aerospace

Customer:

Delft Dynamics, Delft, the Netherlands

Website:

www.delftdynamics.com

Product Xsens:

MT9 Inertial Measurement Unit

(predecessor of the MTi Inertial Measurement Unit)

Project:

Control system for unmanned mini helicopter

Delft Dynamics develops control systems for manned and unmanned vehicles. Delft Dynamics focuses on the most challenging control: control of an unmanned helicopter. Thanks to Xsens Technologies' MT9 Inertial Measurement Unit, the helicopter can hover without intervention of an operator. The MT9 is the predecessor of the MTi.

Delft Dynamics develops control systems of different types of manned and unmanned vehicles. Their first product is an unmanned helicopter (UAV) which is an excellent carrier for cameras and other sensors for use in aerial filming, aerial overview (e.g. fire, border control), routine tasks (e.g. traffic inspection) and chemical, courier or dangerous tasks. The advantages of price, emissions and usability of a small helicopter above a manned helicopter are huge. Current goal is to provide autonomous control to the unmanned helicopter, so that the operator can focus completely on the mission.

The MT9 is a very important element in the helicopter. Without orientation, the helicopter would never be able to correct its orientation autonomously if needed. The MT9 data is used to compute pitch, roll and heading. The open communication code (that is easy to understand and to modify) of the MT9 Software

Development Kit makes it possible to synchronize the MT9 with GPS. The combination of the accelerometers, magnetometers and gyroscopes makes the orientation accurate during static operation, such as hovering, but also when the helicopter is moving. The low power consumption, size and weight of the MT9 are essential. A higher grade orientation sensor would just not fit in the helicopter or would decrease the operating time, because of higher power consumption. Because of the low price of the helicopter, the MT9 with its attractive pricing is a natural choice.