TESEO-DRAW firmware is a multi-sensor data fusion hub for ST’s Teseo family of ICs. Thanks to filtering and predictive algorithms, TESEO-DRAW augments the user’s positioning experience in terms of accuracy and availability, especially when the GNSS signal is degraded by environmental conditions (tunnels, urban canyons, indoor parking and multilevel highway junctions).

The vehicle’s position, height, heading and velocity are calculated using a Kalman filter, which fuses information coming from GNSS satellites with data coming from sensors such as gyroscopes, accelerometers, odometers and temperature sensors. TESEO-DRAW is provided bundled with ST’s Teseo II and III GNSS multi-constellation receiver ICs.

**KEY FEATURES**
- Flexible solution, supporting different configurations:
  - Classic
  - CAN gyroscope
  - Mixed
  - Differential Wheel Pulse (DWP)
  - Sensors over UART
  - Free mount capability
  - Automatic sensors and temperature compensation
  - 3D dead reckoning
  - Map matching feedback

**TARGETED APPLICATIONS**
- Emergency call (eCall and ERA-Glonass)
- In-dash navigation
- Usage-Based Insurance (UBI)
- Anti-theft
- Car-to-car communication
- Fleet management
- Open road tolling (ORT)
- Vehicle tracking
### USE CASES

- **Open sky**: Good GNSS
- **Tunnel**: No GNSS
- **Multi-layer parking**: Poor GNSS
- **Urban canyon**: Poor GNSS
- **Multi-layer street**: Poor GNSS

### FIRMWARE CONFIGURATION

<table>
<thead>
<tr>
<th>NAME</th>
<th>YAW RATE SENSOR</th>
<th>DISTANCE SENSORS</th>
<th>OTHER SENSORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLASSIC</td>
<td>MEMS gyroscope</td>
<td>Discrete odometer</td>
<td>Discrete reverse signal</td>
</tr>
<tr>
<td>CAN GYRO</td>
<td>CAN gyroscope</td>
<td>CAN odometer</td>
<td>3-axis accelerometer</td>
</tr>
<tr>
<td>MIXED</td>
<td>MEMS gyroscope</td>
<td>CAN odometer</td>
<td>Temperature sensor</td>
</tr>
<tr>
<td>DWP</td>
<td>CAN Differential Wheel Pulses</td>
<td>CAN odometer</td>
<td>CAN reverse signal</td>
</tr>
</tbody>
</table>

### EVALUATION TOOLS

TESEO-DRAW firmware is available on demand and works in combination with any Teseo evaluation kit.