Requirements for MANTID instrument view.

Display.

1. Ability to switch from x,y,z to flat x,y projection (possibility to unwrap in different coordinate systems,i.e. Cylinder, sphere)
2. Ability to over plot a second/third/fourth texture with variable transparency.
3. Ability when working in 2D mode, to have several panels to display alongside for example calculations and data or several data sets.
4. Display corrected PSD pixel positions.
5. In flat projection:
   1. Picking points on the screen and displaying geometric coordinates such as 2theta, phi.
   2. The ability to draw lines and display/calculate angles of intersections.
   3. Displaying text at chosen position. This could be use after indexing for example

Output.

We think that all of this could be done in flat projection mode only. There are no real needs to do that in 3D.

Essentially the user will want to select pixel areas such as rectangle, circle, and possibly multiple areas at once using the shift or ctrl button. Once this selections are performed the user wants to create:

1. A single group of selected spectra as a new workspace
2. The sum of a group of selected spectra as a new workspace
3. A map file of a group of selected spectra as a file, where the pixels selected are either valid or excluded.

Control.

1. Highlight current element in pick mode (for example changing its color or whatever attribute)
2. Slider control for x axis integration

Plotting

We need to be able to select a geometry object in the chain such a s tube or full module or panel from the selection of one pixel.

The user clicks on a pixel for example and get access to its tube or higher....

In general, it would be extremely efficient for future use to be able to call any Mantid algorithm on the subset of pixels selected, whether this is a single one, a tube, panel etc..... Some examples of this application will be:

1. Sub window with 1-d plot with selection of:
   1. 1-d plot of selected pixel
   2. 1-d plot of integral of selected tube
   3. 1-d plot of integral of selected group