# CesrTA Machine Studies Task Overview

## *I. Experiment Description*

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|---|---|---|
| **Experimental Topic** | RFA Characterization Measurements at 2.085 GeV | |
| **Classification**[*] | EC | |
| **Coordinator/ Experimenters** | J. Calvey | W. Hartung, J. Makita |
| **Primary Goals** | Characterization of vacuum chambers with EC mitigations at 2.085 GeV, including chambers in 15E and 15W installed Summer 2012. | |
| **Description**[†] | Route: CTA_2085_12W_DMTL_BIGD<br>Energy: 2.085 GeV<br>Species: Positrons and electrons<br>Chicane ON (19200 CU)<br><br>Bunch configurations :<br>1×45, 14 ns: stop for voltage scans at total currents of 34 mA, 56 mA and maximum<br>1×20, 14 ns: stop for voltage scans at total currents of 56 mA, 100 mA, 150 mA, and maximum current (target 200 mA, if possible)<br>9×1, 280 ns: stop for voltage scans at total currents of 34 mA and maximum current<br><br>If extra time is available:<br>1×20, 4ns: stop at 56 mA and maximum current<br>1×45, 4ns: stop at 34 mA and maximum current<br>1×45, 42ns: stop at 23 mA | |
| **Special Needs/Requests** | Needs preparation of injection conditions and pre-check of location in tune plane for long train operation. L3TR- 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** |
| 8 hours | 1 | Measurements described in description section above. |
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[*] 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** |
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[**] 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