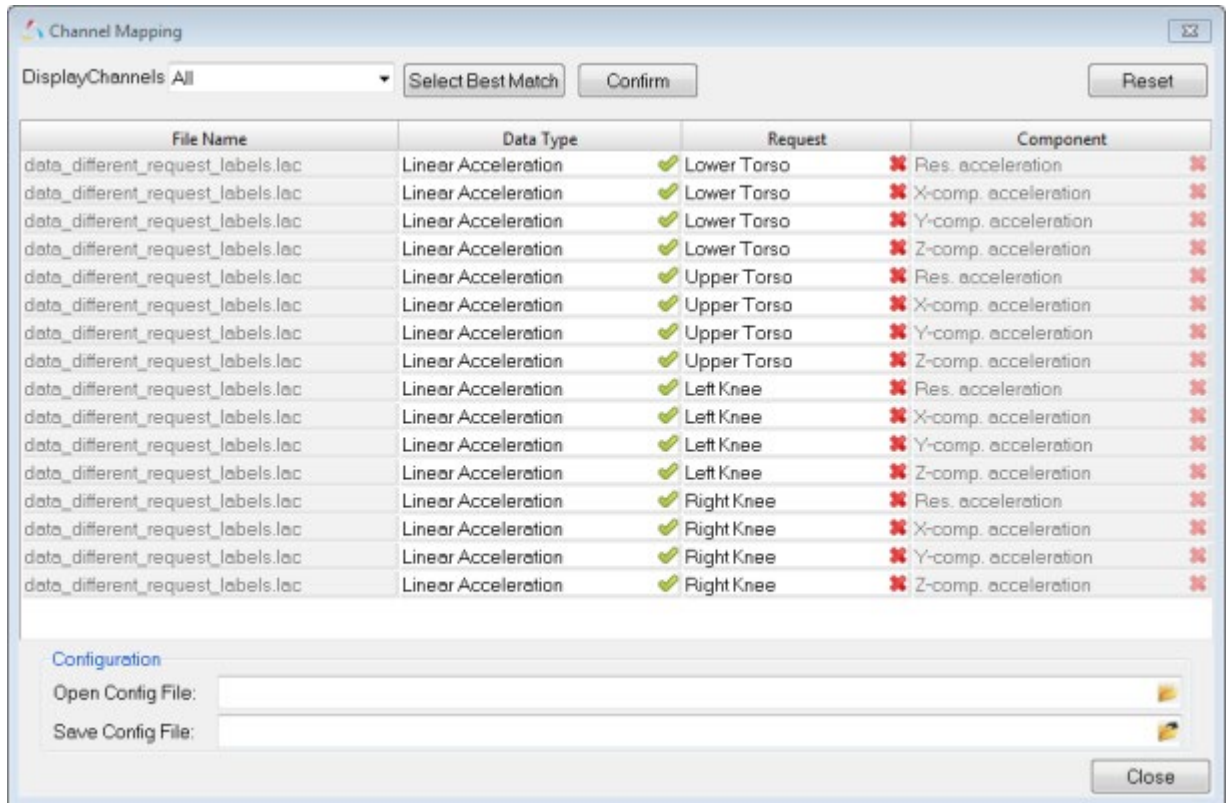
Several error messages are displayed.



4. Click **Close**.

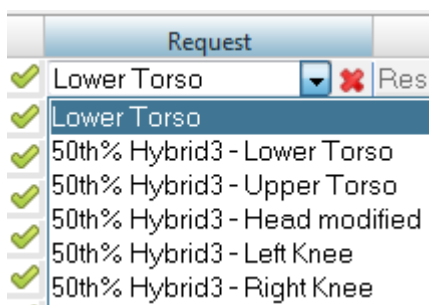
**Step 4: Reconcile mismatched channels manually.**

1. From the **Flexible Report Templates** panel, click **Check Plot Channels**.  
Notice that several channels are mismatched.



2. Click in the first cell under **Request** and click **Lower Torso**. A drop-down menu is displayed.

**Note** The drop-down menu is not sorted according to best match.



3. To manually connect all four Lower Torso channels, select **50th% Hybrid3 - Lower Torso** from the drop-down menu.



All four lower torso channels are now reconciled.

Request	
50th% Hybrid3 - Lower Torso	✓
50th% Hybrid3 - Lower Torso	✓
50th% Hybrid3 - Lower Torso	✓
50th% Hybrid3 - Lower Torso	✓

Leave the Channel Mapping dialog open.

### Step 5: Reconcile a selection of mismatched channels using the best match option.

1. To reconcile the left knee channels, click **Select Best Match**.

The best matches are inserted into the selected fields, according to the matching algorithm. The results are sorted using a string match to the shortest distance. The icon to the right of the field changes from this, ✖, to a yellow star, ★, upon selecting this option. The list is sorted according to the best match.

2. If you are satisfied with the results, click **Confirm**.

The icon displayed in the selected fields is updated from this, ★, to this, ✓.

3. You can also find the Select Best Match option from the context sensitive menu.
4. Select the any number of channels from the list, right-click and select **Select Best Match** from the context sensitive menu.

✓	50th% Hybrid3 - Lower Torso	★	Z-comp. ac
✓	50th% Hybrid3 - Upper Torso	★	Res. accele
✓	50th% Hybrid3 - Upper Torso	★	X-comp. ac
✓	50th% Hybrid3 - Upper Torso	★	Y-comp. ac
✓	50th% Hybrid3 - Upper Torso	★	Z-comp. ac
✓	Left Knee	✖	Res. accele
✓	Left Knee	✖	X-comp. ac
✓	Left Knee	✖	Y-comp. ac
✓	Left Knee	✖	Z-comp. ac
✓	Right Knee	✖	Res. accele
✓	Right Knee	✖	X-comp. ac
✓	Right Knee	✖	Y-comp. ac
✓	Right Knee	✖	Z-comp. ac

- If you are satisfied with the results, select **Confirm** from the context sensitive menu.
- To undo the match, select **Reset** from the menu.

**Note:** If the buttons at the top of the dialog are used, the actions are applied to all channels; if the context menu is used, the actions are only applied to the selected channels.

5. Click **Close** to return to the **Flexible Report Templates** panel.

## Step 6: Reconcile mismatched channels manually with the sorted list.

1. From the **Flexible Report Templates** panel, delete, then re-add the `crash_report.tpl` file and the `data_different_request_labels.lac` file.
2. Click **Check Plot Channels**.
3. Instead of using the drop-down menu to select a request, select right knee from the column to display the drop-down menu. The list is sorted according to the best match.



4. Select **50th% Hybrid3 - Right Knee** from the drop-down menu.  
All four right knee channels are now reconciled.
5. You can also find the Select Best Match option from the context sensitive menu.
6. Select the any number of channels from the list, right-click and select **Select Best Match** from the context sensitive menu.

✓	50th% Hybrid3 - Lower Torso	★	Z-comp. ac
✓	50th% Hybrid3 - Upper Torso	★	Res. accele
✓	50th% Hybrid3 - Upper Torso	★	X-comp. ac
✓	50th% Hybrid3 - Upper Torso	★	Y-comp. ac
✓	50th% Hybrid3 - Upper Torso	★	Z-comp. ac
✓	Left Knee	✗	Res. accele
✓	Left Knee		X-comp. ac
✓	Left Knee		Y-comp. ac
✓	Left Knee		Z-comp. ac
✓	Right Knee	✗	Res. accele
✓	Right Knee	✗	X-comp. ac
✓	Right Knee	✗	Y-comp. ac
✓	Right Knee	✗	Z-comp. ac

- If you are satisfied with the results, select **Confirm** from the context sensitive menu.
- To undo the match, select **Reset** from the menu.

**Note:** If the buttons at the top of the dialog are used, the actions are applied to all channels; if the context menu is used, the actions are only applied to the selected channels.