

Creating a New Detector Description

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1. Create a new compact XML file.

- The full set of public compact files is contained in the LCDetectors cvs project.

```
cvs -d :pserver:anonymous@cvs.freehep.org:/cvs/lcd co LCDetectors
```

- Download a detector zip file and extract its compact file.

```
wget http://www.lcsim.org/detectors/sid01.zip; unzip sid01.zip -C compact.xml
```

2. Decide on a unique name for this detector which will be denoted as DETECTOR_NAME in these instructions. This name should NOT conflict with any of the names listed in <http://www.lcsim.org/detectors/taglist.txt>.

- Any time you see DETECTOR_NAME in these instructions, replace it with the actual name of your detector.

3. Create a directory called DETECTOR_NAME.

4. Copy the compact.xml file to the directory.

5. In the new compact file, change the name field to your new detector name.

```
<info name="DETECTOR_NAME" />
```

It is very important to change this value to your new, unique detector name. Otherwise, the detector conditions system will not recognize your new detector model.

6. Create a new file called **detector.properties** in the detector's directory, which should contain the following line.

```
name: DETECTOR_NAME
```

7. Make all the changes required to this compact description. Once you have a working compact description, it is advisable to *permanently freeze* this description and not make any more changes. If you want to change it later on, the best approach is to redo these instructions and create a new compact description and unique name.

8. Regenerate the LCDD file for your detector so events can be simulated.

```
GeomConverter/bin/GeomConverter -o lcdd compact.xml DETECTOR_NAME.lcdd
```

See [Converting to LCDD or HepRep using GeomConverter](#) for instructions.

9. Generate LCIO events with this LCDD file using slic. See [SLIC FAQ](#) for instructions.

10. Setup an alias to the new detector so JAS/lcsim can find it by adding this line to the `~/lcsim/alias.properties` file.

```
DETECTOR_NAME: file:///path/to/DETECTOR_NAME
```

11. Finally, load a test LCIO file into JAS3. You will need to restart JAS3 for new detectors to be recognized.