THE WORLD ISN'T FLAT:
GO BEYOND SINGLE-AXIS PLANAR NAVIGATION
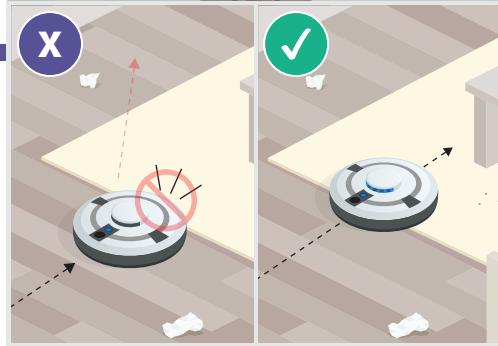
CEVA | **hillcrestlabs**

Why multi-axis IMU's outperform single-axis gyros

Robotic vacuum cleaners are all about simplifying lives by saving time. Cleaners that get lost or stuck in corners, miss spots on the floor or run out of battery before returning to their dock lead to dissatisfaction with your product. But innovations in sensor technology can enable robots to clean smarter and more effectively. And, multi-axis sensors are leading the charge.
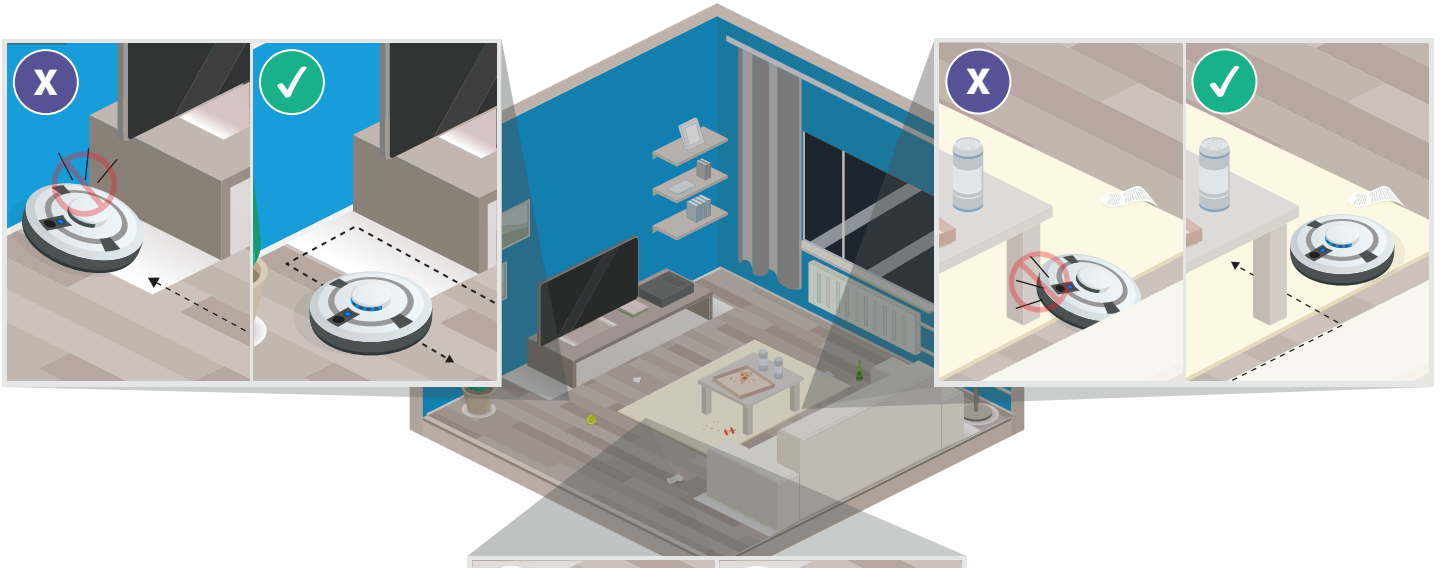
TODAY:
SINGLE-AXIS GYROSCOPES

- Technology that helps guide movement on a flat plane
- Most basic technology, resulting in user complaints such as robots that get stuck on uneven surfaces, chair legs, or even baseboard and shoe molding
- Robots lose reliability and context when moving over surface changes

With multi-axis technology, you can deliver:

- High accuracy planar heading and tilt orientation information
- Contextual sensor information to enhance robot decision making
- Additional "soft sensors" (bump detector, tilt/stuck detection) that leverage multi-axis IMUs with specialized algorithms and software

Taken together, this leads to higher end-user satisfaction and adoption for your products.

TOMORROW:
MULTI-AXIS IMUs

- ✓ Advanced technology delivers heading, tilt and orientation information which provides a complete, real-world picture to **enable better AI decision making**
- ✓ Smarter navigation by fixing common heading issues, **enabling robots to conquer obstacles** and uneven or transitioning surfaces without losing accuracy
- ✓ **Better user experience** with more efficient navigation leading to lower power consumption, shorter cleaning times and fewer interruptions
- ✓ **Enables soft sensors** to cost-effectively address user experience challenges

## CEVA's Hillcrest Labs Business Unit Is Your Partner for Robotic Sensors

With Hillcrest Lab's multi-axis sensor products, you'll get extra built-in features in addition to highly accurate heading performance. Whether you need an IMU for navigation or as a crucial component of your LiDAR or visual SLAM navigation system, our products will push your products to the next level.

FSP200: A cost-effective, processor with built-in 6-axis sensor fusion designed for use with a variety of low-cost and high-performance sensors

BNO085: An elegant 9-axis SiP (system-in-package) with on-board sensors and built-in sensor fusion that delivers accurate heading and tilt information for more precise real-world positioning
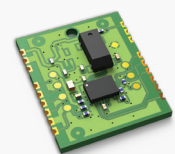
FSM300: A 9-axis sensor with built-in sensor fusion incorporated onto a turn-key, pre-calibrated module enabling faster time-to-market and a simplified BOM

Ready to discover how a multi-axis IMU sensor can help you realize your next-gen robotic cleaner?
Contact us to learn more or read our eBook to learn how multi-axis sensors provide a competitive edge.

FOR MORE INFORMATION: