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| **Name of Meeting**: XFEL Working Group for LINAC operations |   | **Date:** | 01.12.2011 |
|  |  |  | **Location:** | 362/30b |
|  |  |  |  |  |
| **Meeting Chair:** | **Participants** | **Distribution List:** |
| H. Schlarb | Kay Rehlich, Wolf-Dietrich Moeller, Matthias Clausen, Lutz Lilje, Julien Branlard, Holger Schlarb, Stephan Choroba, Michael Dressel, Tobias Schnautz, Richard Wagner, Bernd Petersen, Missing: none | Wolf-Dietrich Moeller, Bernd Petersen, Stefan Choroba,Holger Schlarb, Lutz Lilje, Kay Rehlich, Brunhilde Racky, Richard Wagner, Hans-Joerg Eckoldt, Markus Huening, Winfried Decking, Torsten Limberg |
| **Minutes taken by:** |
| H. Schlarb / J. Branlard |
| **Review by:** |
|  |
| **Status:** draft  |
|  |  |  |
| Topic: | 3rd Meeting of working group for XFEL linac operations |
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| Agenda: | Approval of last meeting minutesHigh level RF presentationDiscussion |
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| No | Action Item | Due | Responsible | Ref. |
| 1 | Review of minutes from last meeting, no objections |  |  |  |
|  | shift of Coupler/Interlock talk one week later  | 19.01.2012 |  |  |
|  | Additional info after question/discussions: - He pressure changes will be very slow such that the cavity piezo FB system will keep the detuning below the 20Hz expected from +-0.3mbar (specified) pressure instability - cryo load of individual RF station needs to be evaluated when installed in XTL - for this purpose, a characterization of the cryo-properties of the accelerator section is needed - it is not easily visible if a cavity has a much smaller Q0 if degradation occurs during the transition from AMTF to XTL. Currently it is assumed that the cavity properties (unloaded Q) remain the same. |  |  |  |

| **No** |  | **Keyword** | **Description** | **Responsible** | **Date** | **Status** |
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| 1 |  | HLRF presentation | Presentation about High Power RF System | Richard Wagner |  |  |
| 2 | I | Klystron test  | - It was noted that the waveguides are routed through a different path for the gun and for the first acceleration modules (I0)- all klystron will be tested in Hall 2: - these tests should include noise measurements:  🡪 series measurement starts April 2012 🡪 requires a LLRF system setup for measurements 🡪 action from the LLRF group is required |  |  |  |
| 3 | I |  | - open question: modulator test with 10kV load (before pulsed cables are connected to klystron)- open question: when does the module installation can really begin (date/infra-structure installation) | MKK |  | O |
| 4 | I | Klystron commissioning | - klystron can only be installed after the RF module string (4 modules) is completed and "Schiebemuffen" are closed- HF interlock in XTL will be installed for klystron commissioning- klystron will be switch to load operation for initial commissioning- klystron belongs to "Stoerstrahler", where the nearby window requires controlled area 🡪 cross-check installation works / XTL klystron commissioning required 🡪 work on cryostring should be completed to avoid space conflicts of installation equipment 🡪cabling (all) work should be completed before klystron commissioning (input from rack meetings)- requirements for klystron commissioning in XTL: 🡪 Ethernet/software/master oscillator/timing [LLRF system] 🡪 klystron commissioning is envisioned during later afternoon/night time (when other tasks are minimal) |  |  |  |
| 5 | I | XTL installation sequence | 1. Important: wireless LAN is mandatory at very early stage (Q1/2013) for vacuum group
2. Modules installation
3. Racks installation (all racks for 1 RF station in 1 block)
4. Cabling starts
5. Water installation (has to be installed after modules, to be confirmed) 🡪 open question to be clarified with MKK
6. Klystron + transformer \* connection of pulsed cables (remark: requires to remove concrete plates)

 \* klystron interlock \* klystron commissioning on load5. Waveguide connection to accelerator modules6. MPS Interlock tunnel (connection + commissioning)7. RF coupler processing can startRemark: vacuum + LLRF will not be available operable until racks are installed! |  |  |  |
| 6 | I |  | Open question: installation sequence can be done by RF section (4 modules) or by cryo string section (12 modules) 🡪 cabling can start after 4 modules are installed* Operations can start when the cryo string is completed
 |  |  | O |
| 7 |  | Commissioning of RF system | - Commissioning of RF systems is done when attached to accelerator modules:- personnel interlock for tunnel needs to be ready- start with warm coupler processing 🡪 expected duration of coupler processing is likely to be very short (few days) 🡪 most of the time is required for system checks (cables, interlock, electronics) 🡪 this time should be used also to commission LLRF cables and signals (60% of signals, likely cavity probes also)- cool down of accelerator module |  |  |  |
| 8 | R |  |  |  |  |  |
| 9 | I | RF operations | RF operations: \* waveguide increase temperature up to 60deg with corresponding phase shift \* not too large rise times of pre-amplifier drive signals causing klystron interlocks \* slow ramping of RF after klystron trip |  |  |  |
| 10 | A |  | To do:- installation of a uTCA LLRF station in the klystron test stand- combine with klystron life time management effort | J. Branlard, V. Ayvazyan, W. Wierba | April 2012 | O |
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