



IEF WS recap (highlights from B.G. closing remarks)

BI-TB 20-Jan-22

Recall: workshop topics/questions/outcomes

1. **Experiments'** analysis of 2021 operation, desiderata for 2022 and longer-term perspective (incl. PBC and facilities)
2. Address **reproducibility and availability**, configuration changes and setting up, especially in terms of requirements of experiments. Understand their preferences, i.e. peak performance vs. reproducible performance, etc.
3. Review of our **KPI** (BPT tool, values and suitability of metrics)
4. Review of **performance** ramp-up progress (new LIU beams and other new machines)
5. Update of complex performance **reach** with new HW for existing users
6. **Specific recommendations on fixes/upgrades/additions for equipment** (HW, SW)
7. **Specific recommendations on Operations** improvements (tools, procedures, scheduling)
8. **2022 scheduling** and priorities
9. Discussion and improvements to our reporting and **communication**
10. **Longer term identifications of (new?) CONS priorities**
11. Longer-term identification of injector complex **operational performance improvements/synergies**
12. Identification of targets for improvement threads for **IEFC** to follow in 2022 and beyond

1. Experiments analysis of 2021 & 2022 desiderata

- Stability and scheduling of quality data taking: impact from other users
- Duty cycle concern and spills for ion runs: revisit detailed schedule #A
- Spill structure (spike, harmonics) and monitoring “flatness of spill and duty cycle as important as intensity”: joint study/project? #A
- Several proposals to improve throughput, from timing system to splitting –

2. Address reproducibility and availability

- Availability OK, under control of Groups. **Reproducibility** is critical concern with increasing flexibility and multi-destination operation
- Transmission problems and instability in beam delivery in many locations. “Need more time in 2022” → have to ensure this is there (add in schedule?) #A
- Addressing reproducibility relies on many factors including equipment

6. Recommend HW/SW fixes/upgrades/additions

- Process for collecting, evaluating and endorsing (or not) proposals is unclear. Many sources of requests, each with its own communication/approval channel:
 - Legacy from LIU, OP, IPP, CONS, Other projects and studies, Groups, individuals...
 - Clear example with Beam Instrumentation – urgent: can use this for case study
- Probably not feasible (or advisable) to try and control this process fully. Need to trust and

7. Recommend Operations improvements

- Clear and comprehensive set of needs for improvements presented from OP groups
- Same question as in 6: Where to follow up wider topics, now LIU framework is no longer there? #A
 - Already triggered new proposals with CSS and OP to improve coordination of SW activities in light of our experience. To discuss, review and endorse #A
- Discussion on restarting complex in new “orthogonal” way. by system rather

12. Targets for threads for IEFC to follow \geq 2022

- Many picked up and tagged “#A” in previous slides (IPP or IEFC)
- Real ‘threads’ could include
 - Possible improvements to beam throughput (timing system & cycle compositions, PPM beam destinations and splitting)
 - Improve spill structure and monitoring in PS and SPS
 - Instrumentation and optics validations for beamlines
 - Finalise scope of ISOLDE upgrade
 - Revisiting priorities for eradication of legacy platforms

Specific Points to follow up

11. Emittance across complex was not a focus in 2021, needs more work in 2022 on the cross-calibration (OP, BI, ABP)
15. Review fast spill monitoring across complex – propose roadmap (BI, OP, ABT, R2E)
21. Explicit planning of commissioning time with beam for instrumentation (BI, OP)
28. Have systematic IST approach across the complex (OP, ACE)
29. SW readiness problem (late arrival of FESA classes). Explore extending SUWG scope? Project approach (CSS, OP)
32. Study needs and possibilities of increased timing system flexibility (CSS, OP, equip groups)
36. Investigate common general checklists for Equipment teams and OP. And do we need a global commissioning coordination? (OP)
42. Include LS2 experiences in EMC community forum analysis (EMC, BI, ABT, ...)
43. Review North and East Area beamline instrumentation requirements (ABT, BI, OP, EA)
48. Upgrade of FTA line to give required beam size on target (ABT, STI, ...)
52. Study and make proposal for 'orthogonal' commissioning of all machines, by system (OP, ACE, equip groups)
53. Requests for optics measurements studies/changes to follow IPP recommendations (IPP, IEFEC, ABP, BI, ABT)
54. Fix SPS servo spill monitor this YETS (BI, VSC)
71. Evaluate possible R2E for BI for LEIR (R2E, BI, OP)