Intra-Task Collaborations?

- Simulation
  - High Gradient (cavity and klystron) and SRF HOM
  - SRF Thin Films, RF photo-cathodes
- Material Preparation & Analysis
  - SRF Thin Films and RF Photo-cathodes
    - Sample deposition and analysis exchange:
      - Plug configuration differences, possibly provide online database for systems used including drawings.
- RF Breakdown
  - High Gradient (cavity), RF photo-cathodes and SRF Thin Films
    - Analysis, sample exchange and breakdown studies
- HOM Management
  - High Gradient (cavity) and SRF HOM optimisation, electronics development?
- Experimental Evaluation
  - High Gradient (WFM) and SRF HOM analysis and optimisation

- Collaborative efforts may enhance the efficiency or outcome of some planned activities. However it is clear that it is not always feasible, due to the limited man power and existing commitments.
- Even when not feasible at this time, collaborative efforts could facilitate the foundation for future, longer term benefits, beyond EuCARD-2.

WP12 Closing Remarks

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4 - 5th April 2016
WP12 3rd Annual Review Meeting, STFC Daresbury Laboratory

EuCARD-2 is co-funded by the partners and the European Commission under Capacities 7th Framework Programme, Grant Agreement 312453

EuCARD²

Science & Technology Facilities Council

EuCARD-2 3rd Annual WP12 Meeting, STFC Daresbury Laboratory
4-6 April 2016

EuCARD² 7 CAPACITIES

- Many thanks to our ASTeC organisers for the excellent hospitality!
  - Sue, Marie, Reza & Shrikant particularly.
  - Plus all of the ASTeC tour guides – *it's really impressive to see the breadth of research being undertaken!*

- Many thanks to all Task Leaders and Speakers for a series of really impressive talks!
- Really enjoyed this third review and the fact we continue to generate significant results!

Impressive Progress Again!

- **Task 12.2 SRF Thin Films**
  - **First bias coated HIPIMS** sample generated – **very promising** (CERN).
  - **First A15 phase confirmed with NB_3SN** and **first V3Si coatings** generated (CERN).
  - **PEALD deposition achieved at 250C**, results to be published, ongoing work with NbN (INP).
  - **QPR commissioned** successfully at HZB up to 125mT, sample geometries being optimised (HZB).
  - Collaboration areas identified for: substrate complementarity, analysis and material priorities (HZB/CERN).
- **Task 12.3 High Gradient NC**
  - CLIC crab cavity high power tested and **breakdown analysis and post-mortem completed** (ULAN/CERN).
  - High efficiency TH2166 'kladistron' design developed by CEA, >65% efficiency predicted, prototype being developed and **hardware now being produced** by Thales, tests expected by end 2016 (CEA/Thales).
  - **First high-resolution, WFM electronics systems being installed** in SwissFEL, first commissioning in Jun16 (PSI).
  - **Flexible modulator development** underway with Scandinova, accommodate variety of different klystrons with the same K2/3 modulator platform (UU/Scandinova).
- **Task 12.4 SRF HOM Diagnostics**
  - Cavity characterisation at 1.3 GHz and 3.9 GHz completed, **beam tests performed on FLASH** with **good, repeatable performance**. Electronics performance to be optimised and noise sources reduced (DESY).
  - **GSM simulation technique developed**, identifying **good correlation with experimental measurements**, errors sources being explored (UMAN).
  - **Dangerous intra-cavity HOMs identified** at HOM coupler using SSC technique, multi-cavity HOMs evaluated.
- **Task 12.5 RF Photocathodes**
  - **New photocathode load-lock and transport system** designed, fabricated and **ESCALAB-II analysis system implemented**, bulk metal fabrication processes developed with first experiments expected soon (STFC).
  - Compared Pb coating treatment with laser and plasma pulsed-irradiation, **good QE performance demonstrated** with laser cleaning, **new QE measurement system** implemented (NCBJ).
  - **First Mg photo-cathodes** prepared and qualified with **excellent QE**, repeatable performance but sensitive to vacuum conditions (HZDR)
  - **Preparing long-term Pb/Nb tests** of NCBJ prepared PC for further tests with DESY SC gun (HZDR/NCBJ/DESY).

Really nice to see ….

- Even more Phd and post-doc students providing high impact in a number of areas.
- More Phd students to qualify:
  - Thomas Fligsen (UROS) – qualified already
  - Ben Woolley (ULAN) – qualified already
  - **R. Kleindienst (HZB) – to qualify soon**

- Our results continue to generate journal publications, Accelerating News articles and Monographs:
  - **Keep up the excellent work!**
  - Remember to include the correct Accreditation for all publications – IPAC16, HOMSC16, IBIC16, LINAC16, NA-PAC16 and journals!

- Many thanks to all for a very productive and enjoyable review!
- Looking forward to seeing many of you again for EUCARD-2 Annual Review in 2 weeks @ University of Malta.
- Have a safe journey home!


thank you
danke
謝謝
ngiyabonga
teşekkür ederim
gracias
merci
obrigado
bedankt
dziękuję
go raibh maith agat
sukriya
kop khun krap
terima kasih
mochchakkeram
tapadh leat
спасибо
рахмат
Баярлалаа
dank je
arigatô
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vinaka
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misaotra
matondo
paldies
grazzi
mahalo
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obrigada
murakoze
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dankie
dhanyavad
nanni
nandri
bayarlalaa
gracie
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