WP71 Comments for the XTD2 beam line review, Rooms 1-7

WP71 requests gave rise for this beamline review. The installation of the electron beamline must keep step with the installation of the undulator system. ‘Dirty’ installation work, must be finished by March 2015 or the ‘clean’ installation phase of the undulator system cannot start. This must have highest priority.

Only Rooms 1-7 were investigated. The other rooms are of no concern for WP71. Data collection, EDMS downloading, opening models etc. is very time consuming. The models are incomplete and are behind previous ones. This is a pity.

# Room 01

* There is the electron beamline with pillars and/or supports. Seems for me ok.

# Room 02

* In the first two cells are ready to receive undulators, but only intersections will be installed –no undulators. The first intersection right before the first installation space is missing. As agreed with W. Decking only a concrete pillar and the granite base plate will be installed. They are missing.
* For Information: The concrete pillar plus granite base plate are already purchased. The first pillar is already installed. The model is behind reality.
* The electron beam line is partially incomplete, components are missing
* The Schottwand seems ok.
* The alignment pipe starts somewhere not in phase with the room in the intersection between installation space #1 and #2. Remember they are left empty.
* Coordinated by J. Prenting the laser setup for the alignment system is planned by Zeuthen. Its transversal space is limited by the undulator for the seeding option. This needs coordination with WP71. In case of collisions there are alternatives: Either one extends the laser pipe so that the laser is before the start of the undulator, or one reverses the directionand put the laser at the end and the camera at the beginning.

The alignment laser should be ready for installation by the end of February 2015. I have doubts whether this is realistic. The installation is not possible with the vacuum chamber installed.

# Room 03-05

* Alignment pipe not in phase with the rooms. But start and end points for different rooms are matching. Nevertheless this makes individual comparisons in rooms difficult.
* The undulator vacuum chambers are missing, they were present in previous models
* There are two different colored concrete pillars: Blue ones in Room 04 and white ones in room 3. Does this have any meaning?

# Room 06

* In end of Room 06 there on the 37th installation space the 35th undulator installed (Remember #1 and #2 are empty). Seems to be ok.
* A full intersection with components, but without phase shifter is planned, but missing in the model. It is agreed with W. Decking. These intersection components are already purchased, the concrete pillar is already installed. Model is behind reality. Must be updated.
* Some “air supported” intersection components are shown over the missing intersection: BPM, Pumping unit, Quadrupole. They seem, however, to fit with the base plate
* COLLISION: There is a yellow column with a vacuum pump, which collides with the concrete pillar
* The electron beam line extend further into room 07
* The enclosure panels for the air condition (Schottwände) of this room extend to Room 07
* Schottwände, electron beamline and Vermessungsrohr do not follow Room limits.

# Room 07

* It contains the PKG. In the model there is no collision with the Vermessungsrohr.
* The electron beam line starts in the last quarter. There are several magnets without supports/pillars some meters downstream of the PKG.
* Electron beamline from Room06 fits.
* Enclosure panels for room 07 are found in room 06 model

# Summary

* The models are not complete, parts, which were included in previous ZM1 supported models are missing. Examples: Vacuum chambers with their supports, special intersections before and after the undulator systems…
* The room limits should apply to Vermessungsrohr, electron beamline and the enclosure panels.
* There are supports for the electron beam line missing, Room06/07

# Conclusion

Inside the SASE1 undulator system: It is already in construction. The models are behind reality. Installation can be continued. No new points were found.   
Outside the undulator system things are different. In the electron beam line before and after the undulator the already installed intersections are missing. There is a collision with the support of a vacuum pump downstream of the undulator system. There are unsupported magnets. There need to be solutions asap or the undulator installation must be stopped starting in March 2015. There is a severe risk of delay!  
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