**ICARUS SATELLITE TAG**

*Draft Data Sheet*

<table>
<thead>
<tr>
<th>PHYSICAL PROPERTIES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mass</strong></td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Operating Temperature Range</strong></td>
</tr>
</tbody>
</table>

**SCIENCE**

<table>
<thead>
<tr>
<th>Measurement/Sensors</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPS position and velocity, 3D-acceleration (timed sample), heading in 3D (based on magnetic field vector), temperature</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Acquisition Scheme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configurable by tele-command</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 GB (equivalent to approx. 4 Mio GPS locations)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data Acquisition Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overcast conditions: 6-12 GPS fixes/d plus sensor data</td>
</tr>
<tr>
<td>Sunny conditions: Rapid GPS fixes according to sunlight</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data Readout</th>
</tr>
</thead>
<tbody>
<tr>
<td>Via satellite (ISS, within 60 deg N/S latitude)</td>
</tr>
<tr>
<td>Arctic/Antarctic species: Data stored in memory, satellite readout when tag is within 60 deg N/S latitude</td>
</tr>
</tbody>
</table>

**COMMUNICATION TO SATELLITE**

<table>
<thead>
<tr>
<th>Uplink/Downlink Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>402.25 MHz / 468.1 MHz (global ITU permission)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data Downlink</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tag commands</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data Uplink</th>
</tr>
</thead>
<tbody>
<tr>
<td>220 byte user data per contact</td>
</tr>
<tr>
<td>(e.g. 14 GPS positions incl. velocity)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transmission Data Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual or historical data, selectable by tele-command</td>
</tr>
</tbody>
</table>

**COMMUNICATION TO HANDHELD DEVICE OR BASE STATION**

<table>
<thead>
<tr>
<th>Establishing Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Possible every 15 minutes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data Transmission</th>
</tr>
</thead>
<tbody>
<tr>
<td>User data @ 2.7 kbyte/s for max. 15 min (depending on battery charge)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Recovery</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF (‘ping’) homing + LED</td>
</tr>
</tbody>
</table>

*True Scale Model*