CesrTA Machine Studies Task Overview

I. Experiment Description

Experimental Topic	RFA Characterization Measurements at 5.3 GeV	
Classification[*]	EC	
Coordinator/ Experimenters	J. Calvey/M. Palmer	W. Hartung, J. Makita, S. Santos, R. Schwartz, S. Roy
Primary Goals	Characterization of vacuum chambers with EC mitigations at 5.3 GeV.	
Description[†]	Route – CTA_5289_0W_14NS Energy – 5.3 GeV Nominal tunes (multi-bunch): fh = 223-227 kHz; fv = 234.5-239.5 kHz Species – Positrons and electrons Chicane ON (19200 CU) Bunch configurations : 1x45, 14ns- Stop for voltage scans at total currents of 34 mA, 56 mA and maximum 1x20, 14ns- Stop for voltage scans at total currents of 56 mA, 100mA, 150mA, and maximum current (target 200mA, if possible) 9x1, 280ns- Stop for voltage scans at total currents of 34 mA and maximum current If there's time… 1x20, 4ns- Stop at 56mA and maximum current 1x45, 4ns- Stop at 34mA and maximum current 1x45, 42ns, Stop at 23mA	
Special Needs/Requests	Needs preparation of injection conditions and pre-check of location in tune plane for long train operation. New L3 RFAs should be connected for standard RFA readout.	
Prerequisites[‡]	**Personnel**	**Description**
Injection Conditions	M. Forster, S. Peck, J. Sikora	Ensure good electron and positron injection conditions for long trains. Estimate approximately 4 hours for a basic tune-up of these conditions.
Establish Working Point	MAP/MGB	Establish working point for long trains due to large tune spreads
Time Requested[§]	**No. Shifts**	**Principal Tasks**
6 hours	1	Measurements described in description section above.

[*] Machine Studies Classifications:
- EC - Electron Cloud
- LET - Optics Correction and Low Emittance Tuning
- xBSM - x-ray Beam Size Monitor
- INST - Instrumentation (BPM development, RFA development, other)
- MDEV - Machine Development (includes injection configuration, injection tuning, custom orbit setup, instrumentation preparation, etc.)
- MREC - Machine Startup (recovering conditions after down time)

[†] Attach additional pages for experimental description if needed

[‡] Indicate other machine work that is required in preparation for this machine studies experiment.

[§] Indicate the principal shift topics and estimated number of shifts required

II. Machine Studies Assignments

Reserved for Project Management Team Use		
Topic ID		
Priority[**]		
Shift Assignments	**Date**	**Shift**

[**] Priority Scale:

1. Critical – results are necessary for preparation for subsequent down/run periods
2. Very high – results are strongly desired for achieving program milestones or in preparation for subsequent down/run periods
3. High – results are of immediate interest but not require
4. Moderate – results should be pursued at the first convenient opportunity
5. Low – results are not presently a high priority for either project milestones or planning