Structure and Liftoff In Combustion Experiment (SLICE)
Website: http://spaceflightsystems.grc.nasa.gov/Advanced/ISSResearch/MSG/SLICE

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Engineering Team: ZIN Technologies, Inc.

Objective:
♦ SLICE significantly extends the SPICE investigation by introducing additional objectives that relate to flame stability and structure rather than the smoke point.
♦ The SLICE objectives will provide experimental results that will allow optimization of the ACME Coflow Laminar Diffusion Flame experiment, increasing its scientific return.

Relevance/Impact:
♦ Improved design capability through the validation of combustion models over a wider parameter range.
♦ Improved understanding of and ability to predict heat release and emission in microgravity fires.

Development Approach:
♦ The SLICE experiment will use the on orbit SPICE Experiment Assembly to conduct the SLICE science.
♦ The SPICE Engineering model hardware is used for SLICE ground testing purposes.
♦ Crew required to set up and operate the experiment. Video and data down-linked to the ground for evaluation.
♦ SLICE is scheduled to launch on Shuttle STS-133/ Flight ULF-5 and operate during Inc 26-27 on board ISS in the Microgravity Science Glovebox facility.

Objective:

Accommodation (carrier) | Microgravity Science Glovebox
---|---
Upmass (kg) (w/o packing factor) | 18
Volume (m$^3$) (w/o packing factor) | 0.096
Power (kw) (peak) | 0.05
Crew Time (hrs) (installation/operations) | 23 hours crew time
Autonomous Ops (hrs) | N/A (all hands on crew ops)
Launch/Increment | ULF-5/Inc 25

Project Life Cycle Schedule

<table>
<thead>
<tr>
<th>Milestones</th>
<th>SCR</th>
<th>RDR</th>
<th>PDR</th>
<th>CDR</th>
<th>SR/DR</th>
<th>Fit Safety</th>
<th>FHA</th>
<th>Launch</th>
<th>Ops</th>
<th>Return</th>
<th>Final Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual/ Baseline</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>8/1999</td>
<td>4/2010</td>
<td>5/2010</td>
<td>6/2010</td>
<td>9/2010</td>
<td>Inc. 26/27</td>
<td>OPS + 4 m</td>
<td>Return +12m</td>
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Revision Date: 05/11/2010