

Operations Directorate Update

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APS/Users Monthly Meeting

14 April 2005

Argonne National Laboratory



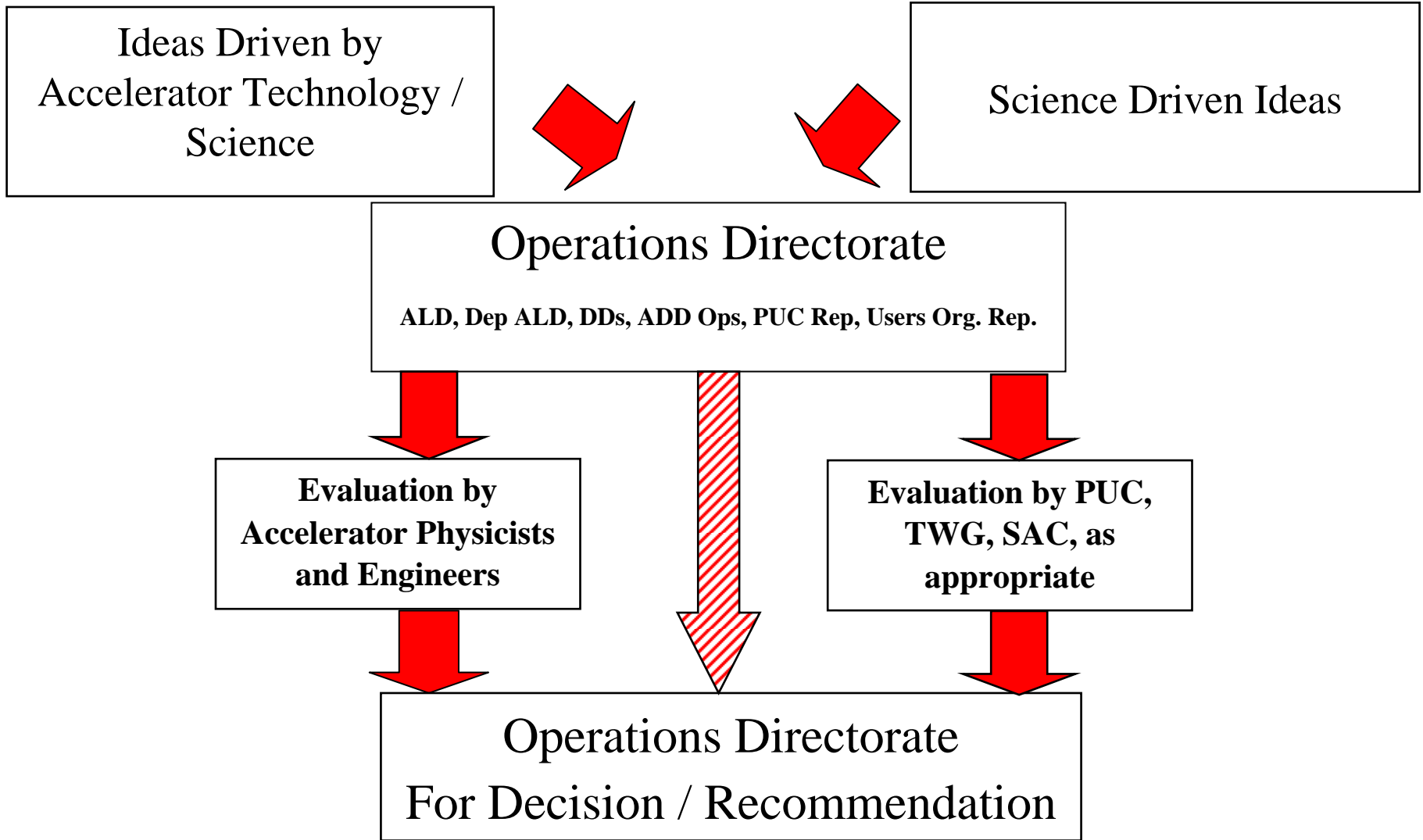
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What is the Operations Directorate?

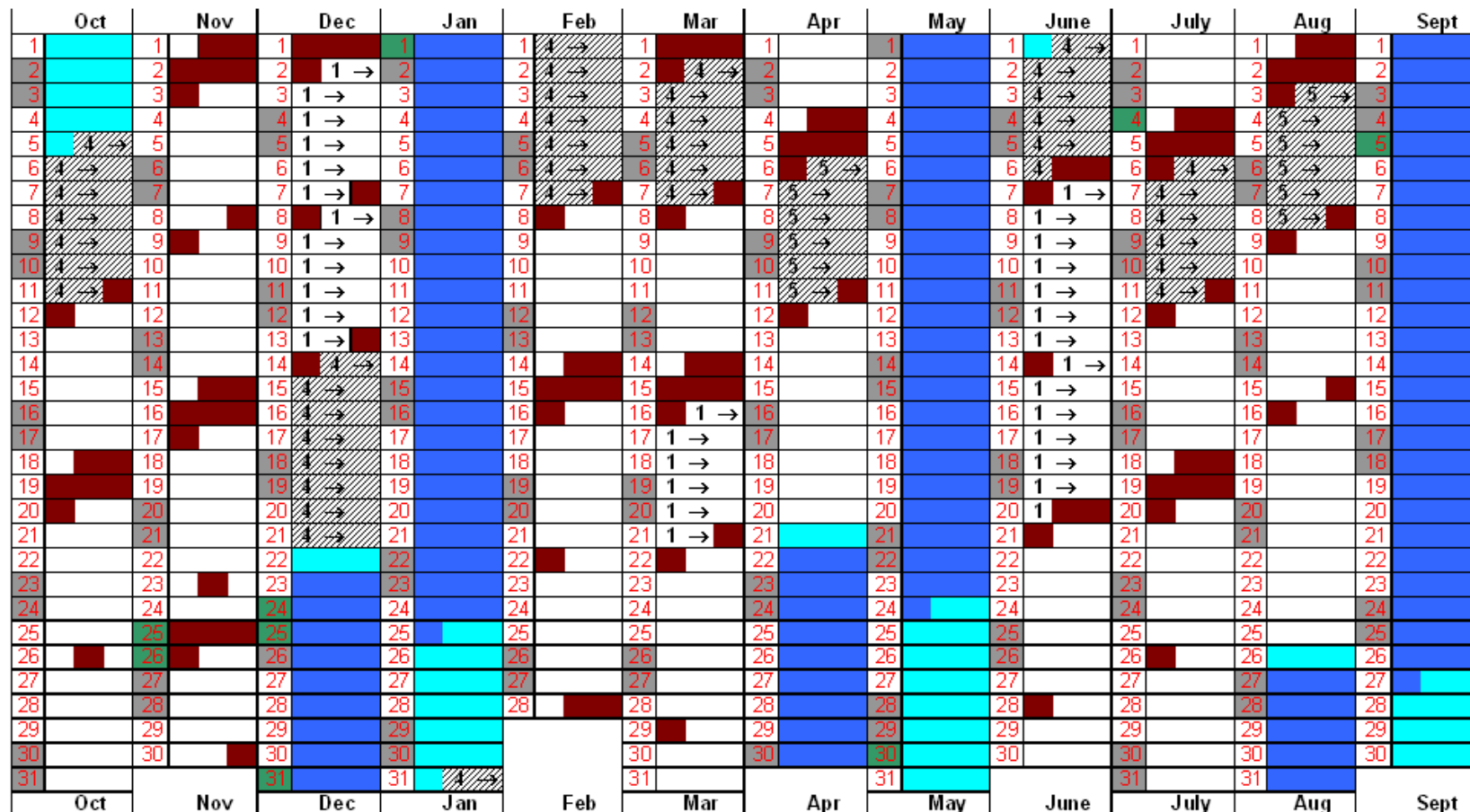




APS FY 2005 Long Range Operations Schedule

Run 2004-03

Run 2005-01




Run 2005-02





 Top-up User Operation in low emittance mode
 Non top-up User Operation
 Fill pattern is 24 singlets unless otherwise indicated

SOM Periods

- 1 Hybrid Fill - (singlet)
- 4 324 Singlets - Low E. Fill
- 5 1296 Singlets-Low E Fill

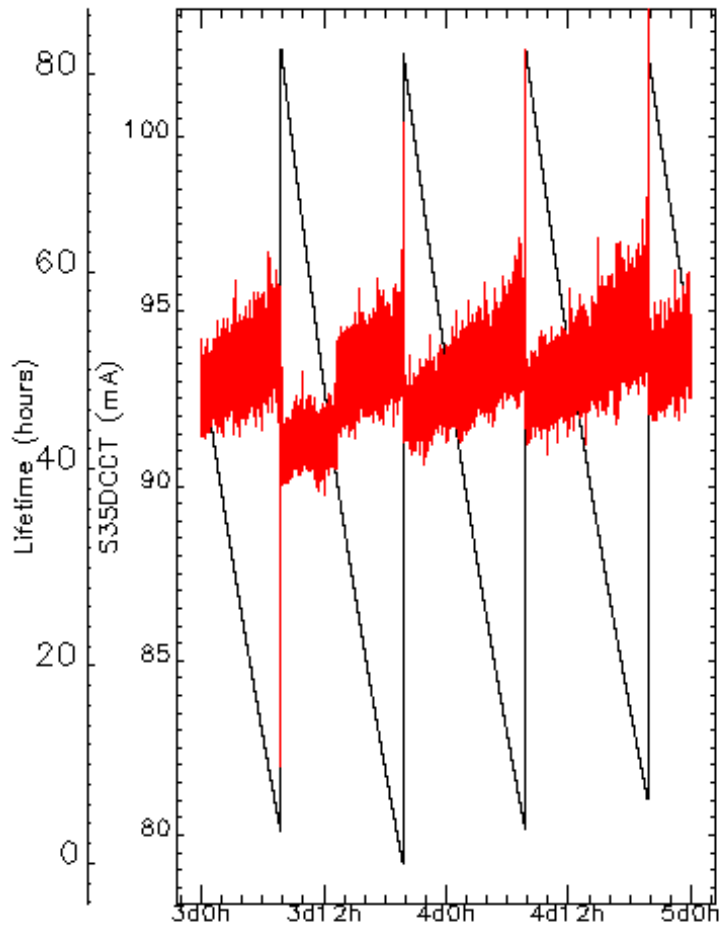
 Machine Studies
 Maintenance
 Shifts set aside for Studies/
 Machine Intervention as Needed

 Weekends
 Lab Holidays

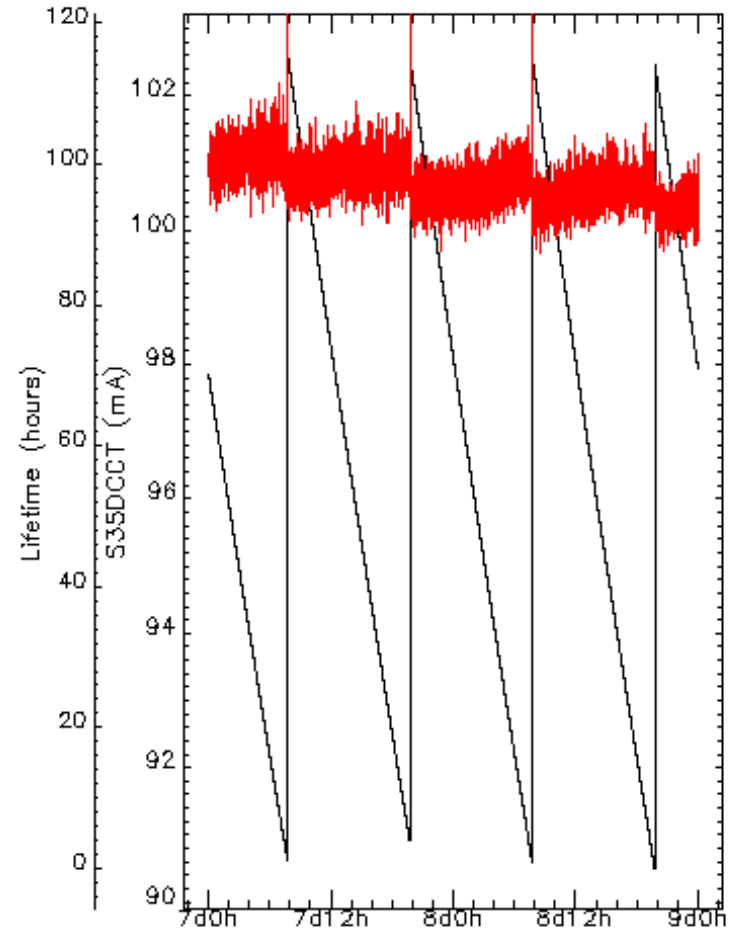


Current Issues: 1296 vs 324 mode

324 Bunch Non Topup Mode





1296 Bunch Non Topup Mode








APS FY 2005 Long Range Operations Schedule

Run 2004-03				Run 2005-01				Run 2005-02			
Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
1	1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9	9	9
10	10	10	10	10	10	10	10	10	10	10	10
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22	22	22	22	22	22	22	22	22	22	22	22
23	23	23	23	23	23	23	23	23	23	23	23
24	24	24	24	24	24	24	24	24	24	24	24
25	25	25	25	25	25	25	25	25	25	25	25
26	26	26	26	26	26	26	26	26	26	26	26
27	27	27	27	27	27	27	27	27	27	27	27
28	28	28	28	28	28	28	28	28	28	28	28
29	29	29	29	29	29	29	29	29	29	29	29
30	30	30	30	30	30	30	30	30	30	30	30
31	31	31	31	31	31	31	31	31	31	31	31

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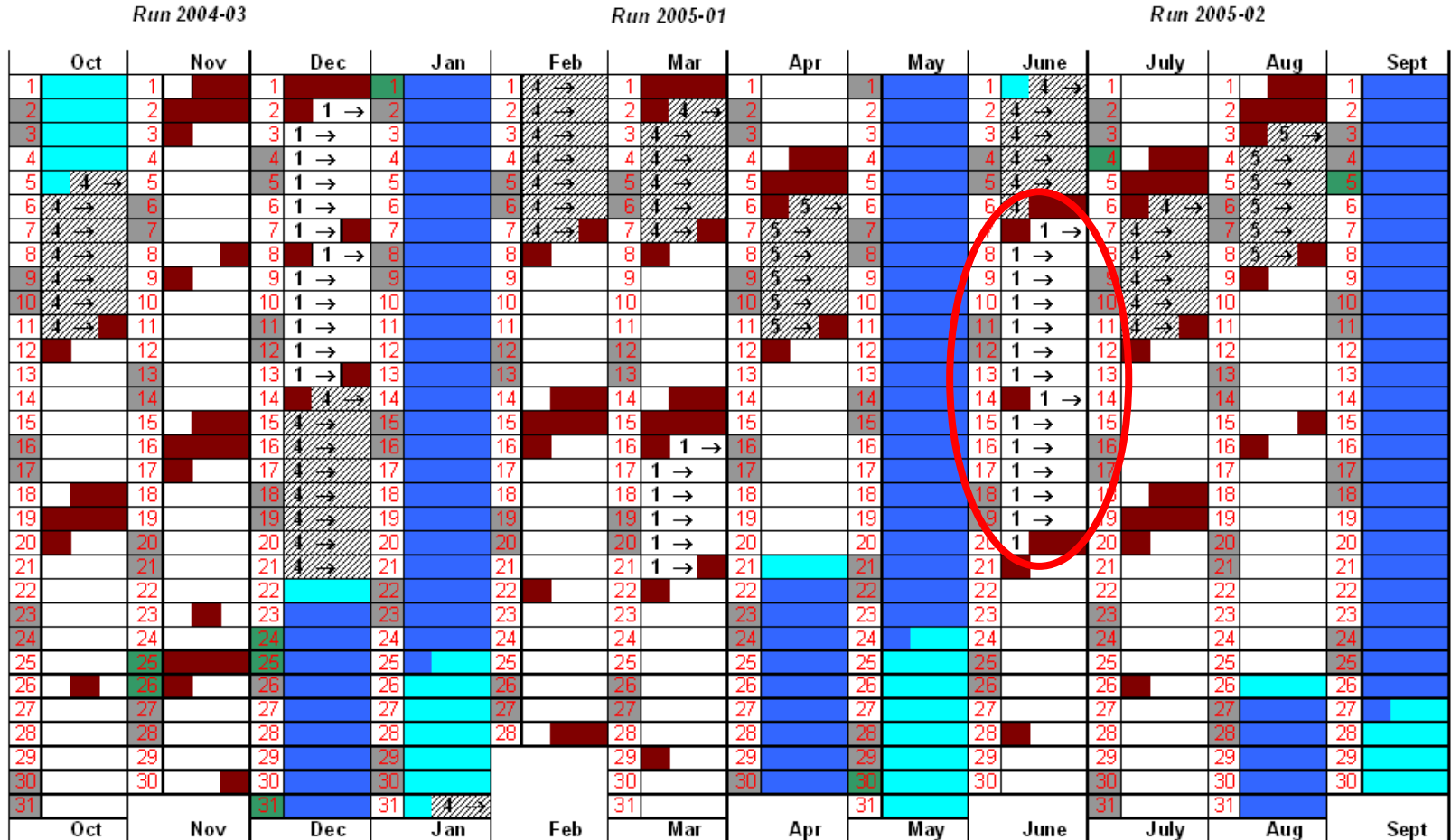
More Top-up Time



- **We need to understand the impact on existing beamline schedules if we convert at the 324 or 1296 mode to 24 bunch Top-Up for next running period.**
 - For example, this run one beamline attempted to use 1296 mode for stroboscopic studies at 352 MHz
- **Call, email, write, or CAT CHAT, etc...**

Current Issues: 12 mA in Hybrid Mode




- **Hybrid Mode: A single bunch containing 8 mA isolated from the remaining bunches by symmetrical 1.59 microseconds gaps. The remaining current is distributed in 8 groups of 7 consecutive bunches with a maximum current of 12 mA per group and a spacing of 48 nanoseconds between groups.**
- **APS has been working on increasing current in single bunch.**
- **12 mA has been achieved but NOT with two-minute top-up intervals. (It is do-able with one minute intervals.)**
- **Almost every enhancement to the storage ring involves loss of lifetime, so decreasing the top-up interval is a natural consequence.**
- **Anecdotal comments suggest that top-up event isn't really a problem. If it is, we need to hear about it.**



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Customized Lattice Functions

- **New and existing scientific programs may be enhanced by customized lattice functions.**
- **An initial look suggests that this might be done at a “few” places around the storage ring.**
- **The impact on the machine is dependent on the locations where the customized functions are implemented.**
- **So ...**
 - Operations Directorate wants to identify candidate sectors where customized lattice functions will enhance the scientific program so decisions can be made as to which sectors to be initially targeted during machine studies period.

Faster Timing Modes

- **Potentially very exciting scientifically**
- **Workshop at User Meeting**



Finally: A Plug For CAT CHAT

- **CAT CHAT is your opportunity to hear what is going on and to give feedback directly to upper AOD Management.**
- **When relevant, feedback goes to the Operations Directorate.**
- **If there are ways we can make CAT CHAT more effective, let me know.**