

# CesrTA Machine Studies Task Overview

## I. Experiment Description

<b>Experimental Topic</b>	<b>Electron Cloud Comparison with August Data: TEWave, SPU</b>	
<b>Classification<sup>1</sup></b>	<b>EC, INST( TEW, SPU)</b>	
<b>Coordinator/ Experimenters</b>	<b>JPS</b>	
<b>Primary Goals</b>	<b>Compare TEW and SPU at 15E, SPU at 15W</b>	
<b>Description<sup>2</sup></b>	<p><b>2.1 GeV Conditions: Positrons and Electrons</b></p> <p><b>Data will be taken using</b></p> <ul style="list-style-type: none"> <li>• <b>Shielded Pickups at 15E/W</b></li> <li>• <b>TE Wave detector at 15E</b></li> </ul> <p><b>Bunch plus witness bunch at 28 – 84ns</b></p> <p><b>Single bunch with solenoid field +/- 150 Gauss</b></p> <p><b>(if time allows, I will put in multibunch trains and take SPU TEWave data vs. current).</b></p>	
<b>Special Needs/Requests</b>	Will want to “steal” BPM at 15E - access required before/after main data taking.	
<b>Prerequisites<sup>3</sup></b>	<b>Personnel</b>	<b>Description</b>
Hardware Setup	JPS	“steal” BPM at 15E
2.1GeV e+ injection	???	Need positron and electron injection
<b>Time Requested<sup>4</sup></b>	<b>No. Shifts</b>	<b>Principal Tasks</b>
4hrs (e+/e-)	0.5	For witness bunch studies
8 hrs (e+/e-)	1	For solenoid studies

<sup>1</sup> Machine Studies Classifications:

- EC – Electron Cloud
- LET – Optics Correction and Low Emittance Tuning
- IBS – Intra-beam scattering studies
- 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 period or access)

<sup>2</sup> Attach additional pages for experimental description if needed

<sup>3</sup> Indicate other machine work that is required in preparation for this machine studies experiment.

<sup>4</sup> Indicate the principal shift topics and estimated number of shifts required

