Modular End Plate and PadLayouts

Current CVS head contains:

- Modular end plate
  - Individual pad planes for each module
  - Individual readout frequencies
  - Modules can be shifted and rotated wrt. each other
  - Documented in EUDET memo:
    http://www.eudet.org/e26/e28/e615/e842/eudet-memo-2008-31.pdf
- Layout for Micromegas pad plane
  All pads in all rows have the same angle

Not in CVS yet:

- Layout for GEM pad plane
  Current version at /afs/desy.de/user/k/killenb/ilcsoft/gear/modularTPC

Design of VersatileDiskRowLayout

GEM module

- Rows have different number of pads
- Rows have different pad widths
- Pads in alternating rows are staggered

VersatileDiskRowLayout

- The pad plane is made up of pad rows
- All pads within one row are the same
-
  - Number of Pads
  - Pad pitch
  - Row height

  - Pad height
  - Pad width
  - Angle the pads are rotated/shifted with respect to the other rows

  can be defined individually for each row

XML-Syntax

```
<module>
  <!-- 40 MHz readout electronics -->
  <readoutFrequency value="4.0e+07" />

  <!-- All spatial dimensions are in mm -->
  <PadRowLayout2D type="VersatileDiskRowLayout"
                  rMin="1418.64">

    <!-- nPad, rowHeight and padPitch are obligatory -->
    <!-- offset (staggering), padWidth, padHeight and repeat are
         optional -->

    <!-- row 0 -->
    <row nPad="176" padPitch="1.19" rowHeight="5.26"
         padWidth="1.09" padHeight="5.16" />

    <!-- row 1 -->
    <row nPad="176" padPitch="1.19" rowHeight="5.26"
         padWidth="1.09" padHeight="5.16"  offset="-0.595"/>
                  ⋮                ⋮
  </PadRowLayout2D>

</module>
```

Is this sufficient to describe everything anybody is planning?

What is missing?
What has to be improved?