## Military Aircraft

### Detailed testing capabilities

<table>
<thead>
<tr>
<th>Model type</th>
<th>Model rigging</th>
<th>Wind tunnel</th>
<th>Typical test program</th>
<th>Test objective</th>
<th>Mach number range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full model. Typical scale: 1/4.</td>
<td>Straight sting. Fin sting.</td>
<td>S1MA</td>
<td>• α sweep polars (range = 45°). • β sweep polars (range = 20°).</td>
<td>• Pressure distribution. • Wake measurements. • Aircraft control qualities.</td>
<td>M&lt;1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• Accurate drag measurements. • Structural loading.</td>
<td></td>
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<tr>
<td>Air intake model. Typical scale: 1/8 to 1/4.</td>
<td>High angle of attack device (range 110°). With / without ejector. Mass flow control and measurements units. Internal rake (steady, unsteady).</td>
<td>S1MA</td>
<td>• Internal flow characteristics. • α sweep polars. • β sweep polars.</td>
<td>• Air intake distortion and recovery (steady, unsteady). • Drag measurements. • Flow surface pressure distribution.</td>
<td>M&lt;1</td>
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<tr>
<td>Store separation model.</td>
<td>CTS mounting rig.</td>
<td>S1MA</td>
<td>• Store trajectory simulation. • Predefined grid program.</td>
<td>• Store separation analysis.</td>
<td>M&lt;1</td>
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<tr>
<td>Drop test model.</td>
<td>Straight sting.</td>
<td>S1MA</td>
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<td>Drop trajectory camera recording.</td>
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<tr>
<td>Full model with combustion simulation.</td>
<td>Top wall mast mounting.</td>
<td>S1MA</td>
<td>Fuel injection variations.</td>
<td>• Infrared signature. • Jet flow analysis.</td>
<td>M&lt;1</td>
</tr>
<tr>
<td>Full model. Typical scale: 1/16.</td>
<td>Specific model rigs. α range 25° (standard). α range 46° (special device). β range 35° (special device)</td>
<td>S2MA</td>
<td>• α and β polars.</td>
<td>• Pressure distribution. • Wake measurements. • Aircraft control qualities.</td>
<td>0.2&lt;M&lt;3.1</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>• Accurate drag measurements. • Structural loading. • Store load measurements</td>
<td></td>
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<td>Model type</td>
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<tr>
<td>Air intake model. Typical scale: 1/4 in supersonic conditions and 1/7 in transonic conditions.</td>
<td>Standard sting holder or high angle of attack device (range 46°). With / without ejector. Mass flow control and measurements units. Internal rakes (steady, unsteady)</td>
<td>S2MA</td>
<td>• Internal flow characteristics. • $\alpha$ sweep polars. • $\beta$ sweep polars</td>
<td>• Air intake distortion and recovery (steady, unsteady). • Drag measurements. • Flow surface pressure distribution</td>
<td>0.2&lt;$\text{M}$&lt;3.1</td>
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<tr>
<td>After body.</td>
<td>Side wall mounted. Primary and secondary cold jet simulation.</td>
<td>S2MA</td>
<td>Mass flow variations</td>
<td>• Accurate drag measurements with jet simulation. • Pressure distribution.</td>
<td>0.2&lt;$\text{M}$&lt;3.1</td>
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<tr>
<td>Full aircraft model. Store model.</td>
<td>CTS mounting rig.</td>
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<tr>
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<tr>
<td>Generic models for research programs.</td>
<td>Sting mounted.</td>
<td>S3MA</td>
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<td>0.1&lt;$\text{M}$&lt;5.5</td>
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<tr>
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<td>F1</td>
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<td>Aircraft maneuverability.</td>
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<tr>
<td>Radome scaled down model.</td>
<td>Sting mounted, specific rig.</td>
<td>S3MA</td>
<td>Analysis of rain or sand impact.</td>
<td>Erosion effects.</td>
<td>0.1&lt;$\text{M}$&lt;1.3</td>
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<tr>
<td>Nozzles / afterbodies tests with heated core and secondary floors</td>
<td></td>
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<td>nozzle and afterbody performances</td>
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