User and Beamtime issues

How to reach maximum “customer satisfaction”?

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“New Science Opportunities at FLASH”
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HELMHOLTZ GEMEINSCHAFT

DESY

Outline:

- **Introduction**

  6 years of user beamtimes at FLASH in retrospective

- **Potential for improvements**

  Your success is our common goal

- **Discussion of measures**

  Procedures/regulations ensure transparency of actions

Introduction: user beamtimes in retrospective

- Most experiments were very succesful (>150 high-rank publications so far) – which is also due to our dedicated support ☺
- Many user groups were pretty much autarkic,
  some groups still needed substantial attention/support
- Most groups came with a modular setup and hence could quickly assemble their experiment (with efficient teamwork),
  some groups came with a “naked” chamber and started from scratch
- Often experiment preparations were running late what forced us to either stay longer, make special arrangements or compromise(!) the official regulations to be ready for the first shift ☹ ☹
- On our side some new subsystems are still not fully debugged or automatized and need attention, many colleagues have to be constantly trained for the complex, continuously developing systems.
- Sometimes, communication could be improved (different issues handled by different people, part of information got lost)

Potential for improvements 1/2

- **Primary communication channel:**
  exp. responsible (to be named) ←→ local contact
- **Presentation of User Experiment and its requirements to the FLASH machine colleagues at RC meeting (initiated in last beamtime blocks)**
- **Improve documentation: always enter experiment + BL + phone in Elog header, brief experiment summaries per shift!, longer one at end of all shifts**
- **End of run summary form via web planned**
- **Checklist before you head back home**

Potential for improvements 2/2

follow procedures (more) closely, e.g.

- "binding" beamtime application (parameters put in are supposed to be final!, a web form will be prepared for request of changes)
- declaration of substances
- safety training (best: before arrival!)
- transport issues (things arriving at DESY require prior information and are not just to be "dumped" in hall)
- use of gases (toxic, flammable, high pressure)
- vacuum guidelines and approval rules

Discussion: Consequences

- **Guidelines will be again “clearly” communicated with the e-mail which informs about approved proposals and the one confirming scheduled beamtime.**

- **Not following the regulations will put the experiment at risk!! We really should avoid last-minute arrangements or even "fiddling" the established regulations. Experiments which are ready way too late or forgot the essential things might simply loose shifts!**

FOLLOW REGULATIONS!! PLAN AHEAD!!

Examples

- **No safety training ➔ (leave the hall and) complete it right away before starting to work**
- **DACHS cards for users to have a photo ID (must be worn!) Details still have to be figured out.**
- **No experiment setup is to be started from scratch (putting every single flange to the chamber in the exp. hall), since we have neither the space, nor the personnel to support that.**
- **Arrival times (dates) are "binding" and setup times put to a reasonable minimum. Experiments showing up substantially delayed have blocked a beamline that could have been used for further facility developments (FEL studies) instead.**

Work in progress ...

Beamtime at FLASH

S. Düsterer

Before the beamtime:

- Contact your „ official local contact person“ ar
  - All safety issues (lasers, hazardous mate
  - The date of arrival at DESY
  - Tell about the desired beam parameters experiments:
    - What are the tolerances for the d
    - When to change wavelengths (if
    - What repetition rate is needed
    - Are long pulse trains (> 30 bunc
    - What pulse energies are demand
    - Is the attenuator needed and if at
  - Which gases have to be ordered at DES preferred to order the gases via DESY)
  - Is transport needed within DESY (crane
  - Will material be shipped to DESY?
  - Is data acquisition needed via DESY co Machine parameters)
  - Do you need your computer in the DES reading DOOCS properties)
  - Name a “principle investigator” who de
  -
- Check that your vacuum system obeys the vacu pumps! , interlock contacts are prepared, FEL r chamber…)
- Make sure the “declaration of substances“ (with weeks before beamtime
- Look to the general information on the Hasylab
- Make sure all people who will come to DESY h needed for the safety training and travel expens
- Book accommodation in advance
- Agree with the local contact person on a time s experiment at FLASH
-

S.Düsterer, R.Treusch, 8.4.2011

Duties and Responsibilities of Experiments Local Contacts

Before Beamtime:

- Discuss technical details of experiment with experiment responsible, check for special needs such as filters/attenuator, fast shutter, BAM, DAQ, split-and-delay unit, … . Inform the experts in time.
- Ensure that safety-wise all informations (in particular safety declaration) reach Rolf/Stefan and Mathias in time (at least 2 weeks before beamtime, for dangerous substances/setups even 4 weeks).
- Get info about planned arrival dates from experiment responsible and inform Rolf/Stefan for beamline occupation plan. In case of conflicts this travel planning needs an iteration.
- Make sure that experiment responsible registers all participants and that they all have absolved/refreshed the computer based safety training before(!) they start to work in hall.
- Arrange storage and setup space with Matthias Duske and Rolf.

Upon Arrival:

- Ensure that safety declaration is approved and attached to the grey board (if approved, users can get it printed out in the secretariate).
- Remind experimenters of water connections (via MKK colleagues through Mathias Duske), vacuum approval (our engineers) and laser approval (Stefan and Harald) in due time.
- Provide help with technical things a electrical and signal/trigger connec experimenters to the local experts i

During Beamtime:

- Do the first beamline alignment for arrange that an experienced collea
- Provide technical help during the b also the photon coordinator of the

After Beamtime:

- Ascertain that after the beamtime, from the assigned shelves/containe all borrowed items (in particular cor

http://www-ssrl.slac.stanford.edu/lcls/users/
http://www-ssrl.slac.stanford.edu/userresources/gatehours.html

Each user group should have a user account if they intend to order specialty gases, obtain supplies or ship samples.
http://www-ssrl.slac.stanford.edu/lcls/users/logistics.html#accounts
http://www-ssrl.slac.stanford.edu/userresources/usershipments.html

Before your experiment begins, review the Guidelines for Collaboration, Publications and Press of LCLS Experiments as well as Public Communication Process Guidelines.
http://www-ssrl.slac.stanford.edu/lcls/users/logistics.html#cppguidelines

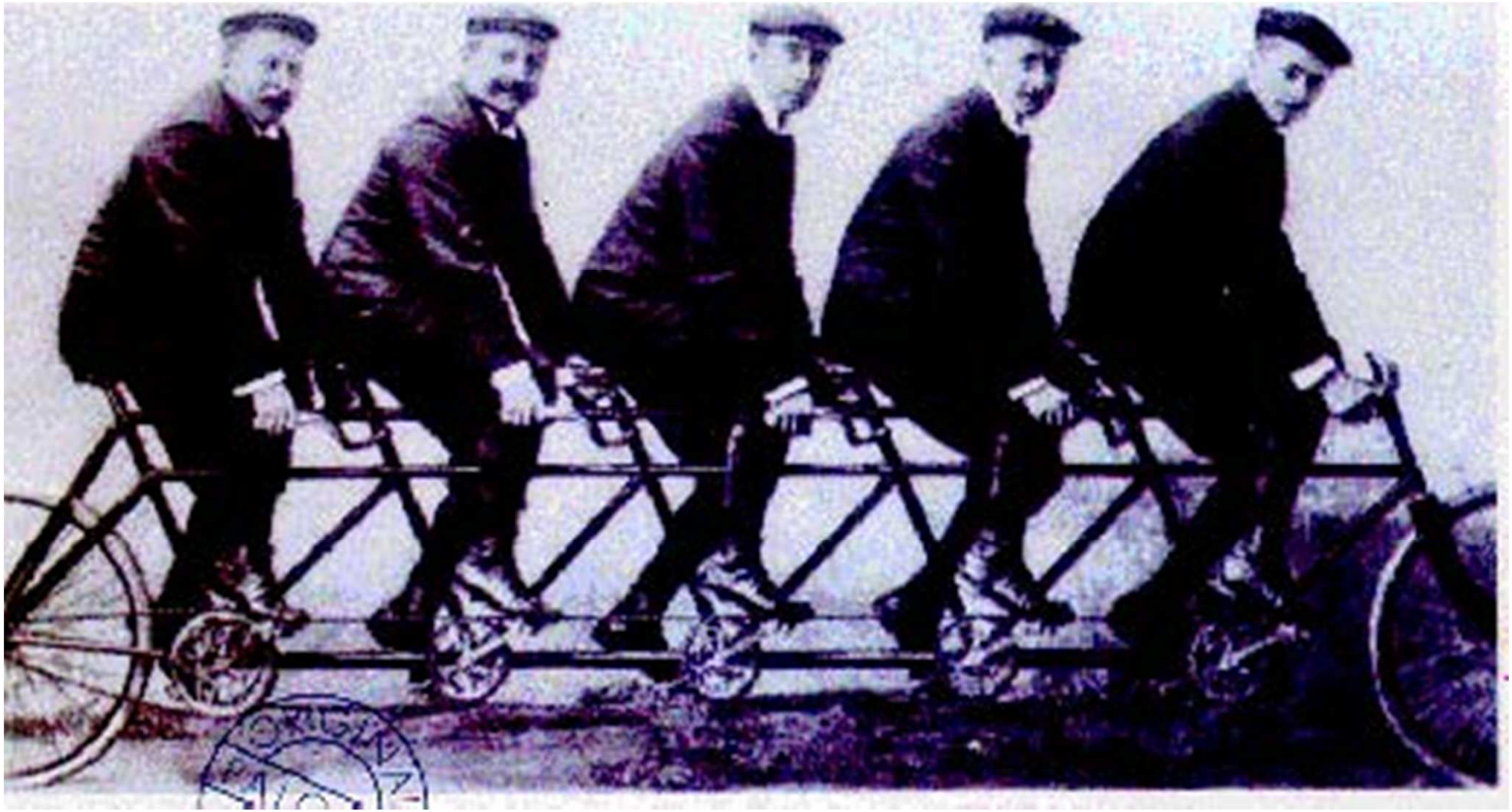
After data have been collected, analyzed and prepared for publication, it is extremely important that users acknowledge LCLS and SLAC as well as funding agencies in each publication using the format posted on the website: "Portions of this research were carried out at the Linac Coherent Light Source (LCLS) at the SLAC National Accelerator Laboratory. LCLS is funded by the U.S. Department of Energy's Office of Basic Energy Sciences."
http://www-ssrl.slac.stanford.edu/pubs/

After completing each scheduled experiment at LCLS, complete an End of Run Summary Form (or have a designated member of group do so) through the user portal. Comments on your experience at LCLS are extremely important to us, and we need your feedback to continue to improve our user operations and to meet our mission requirements, including assessment and reporting.
https://www-ssrl.slac.stanford.edu/URAWI

If you have any questions, run into any problems, or if you have suggestions to improve communications or user interactions, please let

Prop. ID	Leader	Title (first 50 chars)	Local Contact
F-20090332	Yuhai Jiang	Visualizing ultra-fast Aoetylene-Vinylidene isomerisation by EUV-pump/EUV-probe at FLASH	Günter
F-20090338	Robert Moshammer	Time-resolved 3D electron and ion spectroscopy of dissociating I2 molecules	Günter
F-20090345	Henry Chapman	X-ray Imaging Beyond the Limits	Rolf
F-20090373	Yves Acremann	Laser and x-ray induced ultrafast demagnetization probed by spin-polarized photoemission	Natalia
F-20090379	Andrea Cavalleri	Towards all FEL, THz pump X-ray probe in complex solids: magnetic polaron dynamics	Nikola
F-20090386	Thomas Wilhein	Non-linear x-ray phyics at extreme intensities	Kai
F-20090313	Hermann Duerr	THz control of magnetization in itinerant ferromagnets	Nikola
F-20090339	Daniel Rolles	Imaging Molecules from Within: Time-Resolved Three-Dimensional Photoelectron Diffraction in Laser-Aligned and Oriented Molecules	Siarhei
F-20090322	Karl-Heinz Meiwes-Broer	Correlation and coherence in electron emission from clusters	Marion
F-20090375	Tim Laarmann	The effect of bound water and low frequency excitations in bio-active molecules: Bridging the gap between in vacuo and in vitro photophysics	(Tim) Nikola
F-20090382	Wilfried Wurth	Molecular wavepacket dynamics probed by XUV-XUV pump-probe experiments	Natalia
F-20090329 EC	Gianluca Gregori	Ultrafast relaxation of warm dense hydrogen	Sven
F-20090340 EC	Per Johnsson	Imaging ultrafast molecular dynamics through photoelectron diffraction and interference	Stefan
F-20090357	Alexander Dorn	Few-Photon Multiple-Ionization of Lithium and Production of an Ultra-Cold Neutral Plasma using a MOT-Reaction-Microscope (MOT-REMI)	Harald
F-20090342	Robert Moshammer	Few-Photon Multiple-Ionization of Atoms and Molecules using a Reaction-Microscope	Günter
F-20090365	Philippe Wernet	X-ray femtochemistry: Element-specific mapping of the electronic structure in a dissociating molecule	Stefan
F-20090314 EC	Bob Nagler	FEL pump-probe experiments to measure Core-Hole Lifetimes in Exotic States of Matter	Sven
F-20090326	Christian Gutt	Probing Ultrafast Magnetization Dynamics via Resonant Magnetic Scattering at FLASH	Alaa
F-20090355	Markus Drescher	Time-resolution-optimized ion and electron spectroscopy following coupled electronic/nuclear dynamics in small molecules	Harald
F-20090327	Andreas Wolf	Fragmentation and Electron Rearrangement Dynamics Induced by X-Ray Ionization of Protonated Water Clusters	Siarhei
F-20090352	Michael Martins	Core level spectroscopy of transient, molecular species	Kai
F-20090358	Uwe Becker	Study of anisotropic final state interactions and coupling in two-photon ionization of rare gases	Kai
F-20090360	Matthias Kling	EUV pump-probe experiments on photodissociation and autoionization dynamics of superexcited molecular states	Günter
F-20090363	Thomas Moeller	Ultrafast Dynamics of Highly Excited Clusters	Marion (Alaa for PP laser)
F-20090320 EC	Janos Hajdu	Biology with FLASH: Ultra-fast diffractive imaging of living cells and viruses	Rolf
F-20090378 EC	Michael Meyer	Two-photon inner shell excitations in rare gas atoms	Stefan
F-20090335	Ivan Vartaniants	Coherent Diffraction Imaging and Holography of Biological Samples with Femtosecond Pulses at FLASH	Alaa
F-20090387	Michael Ruebhausen	Steady state and time-resolved X-ray Raman measurements across phase changes in complex solids	Natalia
F-20090349 EC	Villy Sundstroem	An investigation of charge transfer processes in a dye-sensitized solar cell over several timescales, using laser-pump/FEL-probe photoelectron spectroscopy	no shifts yet
F-20090316	Tim Laarmann	Measuring the rotation of molecules in helium quantum clusters by rotational wave packet rephasing	Tim (Nikola)
F-20090343	Artem Rudenko	Time-Resolved Fragmentation and Control of Energy Deposition in VUV-IR Pump-Probe Experiments on Rare Gas Clusters	no shifts yet

Let’s work in sync!



courtesy: J. Rossbach

The end.

Hopefully not the end

but the beginning of an even smoother user beamtime operation

with more routine procedures and optimized use of manpower

on both sides.