

DRAFT: For Organizing LET Beam Dynamics Work in EDR Phase

for LET Workshop @ SLAC
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Proposal for organizing LET works
Including personal opinion

Proposal on LET beam dynamics related Work packages and roll of Simulations Group

Almost all Work Packages proposed by Simulations Group were overlapped with WPs of other groups.

- Work items related to (almost) one single area are under Area Groups (RTML, ML or BDS).
- Basically, inter area work items are under Simulations Group.
 - However, work items which will be more on hardware than simulations are not under Simulation Group.
- All LET beam dynamics simulation workers should be in Simulations Group and closely communicate each other.
- Important simulation results should be cross checked by more than one group.

Single Area WPs (almost single area)

Proposed by Sim. G.	Overlapped WPs Proposed by Area G.
RTML	RTML: Static Tuning study, Errors sensitivity study, Failure mode analysis, Specify and Study Magnetic stray fields, Study space-charge effects, Dynamic tuning, Specify and develop feed-back system
ML Static tuning	MLI: Static tuning (Include Undulator Section ?), Initial Alignment
ML Dynamic tuning	MLI: Dynamic tuning (Include Undulator Section ?)
***	MLI: General ML BD (Include Undulator Section ?)
BDS	BDS: Most of "Acc & Det phys. design & optimiz." of BDS
ATF2	BDS: ATF2 Installation, integration, component commiss. Develop control & operation tools ATF/ATF2 commiss., operation & beam study

Inter area WPs

Proposed by Sim. Group	Related Wps proposed by Area Groups		
	RTML	ML	BDS
Feedback/Feedforward	Dynamic tuning. Specify and develop feed-back system	**	Design feedback and tuning procedures
Control longitudinal phase space	**	Energy Errors	*
Emittance monitoring	**	**	**
Start to End Simulation	**	**	**
Background	Study of beam halo in the RTML	**	Background and beam-beam study
Machine Protection	Design, Specify MPS	**	Design MPS system of field value failure detection
Spin dynamics	**	**	** (?)

** Strong relations but no specific WP proposed

DRAFT List of ILC Simulation Work Items (Packages)

- RTML (emittance preservation)
 - Upstream RTML
 - Bunch Compressors
 - ML Static tuning
 - ML Dynamic tuning
 - BDS (emittance/luminosity preservations)
 - ATF2
 - Feedback/Feedforward model and simulations
 - Control of longitudinal phase space of the beam
 - Emittance monitoring
 - Start to End Simulation
 - Background
 - Machine protection
 - Spin dynamics
- Single area
- Inter-area
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Probably not under our group, but we will join..

WP proposed by Simulations Group	Should be Included WP under
RTML (emittance preservation)	RTML
ML Static tuning	MLI
ML Dynamic tuning	MLI
BDS (emittance/luminosity preservations)	BDS
ATF2	BDS
Feedback/Feedforward model and simulations	Simulations (total performance) Area Groups (design)
Control of longitudinal phase space of the beam	RTML
Emittance monitoring	Instrumentation (?)
Start to End Simulation	Simulations
Background	BDS (?)
Machine protection	Control (?)
Spin dynamics	Simulations

For organizing works in “Simulations” Group - 1

Note again:

- All LET beam dynamics simulation workers should be in Simulations Group and closely communicate each other.
- Important simulation results should be cross checked by more than one group.

For organizing works in “Simulations” Group - 2

We may assign a contact person for each area

- RTML
 - We may divide into two: bunch compressors and the rest
 - ML (including Undulator section of e- linac)
 - BDS
- or each WP ?

and “our” WPs.

- Feedback/Feedforward
- Start to END simulation
 - This is very special item. May be considered later.
- Spin Dynamics

Possible organization

“Simulations” Group

WP-1

WP-2

BDS BD contact

ML BD contact

RTML BD contact

RTML Group

WP-a

WP-b

WP-c

Beam dynamics works

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But

- We do not know whole structure of EDR work organization, WPs, etc..
- It does not look urgent to make assignment in our (“Simulations”) group.

Assignment in our group can (should) be postponed?

? ? ? ? ?

CONCLUSION

Let us agree on:

- All LET beam dynamics simulation workers (most of them work for WPs under other groups) should be in Simulations Group and closely communicate each other.
- How to communicate
 - We (continue to) have regular teleconference.
 - Set up a web site which include all information (?)
 - Need manpower to support it. (EDMS group ?)
 - Seems most of such projects fail. Probably because “all” does not even close to “all”.

Assignment in our group can (should) be postponed.(?)