

MAX6: New-generation Inertial Sensors

Background

Inertial sensors —sensors that detect movements such as acceleration and rotation speed— are being **used in a growing number of applications**. In the 1980s they were used mainly in high-end inertial applications for the defense and aerospace industries, then in the 1990s they spread to the car industry when MEMS accelerometers became important components of airbags, ESPs, and other components. Today inertial sensors are also prevalent in the healthcare industry (e.g., pacemakers) and process instrumentation (e.g., seismic measurements).

Integrated three-axis accelerometers have been developed over the past few years for use in many applications, including:

- Portable devices (GSM, PDAs, laptops, etc.)
- Games
- Hard drive protection against impact (e.g., when a device falls to the ground)
- Tilt-controlled drop-down menu navigation
- Navigation assistance
- Power up for Energy-saving

Partners

Corporate

Thales

SME

Movea - **Tronics Microsystems**

Research laboratories

CEA-Leti

Key figures

Budget: €6.4 million

Duration: 3 years

Human resources allocated: 34 FTE

Innovation

The MAX6 project aims to **develop a new inertial sensor with robust multi-axial performance** that combines into one or two elements measurements of the following:

- **Three acceleration axes**
- **Three rotation speed axes**

The entire sensor will be a **system-in-a-package (SiP)**, as integrated as possible, including the control electronics and movement capture software.

