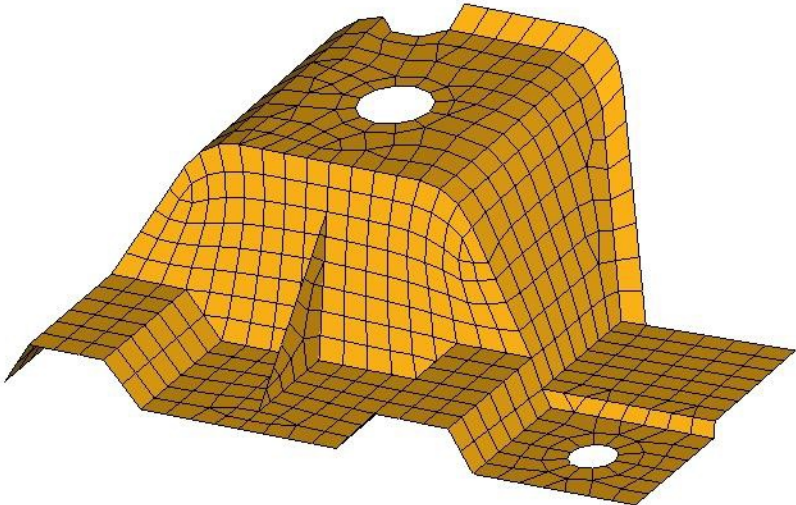# Exercise 5b - Imprinting and Extending a Mesh

In this exercise, you will modify an orphan mesh using the **Mesh Edit** panel.

This exercise uses the model file, `5b-mesh_imprint_extend.hm`.

Step 1: Retrieve and view the HyperMesh model file.

1. Set the user profile to OptiStruct.

2. Open the file `5b-mesh_imprint_extend.hm`
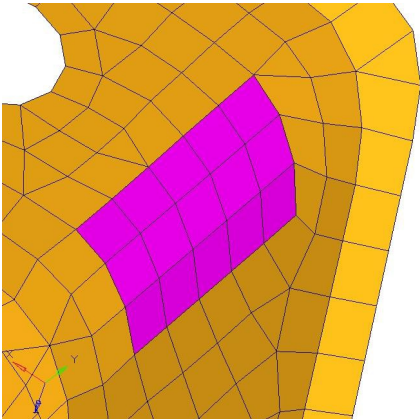
Step 2: Imprint Mesh to different destinations.

1. Open the **Model Browser** and select *IMPRINT* component, right click and select *Show*.

2. On the *2D* page, go to the *mesh edit* panel and select *imprint* subpanel.
   The **imprint** subpanel allows you to cause mesh from different, overlapping components to sync or line up with each other, in order to facilitate better connection modeling between them.

3. Select the *IMPRINT* component as **source**, select the *shells* component as **destination,** toggle *normal to destination*, and select *destination* for the **remain** option.
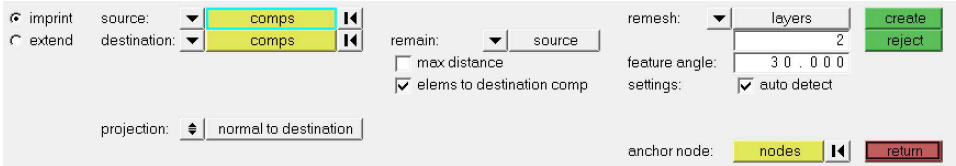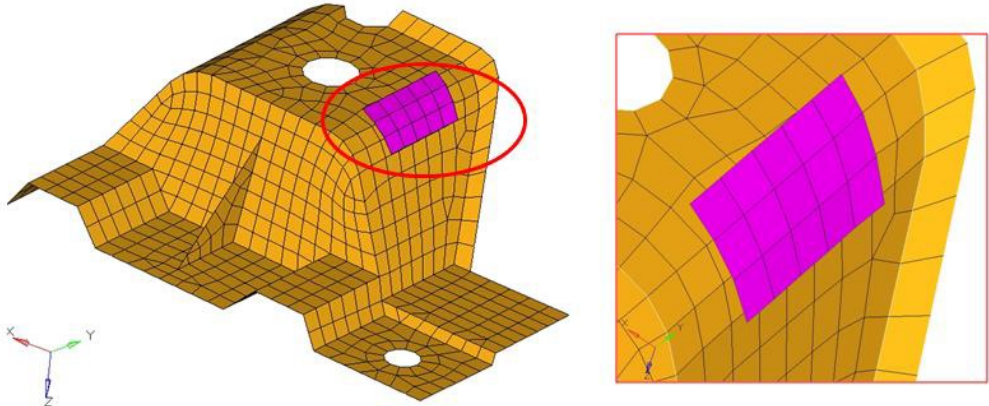
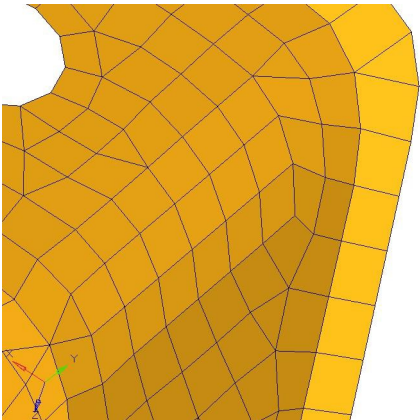Original: Violet elements are offset from yellow.

4. Click *create*.

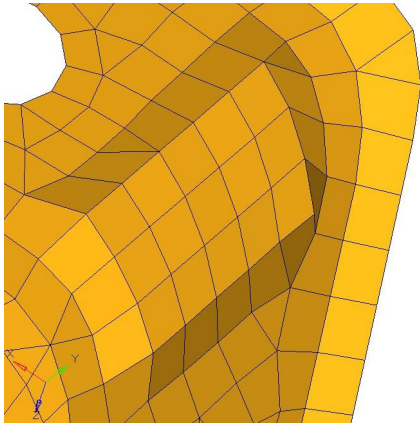Violet source elements are imprinted in destination (yellow).

5. Click *reject*.

6. Check the option *elems to destination comp*.

7. Click *create.*

Violet source elements are imprinted in destination (yellow), element organized into yellow component.

8. Click *reject.*

9. Select *source* for the remain option.

10. Click *create.*

Yellow destination elements are imprinted to Violet elements, element organized into yellow component.

11. Click *reject.*

12. Click *return* to exit the **Mesh Edit** panel.

Step 3: Extend Mesh to different destinations

1. In the **Model Browser**; select *IMPRINT* component, right click and select *Hide.*

2. Select the *EXTEND* component, right click and select *Show.*

3. On the *2D* page, go to the *mesh edit* panel and select *extend* subpanel.
   The **extend** subpanel allows you to create smoothly-meshed connections between different components that do not quite touch, but are meant to. Mesh can be imprinted such that both components are remeshed to match, or the source comp is remeshed to match the destination comp, or vice-versa. In addition, you can actually merge the elements of the source component into the destination component altogether.

4. Select *nodes* (see red rectangular area in the following picture) from the *EXTEND* component as **source**, select *shells* component as **destination** and select *along vector* for projection option. Select N1 and N2 as shown in the following picture, red circular area) to define direction.
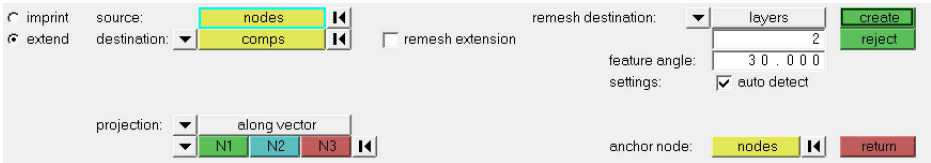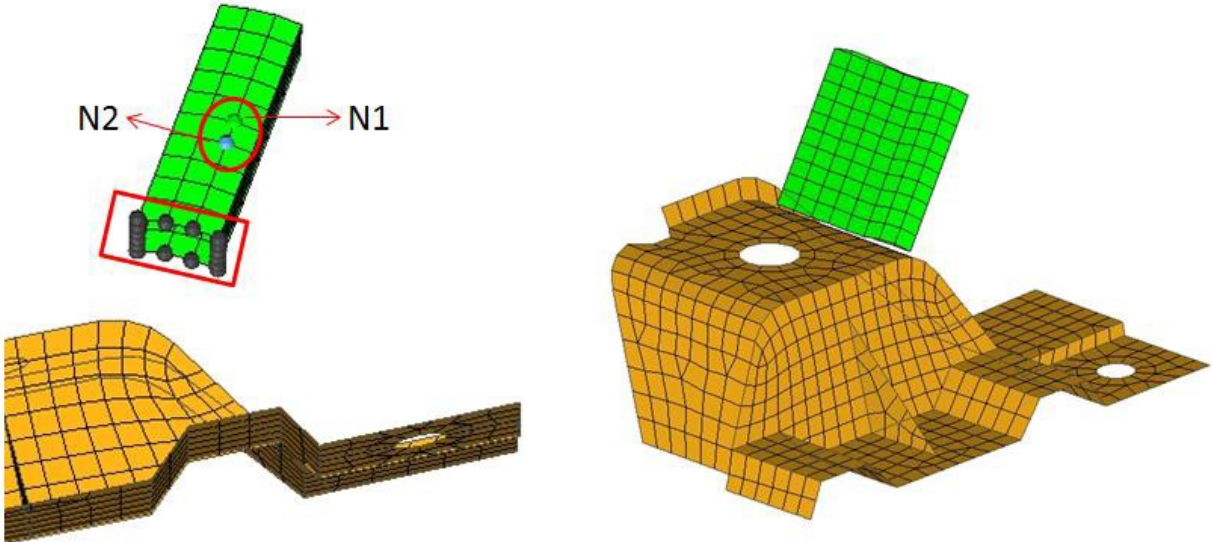
5. Click *create*.

6. The resulted mesh, as shown in the following picture, connects the 2 parts with just 1 element along the projection, because the *remesh extension* option is deactivated.
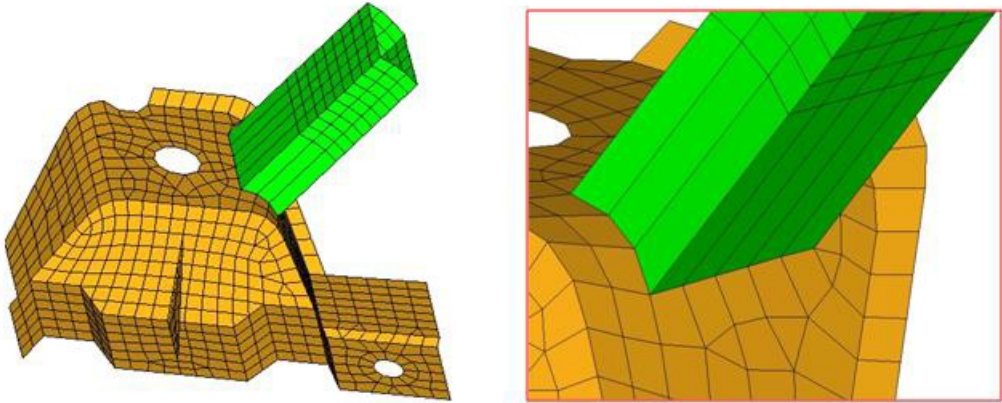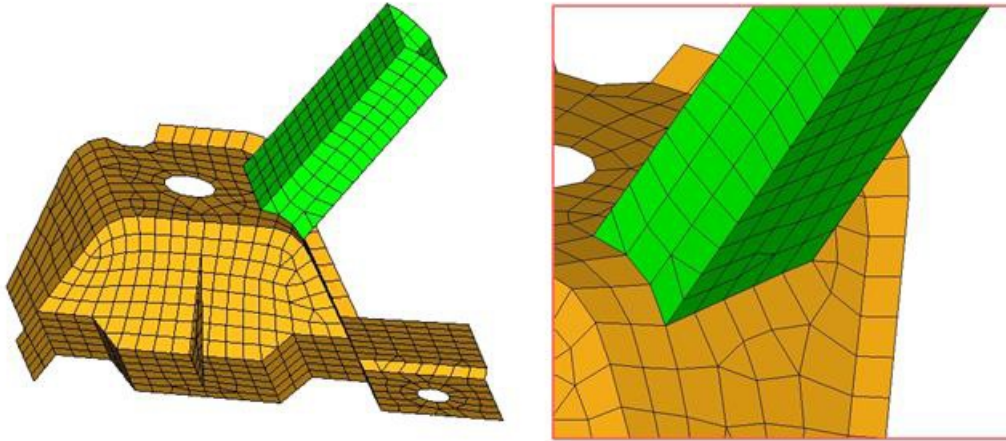

7. Click *reject*.

8. Check on the *remesh extension* option.

9. Click *create*.

10. The resulted mesh, as shown in the following picture, connects the 2 parts with remeshed elements along the projection, the *remesh extension* option is activated.

11. Click *reject*

12. Click *return* to exit the mesh edit panel

Step 4 (Optional): Save your work.

With this exercise completed, you can save the model if desired.