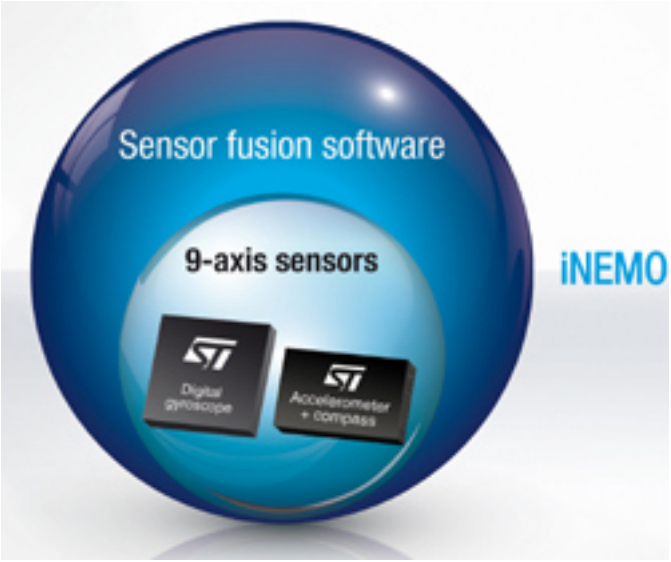
# STMicro improves MEMS with iNemo

ECN Europe

STMicroelectronics unveils its next-generation iNEMO engine which enables a new level of motion-sensing applications on smart consumer devices. The fusion of motion-sensor data gives smartphone handsets, tablets and gaming devices new utility and features.

The iNEMO's advanced filtering and predictive software engine integrates the outputs from a 3-axis accelerometer, 3-axis gyroscope and 3-axis magnetometer. Fusing these sensors data through sophisticated algorithms, the device delivers dramatically more accurate and reliable sensor performance – the kind of performance now in demand by makers of next-generation smart consumer devices for a host of new motion-based applications.




**[1]** ***Picture: STMicroelectronics***

For many current applications, such as freefall detection, screen rotation or pedometers, a single MEMS accelerometer meets their system requirements. However, a new class of advanced applications is emerging, for example: location-based services, enhanced motion-based gaming, pedestrian dead-reckoning for indoor and multi-floor navigation, robotics or human-body tracking. These applications require multiple MEMS sensors, together with advanced software, to achieve better overall system performance in terms of accuracy, resolution, stability and response time.

The iNEMO Engine software integrates a set of highly sophisticated adaptive algorithms for prediction and filtering. The software takes data from the outputs of various motion sensors in smart consumer devices and integrates it so that the sensor outputs augment each other, leapfrogging what individual sensors can do alone. The software can correct for magnetic distortions registered on the magnetometer, dynamic distortion measured by the accelerometer, and inherent

drift over time of the gyroscope. This protects the accuracy of heading information, removes pointing inaccuracies and drift-problems, and virtually eliminates timeouts for calibration.

It is available now to major consumer manufacturers, upon request via the usual ST sales channels, for integration into leading mobile platforms in a two-chip sensor solution (LSM303DLHx e-compass and the L3G4200D gyroscope). Advanced new mobile devices using ST's iNEMO Engine multi-axis sensors are expected to be in production at leading consumer manufacturers before the end of the year.

SOURCE [2]

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