Hi Elisabetta,

Felix discussed this with me a bit at the ALMA observing modes meeting last
eek. Before jumping into the coding I think it might be helpful to summarize
that disucssion see what you think about the overall approach.

What would be most useful for the pipeline is a Python method which takes
as input:

- the CASA image data product(s) computed by the pipeline
    - the science images will be continuum and cube images images either I or
      eventually I,Q,U,V
    - these images already contain a set of standard FITS keywords,
      e.g. FITS WCS keywords and beam sizes computed by the CASA imaging
      code. You don't want to overlap with these unless they have
      errors in which case CASA should fix them !
    - auxiliary images may include flux, primary beam, and masks. There
      are still some TBD details here
- the list of measurement sets that contributed to that image
    - these are the final calibrated and flagged measurements sets on
      disk after the pipeline run complets
- auxiliary data
    - this is a bit TBD but might include the image characteristics, e.g.
      image cellsize and the pipeline computes, project information etc
    - the pipeline holds quite a bit of meta in its context and
      could pass this along to you where this would be useful

and outputs a dictionary of the desired ALMA FITS keywords, values, and
comments

The pipeline will take this dictionary and write the keywords into
the CASA image headers, before the images are converted to FITS
format, in the pipeline exportdata step.

Felix tells me that you and your group are quite familiar with CASA.
I fo think the best approach is to do the work in Python using a combination
of existing tasks or tools. If you use tools be sure to create your own
instance of the tools, not the builtin in ones ... If some computation turns
out to be very inefficient in Python, we can look into putting it into
C++.

Does the overall approach sound reasonable to you?

Lindsey

> Dear Lindsey,
>
> I am a member of IT ARC that would like to contribute in the ALMA FITS
> keywords work.
> Felix told me that you offered to send us an example of the code. It would
> be very useful in order to understand what kind of expertises are needed
> and better define our contribution in this.