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.