Secure data from sensor to web

- Hardware
  - Sensors
  - Dataloggers
  - Custom turnkey solutions

- Remote Communication
  - Mobile network
  - Satellite

- Data availability
  - Web presentation
  - Data storage
  - API solutions

- Services
  - Installation
  - Maintenance
  - Support
Support our customers in a broad field of markets

- Meteorology
- Climate specific measurements
- Water Quality and environmental monitoring
- Renewable energy
- Plant physiological measurements
- Geotechnical
- Hydrogeology
- Hydrology
Snow measurements

Depth
- Ultrasonic
- Laser
- Guided radar

Water content (SWE)
- Gamma radiation
- Snow pillow
- Snow weight

Surface Temperature
- Passive IR technology
- Laser

Reflected light/solar radiation
- Thermopile radiation

+++ precipitation, soil moisture, snow drift, flux +++
Snow depth

**Ultrasonic**
- Low power consumption
- Measures an area and not a single point
- Cheaper technology
- Not as precise as laser (±1 cm)
- Might need replacement of sensor membrane

**Laser**
- High accuracy (±5 mm)
- Little or no maintenance
- Only a single point measurement
- High power consumption

**Multipoint Laser**
- Very high accuracy (±3 mm)
- Measures over an area (36 points)
- Little or no maintenance
- High power consumption
## Snow Water Equivalent

<table>
<thead>
<tr>
<th>Snow Weight</th>
<th>Snow Pillow</th>
<th>Gammasensor</th>
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</thead>
<tbody>
<tr>
<td>+ Good measurement range</td>
<td>+ Requires less comprehensive groundwork than snow weight</td>
<td>+ Few negative physical sideeffects</td>
</tr>
<tr>
<td>+ Few negative physical effects</td>
<td>+ Cheapest solution</td>
<td>+ Easy to install</td>
</tr>
<tr>
<td>- A lot of groundwork</td>
<td>- Challenges with ice bridging</td>
<td>- Limited range (600mm SWE)</td>
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<tr>
<td>- The size limits the available locations</td>
<td>- Environmental risk, puncturing</td>
<td></td>
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</table>

[https://www.it-as.no/sno-vann-ekvivalent-swe-snow-water-equivalent/](https://www.it-as.no/sno-vann-ekvivalent-swe-snow-water-equivalent/)