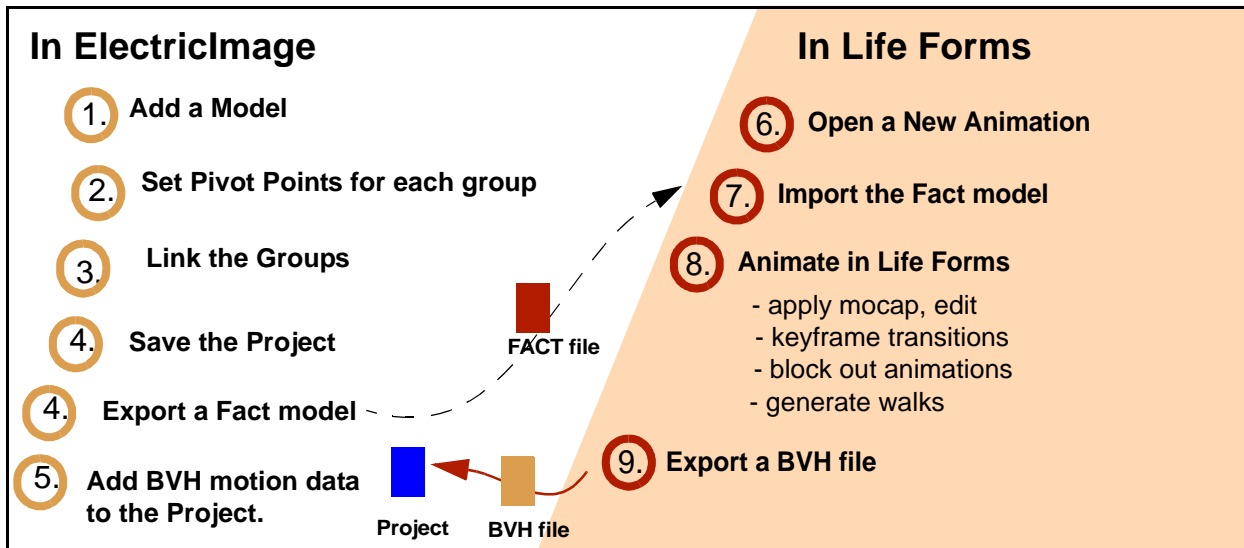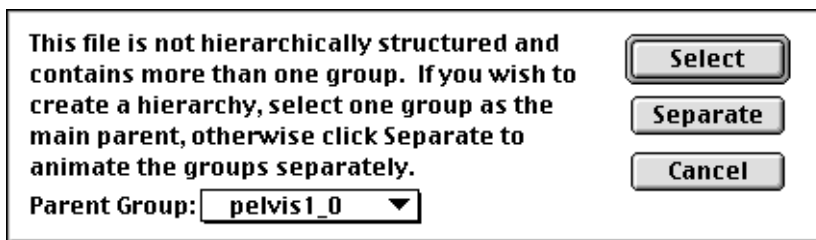ELECTRIC IMAGE
INCORPORATED

FACT-BVH Tutorial

The FACT-BVH method allows you to bring custom models from your ElectricImage project into Life Forms for animation. The motion data can then be exported and applied to the model in ElectricImage. The process is summarized by the following illustration.
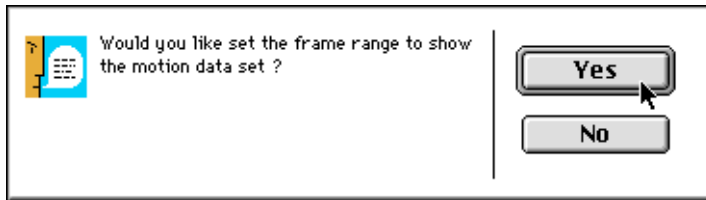
In ElectricImage

1. Add a Model
2. Set Pivot Points for each group
3. Link the Groups
4. Save the Project
4. Export a Fact model
5. Add BVH motion data to the Project.

FACT file

Project   BVH file

In Life Forms

6. Open a New Animation
7. Import the Fact model
8. Animate in Life Forms
   - apply mocap, edit
   - keyframe transitions
   - block out animations
   - generate walks
9. Export a BVH file

Part I: Setting up the model

1   In ElectricImage, open a new animation

2   Choose **File menu > Import > Model > Other**. A dialog box appears. Select **Sundancer.dxf**

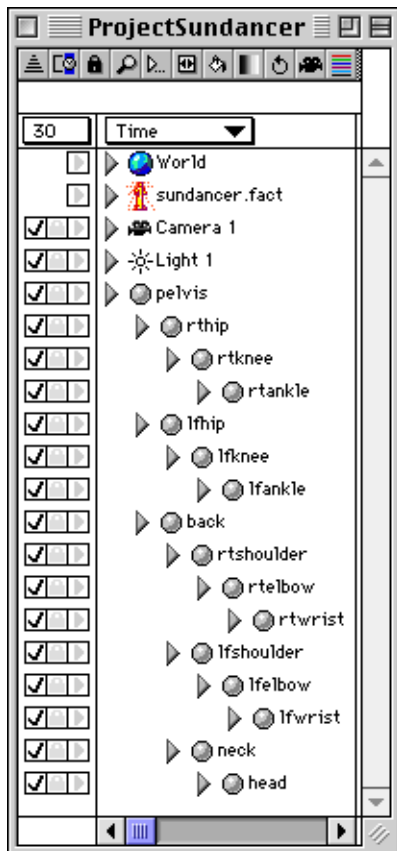3   The following dialog box will appear. Click select. This action makes the pelvis the root object for the model.

> This file is not hierarchically structured and contains more than one group. If you wish to create a hierarchy, select one group as the main parent, otherwise click Separate to animate the groups separately.
>
> Parent Group: pelvis1_0 ▾
>
> [Select] [Separate] [Cancel]

4   The following dialog box appears. Click **Done**. You will now see all Sundancer's groups assembled correctly in relation to each other in the Front view.
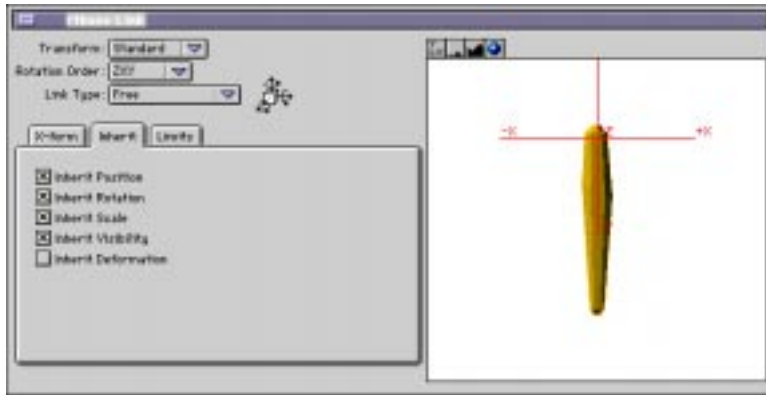

Note: If groups appear in a heap after they are imported, you must position each group to reassemble the model in ElectricImage. Then, zero out the position values by selecting all objects and choosing File menu > Export > Model > Fact snapshot. This creates a new model file. Delete the objects in the current project and import the new model.

5   The next step is to link the model. This is done in the Project window. First click on a child group, then click the Link to Parent tool and click on the parent group. Repeat until all the groups are linked as shown.

6 We must now make the groups rotate correctly in relation to their parents. This involves positioning the pivot point of each group. To do this, select a group and click on the Linkages Tool in the Tool menu to open the Group Link window.

Group Link window

7 Set the **Link type** to **free**.

8 Click the **Inherit tab**, and make sure that the **Inherit Position**, and **Inherit Rotation** checkboxes are checked.

9 In the Group window, drag the cross-hairs in the display to the correct position on the group. For example, the pivot point of the lower leg should be placed near the knee, i.e. it should be near the top of the lower leg object. Position the pivot point in at least two views. You can select a different view by clicking the View menu.

Note: Because the pelvis is the root joint, you do not have to adjust the pivot point of the pelvis.

Tip: You may find that the selected group is not displayed in the Group Link window. To make it appear you will have to resize the window.

10 Repeat steps 6 to 9 until the pivot points for all groups have been set. Test each group by rotating them.

11 Save the file. Complete setup is found in **Project_Sundancer_setup**.

12 We are now ready to export the model as a FACT file. Click on

13 Choose **File menu > Export > Model > FACT**.

14 The following dialog box appears. Click OK. See **ModelSundancer**.

> ⦿ **Selected with Children   (preserves Hierarchy)**
> ◯ **Selected only   (no Hierarchy)**
>
> [OK]
> [Cancel]

Part II: Import Model into Life Forms

After setting up the model for animation, we will import it into Life Forms. Life Forms allows you to animate models in many ways: keyframing, pasting premade keyframed motions and motion capture data, generating walks, and more. This is described in the user guide. Here we will show you how to import the model into Life Forms.

1 In Life Forms, open a new animation. Choose **File menu > New**.

2 Choose **Figure menu > Import Figure**. Select **ModelSundancer**. Click OK.

3 The model is very large.We must now scale it down to make it easier to animate. There will be an option to scale up the motion data when we are ready to export it to ElectricImage. To scale down the model, select the figure by clicking on it in the stage window. Then, choose **Figure menu > Height and Scale**. Scale the model to **1.7 meters**. See **Sundancer.lfa**.

Part III: Bringing Motion to ElectricImage

After animating in Life Forms, we must export the motion as a BVH file and apply it to the model in ElectricImage. Here's how it's done.

1 In Life Forms, open a finished animation that we created for the model. Choose *File menu > Open*. Select **Sundancer.lfa**.

2 Choose **File menu > Export**.

3 In the Export dialog box, select BVH in the Export Formats list.

4 Click the following checkboxes:

- **Scale to Original Size**
- **Use Left Hand Coordinate System**

5 If you are using EI 2.9, DO NOT click the Export in Meters checkbox. If you are using EI version 2.8 click this checkbox.

ELECTRIC IMAGE
INCORPORATED

6 Click OK. Name and save the file. Results to this point are given in **Sun-dancing.bvh**.

7 In ElectricImage, open the **Project_Sundancer_setup**. This file contains the model that we setup for animation in Part I.

8 Choose **File menu > Add > Motion > BVH**.

9 In the dialog box that appears, select **Sundancing.bvh**.

10 A second dialog box appears. Click OK.

11 When the last dialog box appears. Click Yes. The motion will now be applied to the matching groups. You can now play the animation. See **Project_Sundancer_Alive.**