





The logo for xsens is centered on a background of overlapping blue and dark blue geometric shapes. The 'x' is orange, and the 'sens' is white. The font is a clean, modern sans-serif.

xsens



## About Xsens Technologies B.V.

- Leading innovator since **2000**
- Global presence:
  -  The Netherlands: Enschede (HQ)
  -  United States: Los Angeles
  -  China: Shanghai & Hong Kong
  -  India: Bangalore
- Global partners & distributors
- >100 employees, growing
- Defining patents in the field of 3D motion tracking
- ISO 9001:2015 certified
- Part of mCube Group



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Gyroscope



Accelerometer



Magnetometer



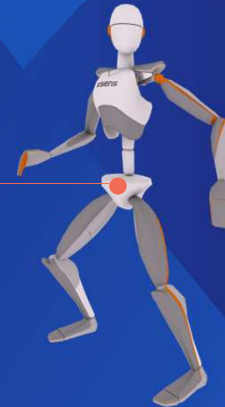
GNSS / RTK



Barometer



Sensor  
Fusion



e.g. MVN, Xsens DOT™



MTi Series™: Motion Tracker – Industrial grade

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Opening business partner pre-ordering  
for MTi-680G(-Starter Kit)

“Most affordable industrial grade GNSS/INS now also  
with centimeter-level positioning accuracy,  
CAN-interface, in an IP68 rated enclosure”



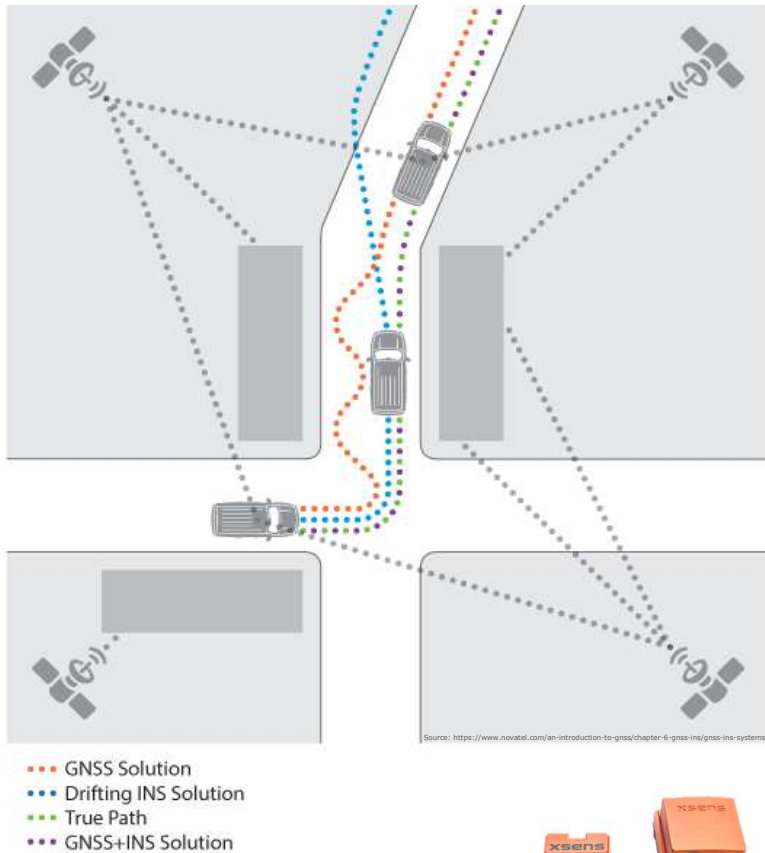
# MTi Portfolio 2020



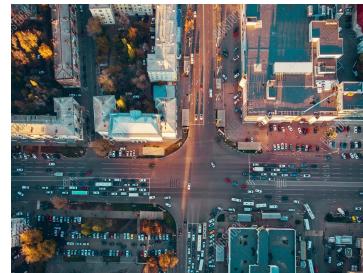
Commercial launch: **4<sup>th</sup> of May**  
Available for shipment: **1<sup>st</sup> of July**

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# GNSS/INS: combining inertial orientation data (INS) with GNSS Position data Robust position data for real-time navigation



..under good GNSS conditions...



..also dealing with difficult/denied GNSS conditions

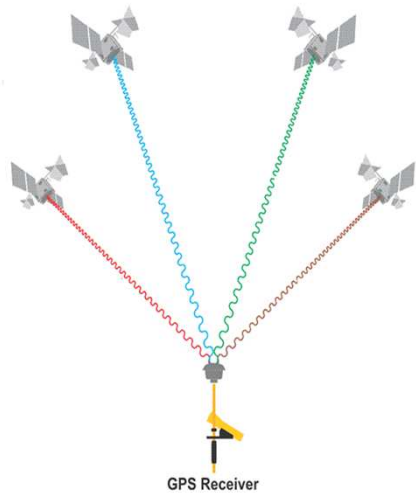
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MTi-7 MTi-670 MTi-G-710

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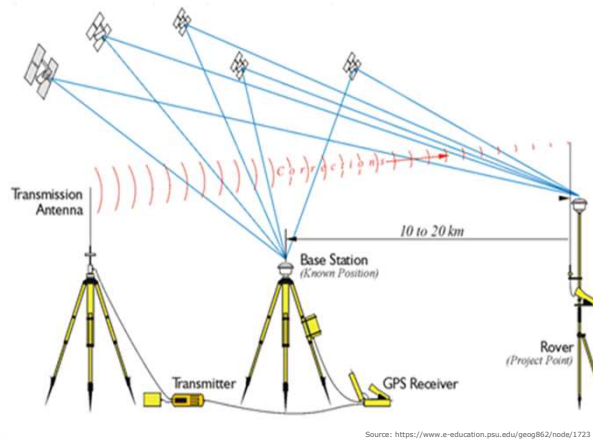
## GNSS/INS with industrial-grade orientation + **cm**-accurate positioning



Conventional GNSS  
"meter-accurate"



MTi-G-710



RTK GNSS  
"centimeter-accurate"



MTi-680G

3D Roll/Pitch/Yaw/Heading  
+ 3D Position/Velocity

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## How to receive the RTCM correction messages?



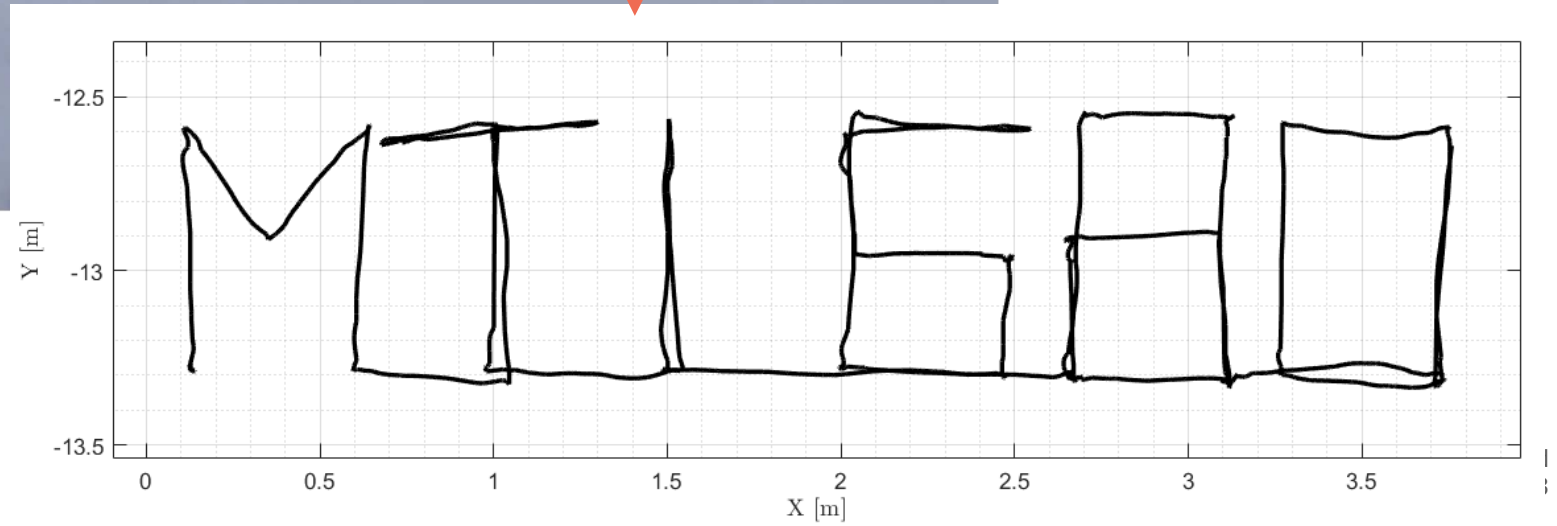
### 1. Quick start:

- NTRIP client included in MT Manager / SDK, as part of the MTi-680G-SK
- Corrections sent to MTi-680G via main connector

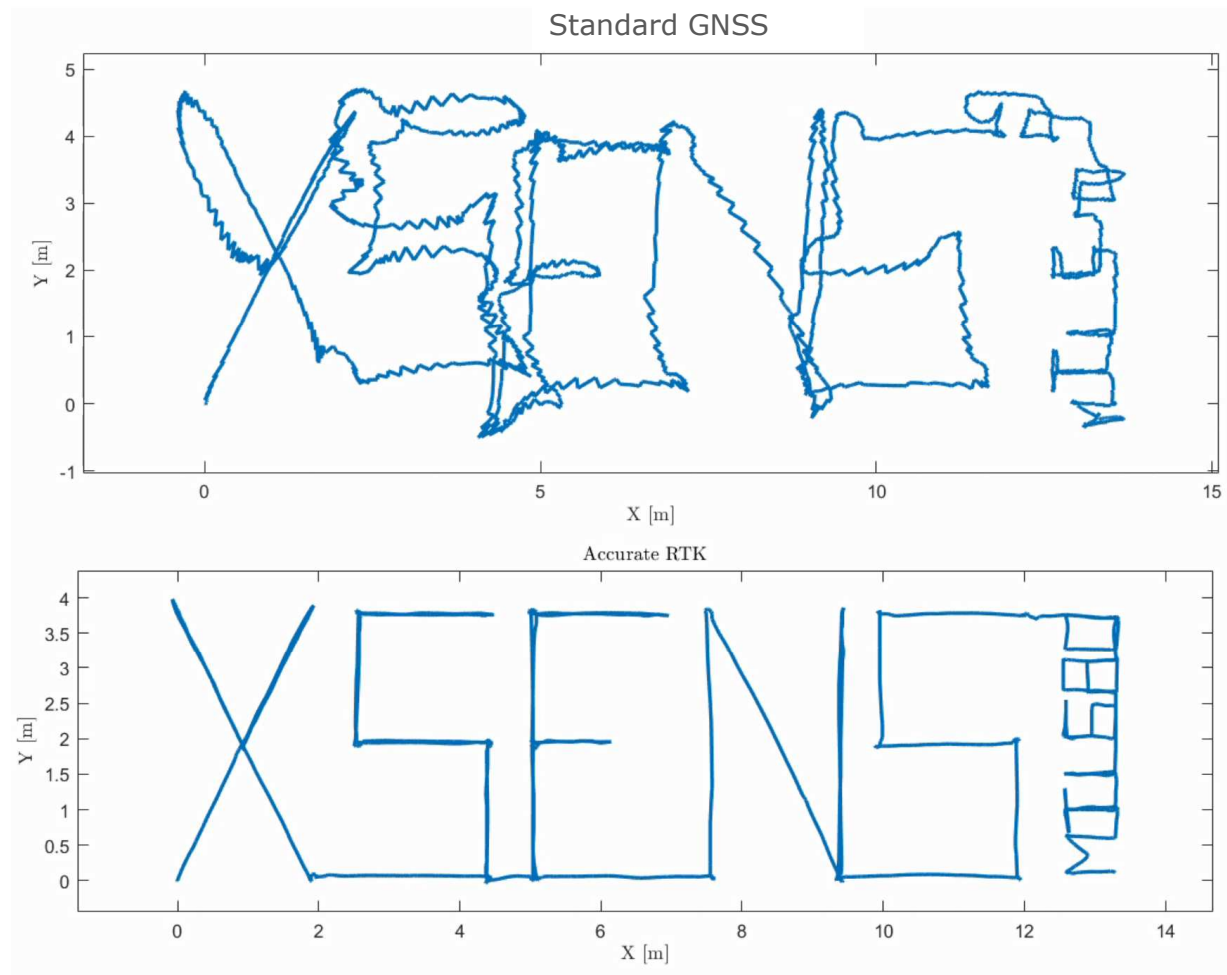
### 2. Correction messages received via custom(er) setup:

- Dedicated 4-pins RTCM connector (RS232). The customer can connect a radio (-module) or any other type of hardware to this connector
- Xsens provides a 4-pins cable with the MTi-680G-SK (Starter Kit), but specific external hardware (e.g. radio setups) for the RTCM correction is customer furnished.

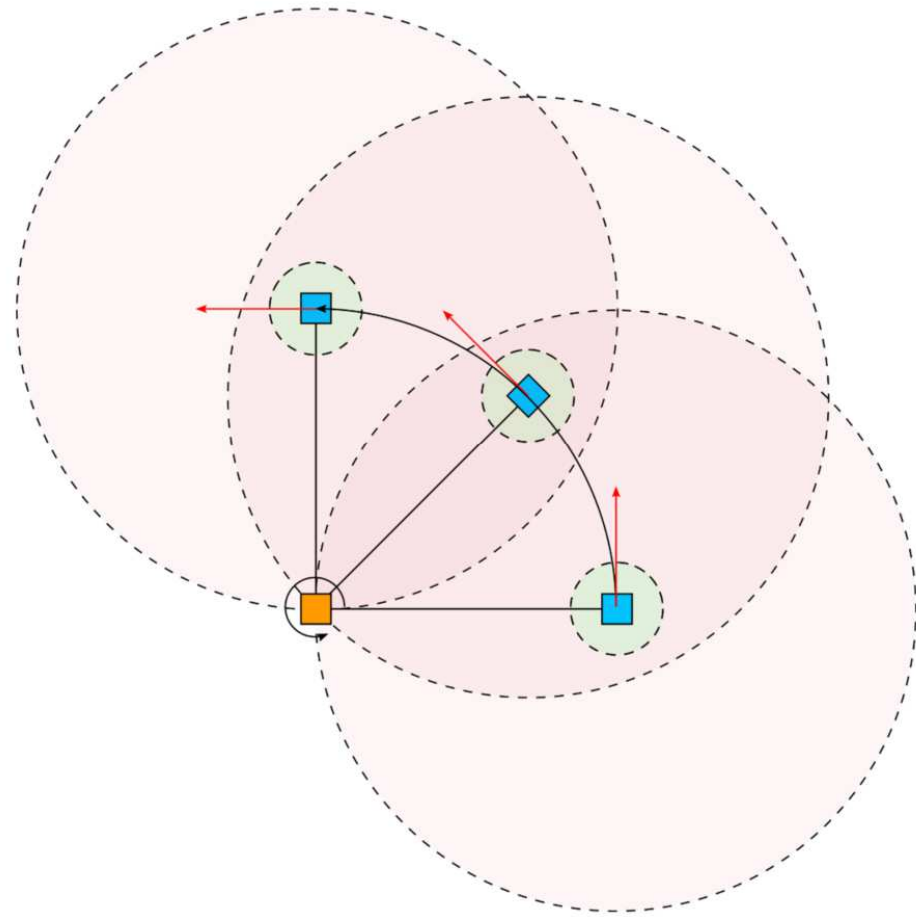
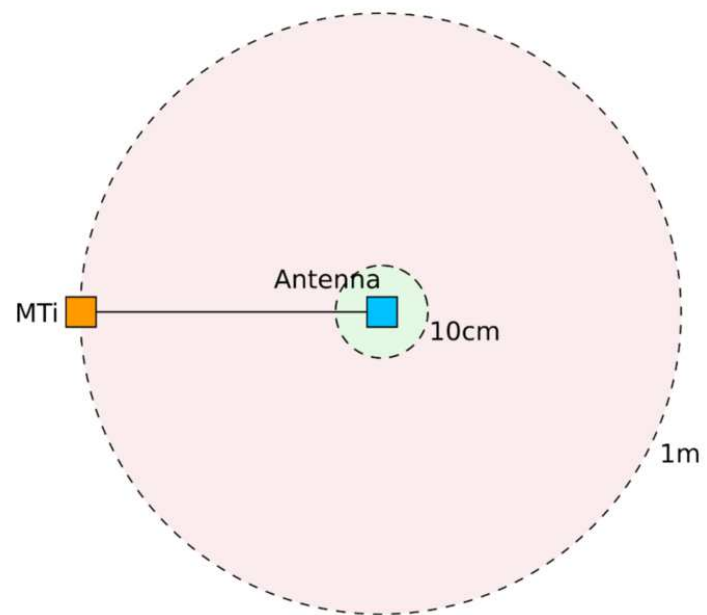




## Difference between standard GNSS vs RTK-GNSS raw data (unfiltered)



## Lever arm correction





610/620/630/670  
OEM modules



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## MTi 600-series enhancement

### Available as:

- MTi-610 IMU
- MTi-620 VRU
- MTi-630 AHRS
- MTi-670 GNSS/INS (external GNSS)
- **MTi-680G GNSS/INS +RTK**

### Specs, industrial grade:

- **0.2 °** roll/pitch
- **<1.0 °** Yaw / Heading
- **8 °/h** Gyro in-run bias stability
- Incl. **CAN** interface
- Rugged IP68 housing
- Output up to **2000Hz**  
(400Hz orientation/position)

### Product Roadmap:

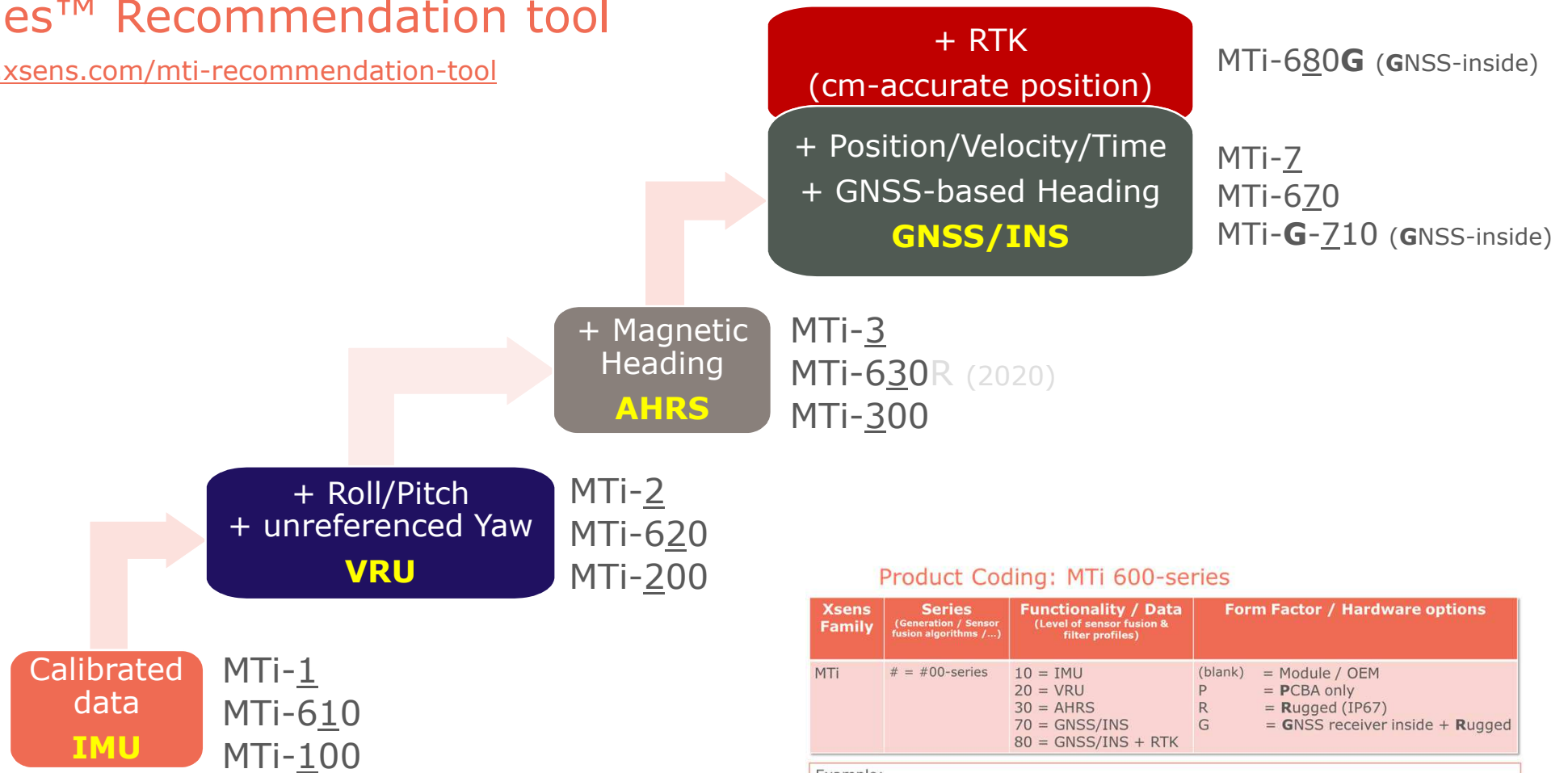
2020 (Q3)

- Robust housing for AHRS: MTi-630R
  - Sept 2020



# MTi-series™ Recommendation tool

<https://www.xsens.com/mti-recommendation-tool>



Product Coding: MTi 600-series

Xsens Family	Series (Generation / Sensor fusion algorithms /...)	Functionality / Data (Level of sensor fusion & filter profiles)	Form Factor / Hardware options
MTi	# = #00-series	10 = IMU 20 = VRU 30 = AHRS 70 = GNSS/INS 80 = GNSS/INS + RTK	(blank) = Module / OEM P = PCBA only R = Rugged (IP67) G = GNSS receiver inside + Rugged

Example:			
MTi	- 6	30	
MTi	- 6	80	G






# Calibration



- All modules delivered are individually tested and **calibrated**
  - Xsens proprietary calibration facility;
  - for a complete range parameters:
    - bias, temperature (-40 to 85 °C), scale-factor, sensor alignment, g-sensitivity,...;
  - all stored in the on-board memory of the device
- During operation, calibration parameters are continuously re-estimated by the MTi on-board processor, to reach the highest performance.
- “End-User re-calibration” after installation in the vehicle/platform for optimized field performance



# The total MTi portfolio (10-series also still available for a while)

	Accuracies:	Roll/Pitch Static   Dynamic	Yaw	Position   Velocity	Gyro in-run bias stability	Output rate
 1-series	MTi-1 IMU	-	-	-	10 °/h	Orientation & position: <b>100 Hz</b>  Calibrated Data: up to 1000Hz
	MTi-2 VRU	0.5 °   0.8 °	AHS*	-		
	MTi-3 AHRS	0.5 °   0.8 °	2.0 °	-		
	MTi-7 GNSS/INS <small>(external GNSS receiver)</small>	0.5 °   0.5 °	1.5 °	✓		
 600-series	MTi-610 IMU	-	-	-	8 °/h	Orientation & position: <b>400 Hz</b>  Calibrated Data: up to 2000Hz
	MTi-620 VRU	0.2 °   0.5 °	AHS*	-		
	MTi-630 AHRS	0.2 °   0.5 °	<1.0 °	-		
	MTi-670 GNSS/INS <small>(external GNSS)</small>	0.2 °   0.5 °	<1.0 °	✓		
	MTi-680G GNSS/INS <small>(GNSS inside)</small> <b>Q3 2020</b>	0.2 °   0.5 °	<1.0 °	RTK 2 cm   0.05 m/s		
 100-series	MTi-100 IMU	-	-	-	10 °/h	Orientation & position: <b>400 Hz</b>  Calibrated Data: up to 1000Hz
	MTi-200 VRU	0.2 °   0.3 °	AHS*	-		
	MTi-300 AHRS	0.2 °   0.3 °	1.0 °	-		
	MTi-G-710 GNSS/INS <small>(GNSS inside)</small>	0.2 °   0.3 °	0.8 °	1 m   0.05 m/s		

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\* **Active**  
**Heading**  
**Stabilization**

✓ Yes, but depending on  
 accuracy of external GNSS receiver

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# CONTACT

- Technical questions/documentation:
  - BASE: <https://base.xsens.com/>
  - [info@Xsens.com](mailto:info@Xsens.com)

**BASE**  
by xsens

Online Technical Support

- BASE is an online support platform with a community forum and a knowledge base on 3D motion tracking technology and products.
- The primary goal of BASE is to make Xsens customers more successful by providing a platform to exchange information.
- <http://base.xsens.com>



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