

Sources Subgroup Summary

K. Yokoya, for IDT-WG2 Apr.20

● Feb.8 10th Regular meeting

- ✓ Masao Kuriki, Hitoshi Hayano, Gudi Moortgat-Pick, Joe Grames, Kaoru Yokoya, Shin Michizono, Jenny List, Andy Lankford, Sabine Riemann, Peter Sievers, Benno List, Phil Burrows, Tohru Takahashi, Tsunehiko Omori (Some are missing, perhaps)
- ✓ Indico <https://agenda.linearcollider.org/event/9080/>

● Discussion about the WBS for ILC Pre-Lab

- ✓ Yokoya presented the idea of WBS following Benno's presentation in WG2 meeting on Apr.4
- ✓ First version of WBS-sources presented
- ✓ To be refined in the next meeting
 - Electron Joe
 - Undulator Gudi
 - E-Driven Masao
 - Target maintenance Masao, Peter

Code			Scoping statement	Deliverables	Items to be included in the technical system
1.2	Sources		Design the electron and positron source systems, with prototypes of critical items	Source system lattices Sources system design Sources performance specification component requirements and specifications Component counts Design and costs for sources specific components Prototypes of critical items Chapter for EDR	
1.2.1		Electron source system design	Design the electron source system from gun to DR injection	Electron source system lattice ES system design ES performance specification component requirements and specifications Component counts Chapter for EDR Cost estimate for ES specific components	polarimeter
1.2.2		WP04: Electron source	ES gun drive laser design cathode	ES gun drive laser cathode	
1.2.3		Undulator positron source system design	Design the undulator positron source system	Undulator positron source system lattice UPS system design UPS performance specification Chapter for EDR cost estimate	SC 5GeV linac components
1.2.4		WP05: Undulator	Simulation studies with field errors and misalignment Undulator parameter optimization	heating of undulators and masks, error effects, orbit correction method, etc. Optimized parameters such as K, pitch, aperture, etc.	undulator, cryogenics quadrupole magnets, BPM, steering
1.2.5		WP06: Rotating target (und. src.)	Design finalization of the rotating target Study of magnetic bearings Fabrication of the full model	Final target design and fabrication of partial model performance test of bearings Reduced unit of the full wheel	
1.2.6		WP07: Magnetic focussing (und. src.)	Design the pulsed solenoid Study of other OMDs Integrated design of OMD and wheel	Build the power source and test the prototype positron yield calculation Fully assembled wheel with OMD	
1.2.7		E-driven positron source system design	Design the e-driven positron source system	e-driven positron source system lattice Chapter for EDR cost estimate	NC driver linac components NC booster linac components
1.2.8		WP08: Rotating target (e driven)	Target stress calculation with FEM Vacuum seal target module	summary of all simulations (heat, stress, etcB) vacuum seal prototype and vacuum demonstration target module prototype, long term operation	
1.2.9		WP09: Magnetic focussing (e driven)	Flux concentrator conductor Transmission line Flux concentrator system prototyping	fabrication of the FC system and test	
1.2.10		WP10: Capture cavity	APS cavity design capture cavity beamloading compensation power unit prototyping solenoid prototyping capture linac prototyping	APS cavity prototype loading simulation APS cavity test with power system capture and booster linac orbit simulation positron yield calculation	
1.2.11		WP11: Target Maintenance	target region shielding target replacement system	target region layout EDR	