Using ThinkDesign Annotations

This task aims to introduce ThinkDesign's **Annotations** feature and explore its utility in real time design environment. For this purpose, we use the example of a Press tool as shown below, which produces Sheet Metal Stampings.

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1. Step 1: Initial Design Study

Note : 1. The Component names mentioned in the task match with the names of the .e3 files used in the example.

2.It is assumed that all the files mentioned in the Task are placed at a Central repository and all the characters mentioned in the Story access these files from a network.

Imagine this scenario:

The input for the tool design and manufacture comes from the marketing dept to the design and other departments in the form of an Email, which says:

We have received a project from a customer to design a new press tool for blanking and piercing a sheet metal strip of 1mm thickness. The product is a sheet metal washer and the volume for production is 300,000 parts/annum.

The mail has an image attachment of the Component as shown below.

The text reads: Email from marketing : We have received a project from a customer to design a new press tool for blanking and piercing a sheet metal strip of 1mm thickness. The product is a sheet metal "washer" and the volume for production is 300,000 parts/annum.

This mail reaches the Design manager (DM) and the senior designer (SrD).

The SrD studies the requirement. He feels that some components of a previously designed press tool can be used

for this purpose also.

The Bottom bolster, which supports the Die Block, is one such component.

Now you are the SrD.

In this task, you will send the required design information to the DM and also the Junior designer(JrD) using 4 different Annotations.

1.The Email text from the Marketing dept for the benefit of the JrD.

2.You make a Strip layout(strip_layout.bmp), a scanned image to define the sequence for the blanking and piercing operations.

3.A Word document describing the technical specs for the design to the JrD.

4.The image (Comp_dwg.jpg) of the Component drawing.

- **Open** file Bottom Bolster.e3 from the task installation folder. The model file resides in the files folder inside the task folder whereever it is downloaded
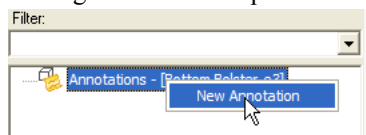
To add Annotation 1:

- Click the Annotations tab icon in the left bottom corner of the ThinkDesign graphic window.
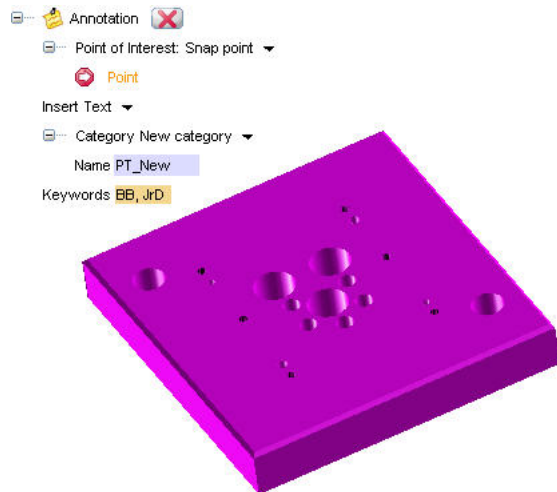
The Annotation tree panel shows up.
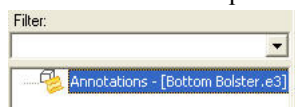
- Right click on this panel to add a **New Annotation**

In the selection list, set the following:

- Insert to Text

- Enter PT_New for the Category

- Enter BB, JrD for the Keywords

BB Stands for the Component name i.e Bottom Bolster.

JrD is the Junior Designer.

Note: The Key words BB and JrD are not displayed in the Annotation. However. They can be used to search for, find and display this annotation. See Search Filter in the online help for more details.

- To Select the Point of interest click on any one of the vertices of the model

You now need to insert the Email text to this annotation.

- Double Click on the Note pad icon in the left corner of the annotation being edited. The annotation expands into a larger Note pad window.

- Select the Email message text and Copy it. Ctrl+C

- Inside the note pad Annotation, Paste it. Ctrl+V

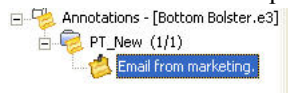The message gets pasted at the position of the cursor.

Alternately you could use the Context menu also to insert the text matter.

Hit OK.

- Right click on the new annotation and select Expand. The annotation will resemble the one depicted below.
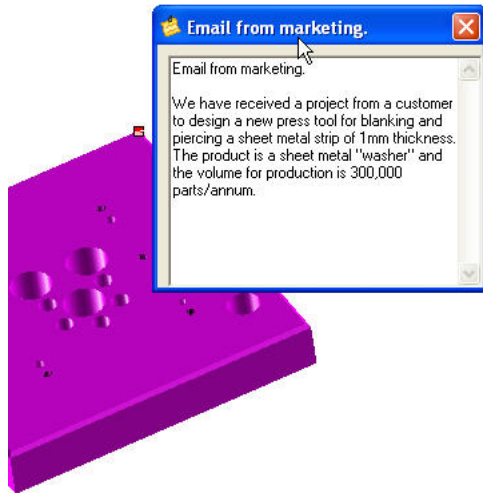
The Annotation shows up in the tree panel.

To add Annotation 2:

Now you attach the Strip layout, which is in the form of an image.

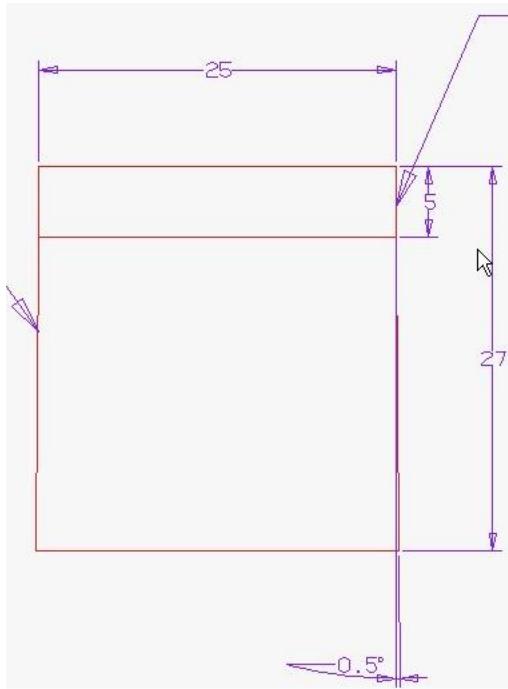• Right click on the Category node PT_New in the tree.

Select **New Annotation**.

PT stands for Press Tool.

In the selection list that shows up, set the following:

• Set Insert to Insert From File

• Browse to select the image file, strip_layout.bmp

• Enter PT_New for the Category

• Enter BB, SL for the Keywords

SL is Strip Layout.

- To Select the Point of interest, use **Mid Point Snap** and pick on any one of the edges of the model

- Hit OK

To add Annotation 3:

Along with these you also send the technical specs for the design to the JrD.

You will add another annotation in the form of a Word document for this purpose.

- Right click on the Category node PT_New.

- Select **New Annotation**

In the selection list that shows up, set the following:

- Set Insert to From File

- Browse to select the appropriate document file tech_details.doc

Note: This doc file contains all the technical specs on the design.

- Enter PT_New for the Category

- Enter BB, TD for the Keywords

TD is Tech details in short.

- To select the Point of interest click on any one of the vertices of the model.

- Hit OK

To add Annotation 4:

- Right click on the Category node PT_New.

- Select **New Annotation**

In the selection list that shows up, set the following:

- Set Insert to From File

- Browse to select the appropriate document file Comp_dwg.jpg

- Enter PT_New for the Category

- Enter BB,CD for the Keywords

- To select the Point of interest click on any one of the vertices of the model.

- Hit OK

At the end of this task, your graphic window can look like this.
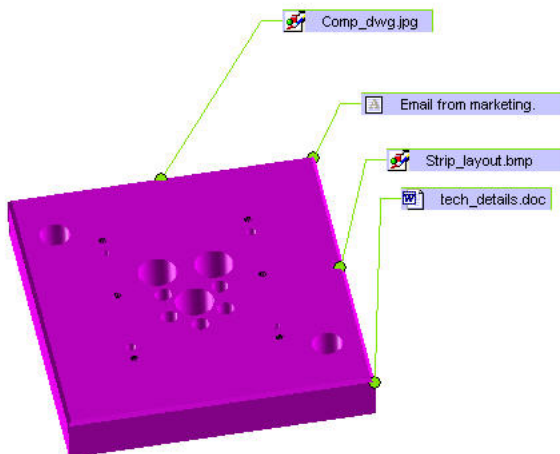
That's fantastic. You have added important non-geometric information regarding the design using Annotations so easily.

You save this file and send an Email to the DM and also the JRD. The Email has the details of the Annotations added and the File path for the file Bottom Bolster.e3.

2. Step 2: Design Specifications Check

The JrD receives the mail and first checks for the information that is given to him.

Now you are the JrD.

In this task, you design the components as per the design and add **Annotations** regarding materials to be used for manufacture.
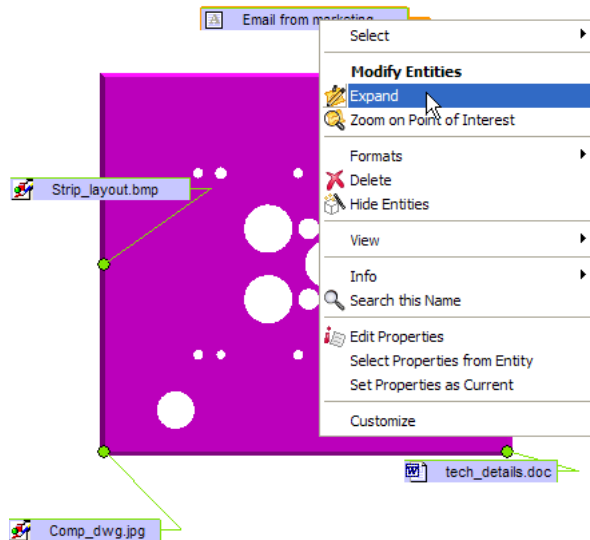
- **Open** file Bottom Bolster.e3

- Click the Annotations tab icon in the left bottom corner of the ThinkDesign graphic window.

You see 4 Annotations attached to the model.

To check the details of the first annotation,

- Right Click on the annotation and select Expand

You will see the details that the annotation contains.

Similarly you check the information given in the other Annotations.

3. Step 3: Design Process 1

The JrD designs and makes the assembly of the Components. He uses two sub assemblies to make up the complete assembly of the Press Tool.

Sub assembly no 1 (Bottom assembly.e3)

Sub assembly no 1 (Top assembly.e3)

In this task, you add annotations giving information on the materials of different components designed.

Important note: When adding annotations in assemblies, the new annotation will be added to the component or assembly level that is Set Current at the time of creation. These annotations will be visible on screen and in the Annotation tree only when the components or assembly, under which it is placed is Set Current.
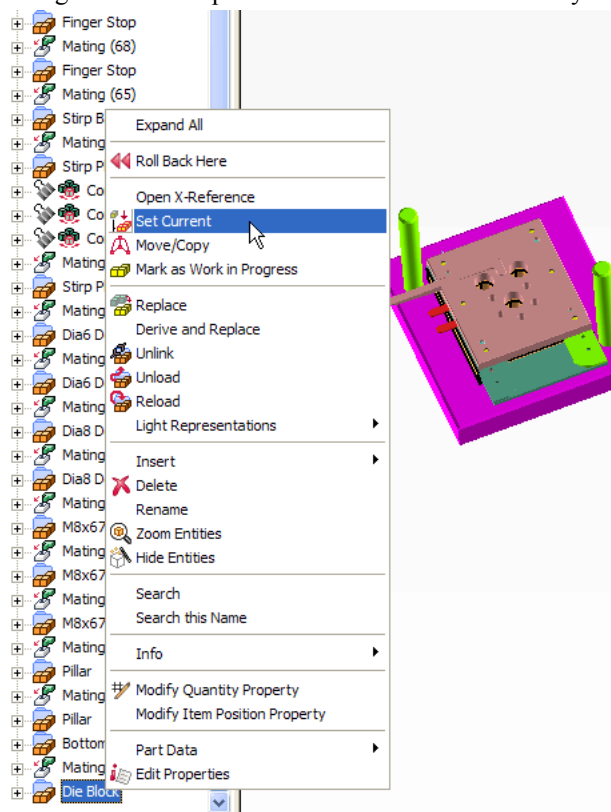
Browse to the Press Tool folder of your Web task installation.

To add Annotation 5:

You add Material information to the Die block component.

- **Open** file Bottom assembly .e3

- Right Click Component Die Block from the History tree and select **Set Current Component**.

The highlighted component is the Die Block.

- Click the Annotations tab icon in the left bottom corner of the ThinkDesign graphic window.

- Right click on this panel to add a **New Annotation**

In the selection list that shows up, set the following:

- Set Insert to Text

- Browse to select the appropriate document file Comp_dwg.jpg

- Enter PT_New for the Category

- Enter Mat_HT, JrD for the Keywords

Where Mat_HC is short form for High Carbon.

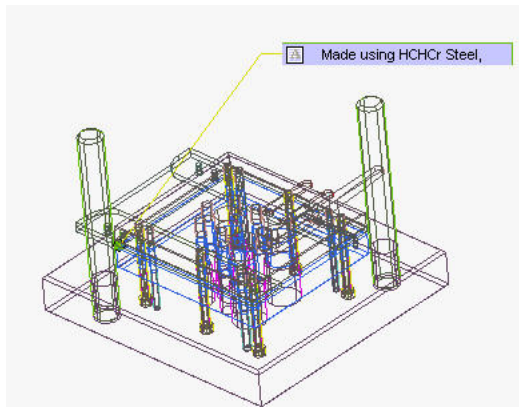- To Select the Point of interest click on any one of the vertices of the model.

Set model view to Wire frame to correctly snap on to a vertex.
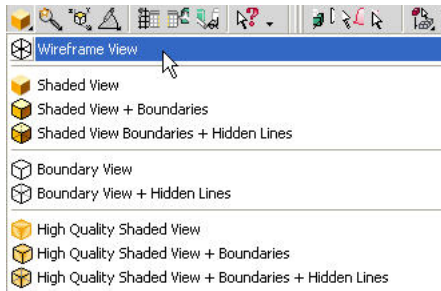
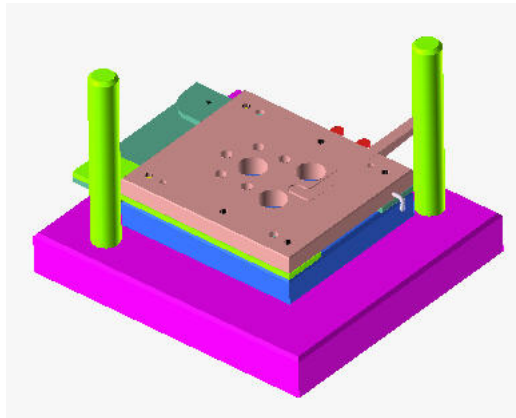Key in the information "Made using HCHCr Steel 58-60 HRC", in the window that pops up.

- Hit OK

Your screen can look like this.

- Double click anywhere in the ThinkDesign graphic window to exit the **Set Current Component** mode.

Your Screen can look like this once you bring it back to Shaded mode.

You see that the Annotation you added is not visible because it is not added in the Assembly mode but in the Component mode.

Add text annotations for other components in this subassembly viz

1.Automatic Stop 2.Finger Stop 3.Stripper 4.Strip plates.

Note : Set Current each of these components and check the Annotations attached to them.

Similarly Material specs annotations are added to the Components designed in second Sub assembly file, Top assembly.e3

- **Open** Top assembly.e3 from the Web task installation folder.
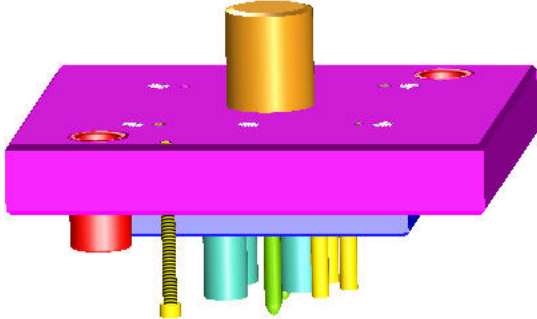
The components of interest are:

1.Punch plate 2.Strip back plate 3.Punch back plate 3.Piercing punch and 5.Blanking punch.

Note: Set Current each of these components and check the Annotations attached to them.

The JrD after completing the Final Assembly sends an Email to the SrD that it can be reviewed.

4. Step 4: Design Review

The SrD during the review of the Die Block notices that the Land and relief's are not given at the blanking holes. These are needed for easy ejection of the Blank (Final component i.e Washer) from the Material Strip.

In this task you will add 1 Annotation, showing the section of the Relief and create a Visual Bookmarks explaining the positions where they need to be incorporated.

Visual Bookmarks in ThinkDesign provide a fast and simple way to save and restore the visual appearance of a document and manage the feature activation status. For more information please check out ThinkDesign's on-line help.

To Add Annotation 6:

- **Open** Bottom Assembly.e3 from the installation folder of the Web task.

- Click on the Annotations tab at the bottom of the History Window.

- Right click on the Category node PT_New.

- Select **New Annotation**

In the selection list that shows up, set the following:

- Set Insert to From File

- Browse to select the appropriate image file, land_sec.jpg

- Enter PT_New for the Category

- Enter DB, LnD for the Keywords

DB is Die Block and Lnd is Land.

To select the Point of interest, Click and **Snap to Arc Center** to pick the center of one of the holes of the model.
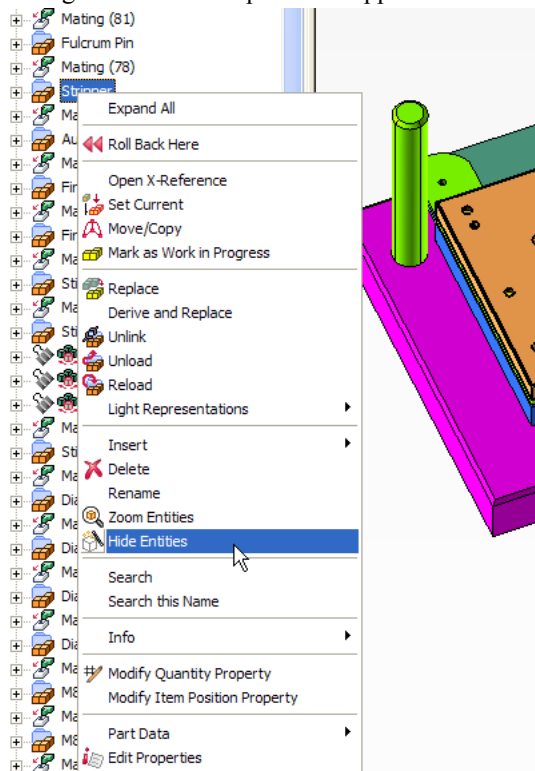
- Hit OK

Note : In this case, the annotation is created at the Top level of the Assembly and not inside the Die Block component.
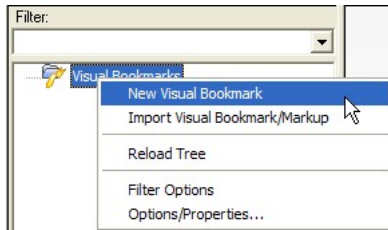
To Add Visual Bookmark.

We can see that the components Stripper and Automatic Stop are assembled over the Die Block. To have a clear visibility of the Die Block, we hide them.

- Right Click on component Stripper and select **Hide Entities**

Repeat this for Component Automatic Stop also.

- Click on Visual Bookmarks tab at the bottom of the History Window

- Right click on the Visual bookmark tree that shows up and select **New Visual Bookmark**

The Selection list comes up. Enter the following:

- Enter Reliefs for Name

- Enter PT_New for the Category

- Enter DB, Lnd for the Keywords

- Expand the Description Group, click + sign

In the text window that pops up, key in details of the Visual bookmark that you are creating. For ex: This Visual bookmark points to the holes where the reliefs must be incorporated in the Die block

- Expand the Capture Settings

- Check the View data and Hide/Unhide entities boxes

- Then expand the More Options by clicking on + sign

- Check Annotation View mode box.
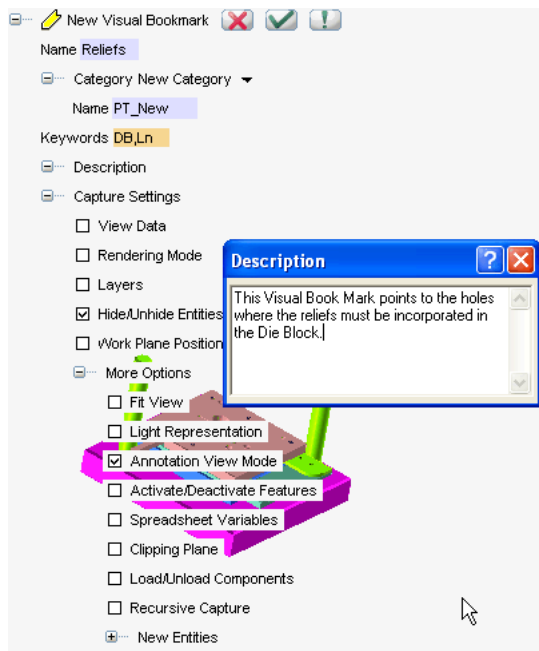
- Hit OK

- Unhide the two hidden Components and **Save** the file.

At the end of this task, your graphic window can look like below.
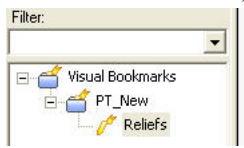
The SrD sends an Email to the JrD informing him about the Visual bookmark added and instructs him to make the design changes accordingly.

5. Step 5: Design Change

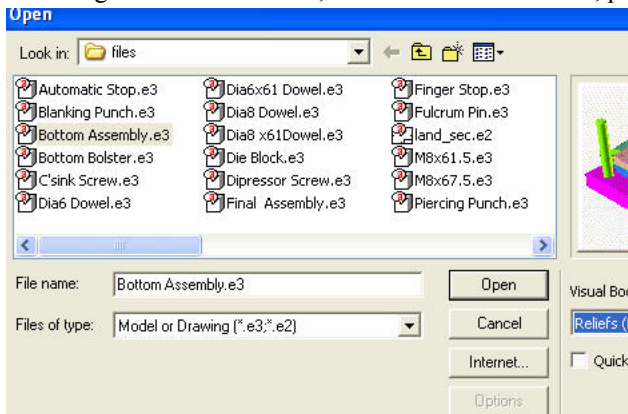The JrD receives the Email instructing him on the design changes.

Now you are the JrD.

Open ThinkDesign.

- Go to File **Open**

Check for the file Bottom Assembly.e3 in which the Visual bookmark is loaded.
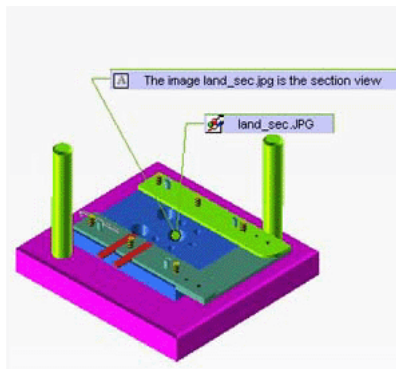
At the right corner of the box, under Visual Bookmark , pull down the menu and select, the bookmark Reliefs

- Click Open

The e3 file opens with the Visual bookmark capture settings active.

Observe that the Stripper and Automatic Stop are hidden. Note that the model view is exactly same as it was when the Visual bookmark was created.

This gives the JrD a quick view of the Annotations attached to the Die block holes.

It's incredible how Visual bookmark adds on to annotations and makes life easier for a designer by making communication of non-geometric metadata about a design very effective.

The JrD also adds annotations to the Final assembly labeling some of the parts.

Let's check them out.

- **Open** file Final Assembly.e3 from the task installation folder.

- Click on the Annotations tab.

In the Annotation tree, some annotations are available but not visible.

To see them clearly, right click on the top of the tree panel and select unhide.

All the annotations are seen and your screen looks like this.
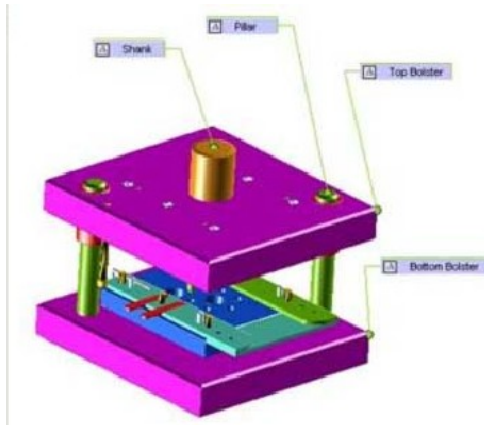
Congratulations !! and we hope you are now completely familiar on how to use Annotations to communicate non-geometric data.