

Software Management and Misc. Issues

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ATF2 Software review Workshop
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Steps to Software Application Completion

- Simulation
 - Agree on best method(s) chosen through simulation results with standard error application.
 - Write FS implementation and test.
 - Devise some standard test routine which applies some common accelerator error conditions?
- Test at ATF2 through client FS interface
 - If multiple methods still exist through to this stage, choose best one.
- Document
- Migrate to control system proper (trusted FS)

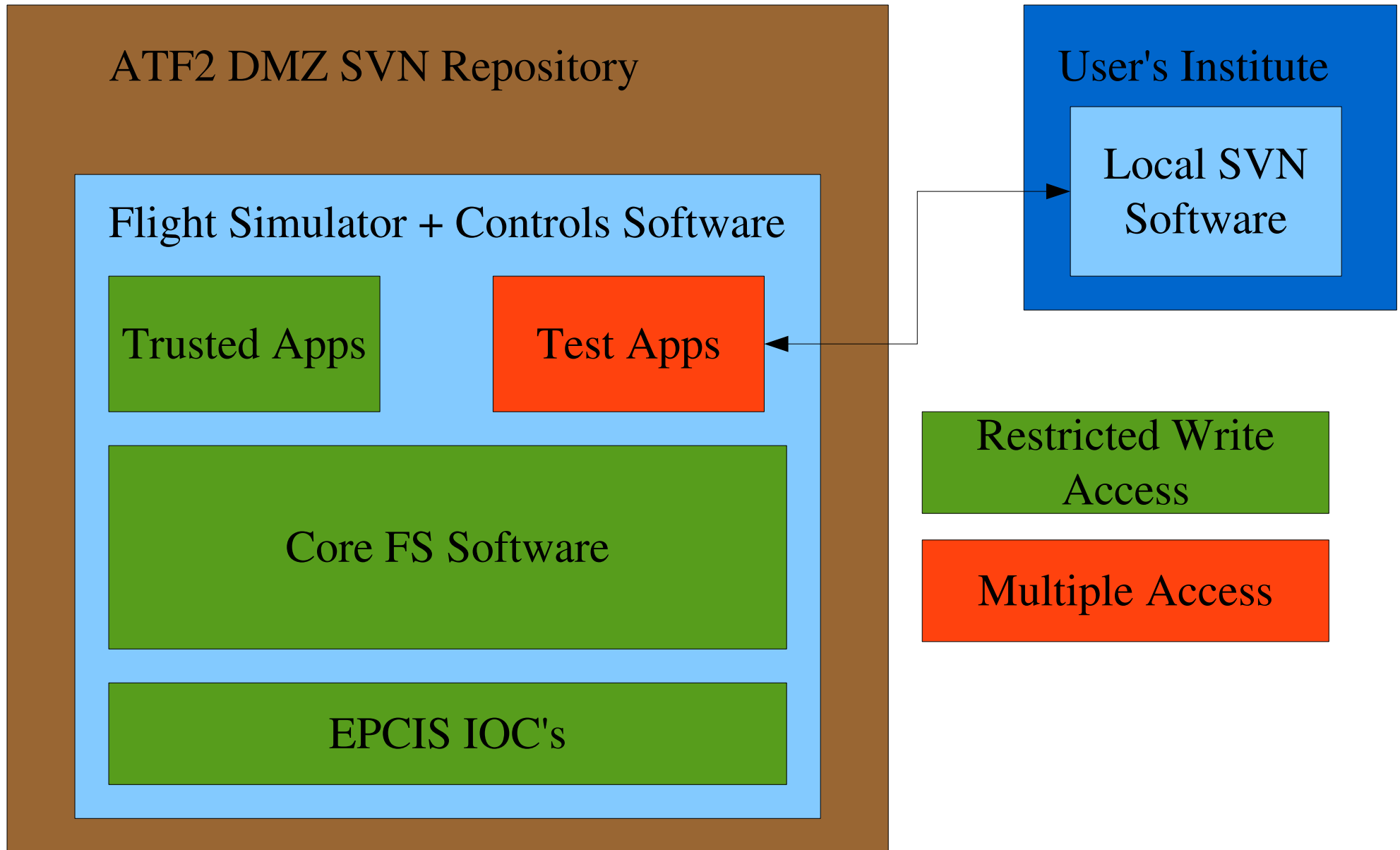
Documentation

- Multiple authors of ATF2 tuning software
- Important to use a wiki for documentation
- For now, one exists at SLAC for all ATF2 hardware and software work we have been doing for ATF and ATF2
 - <http://confluence.slac.stanford.edu/display/ATF/Home>
- Happy to continue this way?

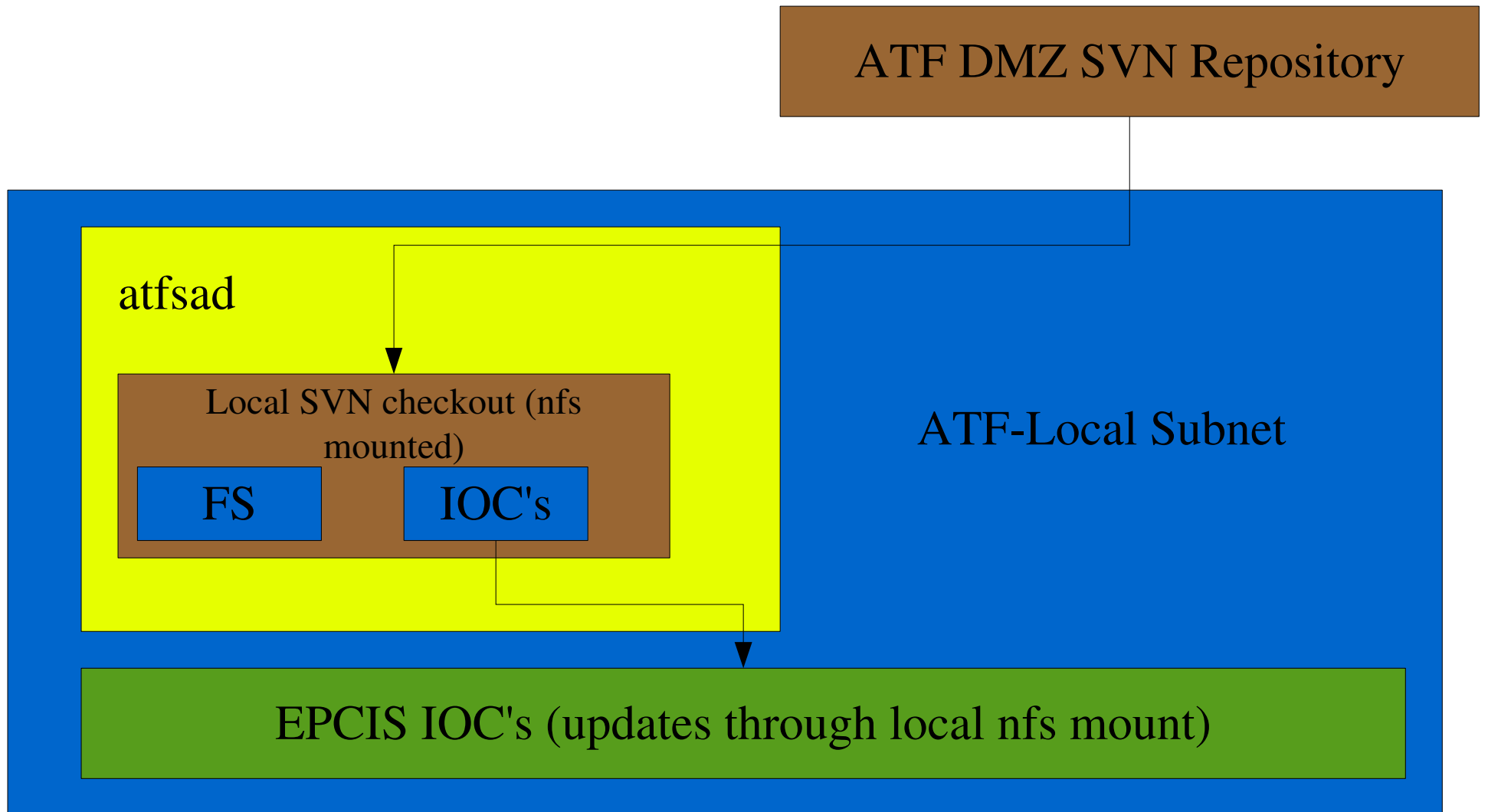
Remote Participation

- Video
 - Spycam, skype, webex
- Audio
 - Skype (need quality microphones)
- E log
- File exchange
 - Currently use scp over vpn to control system
 - Better to have ftp server or similar on dmz computer?
 - Also use above for automatic storage of ATF2 live lattice etc.
- Software updates
 - While in test stage, apps tested through FS Client responsibility of nominated person(s), after in production use- should be harder to change.
 - Maintain software in FS software repository (currently CVS at SLAC)
 - CVS (or SVN or whatever) should move to ATF dmz computer.

Remote Software Update Management



KEK Software Update Management



Central List of Error Parameters

- Maintain central list of error parameters on Flight Simulator wiki?
- Basis for comparing different algorithms, studying impact of changes etc in simulated environment.
- Also maintain sample list of 100 tuned seeds to use as initial conditions for further simulations (AML and Lucretia format).
- Also Kubo-san 's ring simulation results as input conditions stored.

Static Tuning Errors

x/y/z alignment errors	200 um
Quad, Sext / Bend roll alignment	300 urad
Initial BPM-magnet field center alignment	30 um
dB/B for Quad, Sexts	1e-4 syst. + 1e-4 random
Mover step size (x & y)	50 nm (> ?)
BPM resolutions	100 nm
Power supply resolution (not included in this simulation as shown)	20 (FFS)/11 (EXT) bit
Shintake Monitor Resolution	2nm (+ dyn. Err cont.)

Also:

- Quad Trim behaviour
- Kubo Ring simulation as initial twiss input (multi seeds).
- Number of seeds to use
 - 100 ?
- Dynamic error contribution to IP BSM resolution
 - 1.3nm ...

Dynamic Errors

- EXT Injection error treatment
 - 0.1 sigma noise at all phases at injection point?
- Corrector field errors
 - Based on PS precision.... ?
- Magnet vibration
- BPM resolutions
- GM Model
- Magnet drift model ... ?
- Other longer-term drifts, cooling water.... ?

Next Steps

- Identify responsible persons for all projects.
- These people prepare more detailed status, work list + schedule.
- Setup software infrastructure like the ideas discussed here.
- Meetings as necessary to review progress
- Setup email distribution list for discussions
 - Use `ilcphys.kek.jp` system?