**QUESTIONS FROM CHAT
1st DECEMBER (from 04:10 pm to 07:00 pm, Italy time)**

[16:38] John Rathke: Is water soak testing included for incomining inspection?

[16:39] Thomas A. Digrazia: Do any of these vendor have the capability to perform this "flat-bed" scan as an alternative to a visual inspection?

[16:45] Genfa Wu: Tom: the flat sheet eddy current scan (ECS) is only available at DESY now. Fermilab has an ECS system. It has not been used for some time now.

[16:45] Leonardo Ristori : For SRF cavities for the LHC we are UT scanning all niobium sheets by immersion to identify any discontinuity. Ningxia is able to do this.

[16:46] vks RRCAT: How severe a sub-surface defect towards RF side is?

[16:46] Leonardo Ristori: Our largest sheets are 600x1200 mm

[16:47] Manish RRCAT: ATI also would like to UT scaning. ATI do not have eddy current facility.

[16:54] Cristian Boffo: Question on the scans shown: are all the identified defects are rather clear and well visible. Is it always the case?

[16:57] Aniruddha (RRCAT): What type of impurities were common in defect areas of rejected sheets.

[16:58] Grigory V. Eremeev: How many of ESS sheets passed the visual inspection out of 21 that failed ECS?

[17:03] Detlef Reschke: No. I cannot add anything to Laura.

[17:05] Thomas A. Digrazia: For the XFEL sheets, it's interesting that Vendor A had a substantially lower rejection rate compared to the other 2 vendors. Any investigation performed to understand how they are able to achieve such high quality?

[17:10] Wheelhouse, Alan (STFC,DL,AST): Grigory: For the ESS high-beta sheets the 21 sheets that failed eddy current scanning had all passed the visual inspection at OTIC Ningxia. Thus if delivered would have ended up in a cavity with the potential of not meeting specification

[17:13] Ellis, Mike (STFC,DL,AST): is the shape profile tolerance (0.2mm/0.4mm) just effect of manufacturing, or proportional to wavelength?

[17:42] Wheelhouse, Alan (STFC,DL,AST): Hi John: Regarding water soaking inspection, for the ESS high beta cavity it was considered, but the preference was taken to perform eddy current scanning as it was thought to provide better opportunities for identifying defects.

[17:58] Manish RRCAT: Laura, How you control weld length & RF frequancy of dumbbell & End group ? only by trimming or tuning also ????

[18:02] Prakash Potukuchi: One way to avoid the 355 degree spark is to do two sealpasses, instead of one. The first sealpass at a slightly lower current (than the one that you are currently doing) followed by a second sealpass at a higher current and then follow it up with the weldpass.

[18:18] Grigory V. Eremeev: For EBW do people limit exposure to air after BCP and before welding, i.e., N2 filled bags, same day welding etc

[18:25] Leonardo Ristori: Grigory: YES absolutely. There is a time window of exposure to air.

[18:27] Leonardo Ristori: 8h is commonly used as upper limit.

[18:34] John Rathke: I think the 8h rule was an early goal at DESY that became an iron-clad rule over the course of time. We welded cavities (>25 MV/m in testing) after as much as a week of air exposure. That being said shorter is better.

[18:37] Leonardo Ristori: Laura: those grooves are made by hydrogen bubbles during bulk BCP. They can be avoided playing with flow, or better, with rotational BCP.

[18:39] Leonardo Ristori: We observed the same when we were doing static bulk BCP on spoke resonators.

[18:39] Leonardo Ristori: Also for my experience, there was no correlation with performance. This could be due to the fact that these grooves have smooth profile.

[18:47] Laura Monaco: Yes, agree with you. It was quite impressive look inside and find such a large number of rows...and pits! But up to now no correlation with performances

[18:57] Manish RRCAT: We may have to think about Niobium blank size. RRCAT using 505 mm dia x 4mm blank,STFC using 559 mmx 4mm thick,FNAL using 559x559x4.1 thick result differance in weight which ultimately result cost !!!!

[19:01] Kane: Why formed half cells are not stress relieved (annealed) before welding?