



Wireless level radar for high-res measurement networks



SENZ2 MAKES THE INVISIBLE VISIBLE

- SenZ2 BV is a young company with extensive experience in sensor technology.
- Based in The Netherlands, founded in 2015 by Rail Partner Gruppe (Switzerland)
- Our vision: Delivery of actionable information (KPI's) for data driven operations.
- Design, manufacturing, sales and operation of sensor systems

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SenZ2

Products & Data Services

Powered by the latest radar and IoT technologies

SenZ2 drives turnkey supply-grade radar measurement solutions. Our #1 priority is to provide reliable and accurate sensor data for actionable monitoring, ready for your operations!

94V-0 SFL 40V0

Real-time video
Recommendations
Artificial intelligence

Product: Wireless Level Radar

Product Features

- Sensor Type** / FMCW Radar, single chip
- Radar Frequency** / 60 GHz ISM frequency band
- Application Types** / Fluids and solids: water, wastewater, chemicals, waste materials, food, feed, bulk solids, etc.
- Measurement Range** / 250mm – 5000mm (0.82 ft. – 16.40 ft)
- Accuracy** / 2 mm, 1.5% error (0.078 inch)
- Beam Angle** / 12° adjustable
- Protection Class** / IP68
- Connectivity** / wireless, global coverage
- Update frequency** / 1 – 24 messages a day
- Measurement Frequency** / 1 – 96 measurements a day
- Logging storage** / 10,000 measurements
- Battery life-time** / 1 – 10 years (depending on usage)



order code: ALR05-2G001

We Love Radar!

The VL05-2G is the first truly wireless radar level transmitter to measure water levels and fill levels remotely. With the latest 60GHz radar-on-chip technology the VL05-2G is unbeatable when it comes to accuracy, reliability and versatility. This accessible radar technology immediately obsoletes known technologies as ultrasonics and pressure. It's long battery-life, global connectivity and robust, submersible housing make this

Downloads

Specification Sheet: Wireless Level Radar VL05-2G





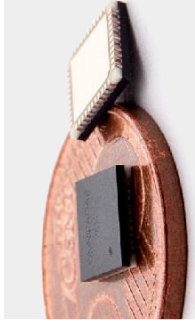
SENZ2 BACKGROUND

- TNO Defence Safety & Security
- Radar, Sonar, Optical Imaging
- Network and communication technologies
- Artificial Intelligence (RUG)
- Industrial Design & Engineering (TUDelft)

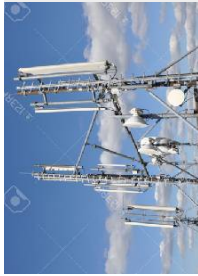




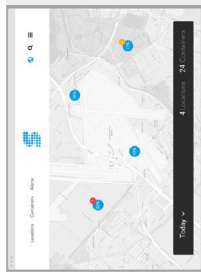
Stand-alone **radar** enabling HIGH-RES networks



latest low-power
radar technology



connected by default



State of the art platform &
dashboards





#1 Measurement principle



	Floater	Pressure	Ultrasonic	Radar
All (weather) conditions	+	+	o	+
Free of maintenance	-	-	+	+
Accurate & reliable	+	o	o	+
Stagnant & running water	-	o	+	+



New standard for high-res measurement networks

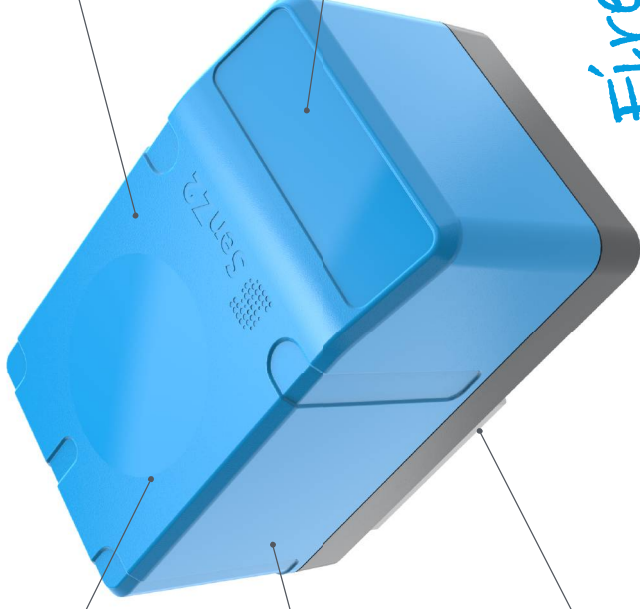
highest quality measurements

stand-alone operations

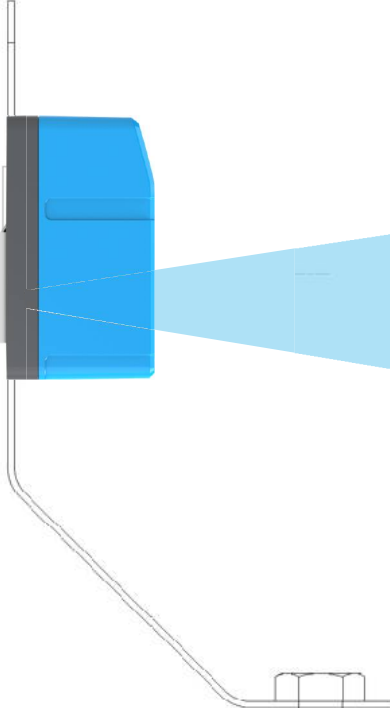
smart data connection

sustainable & low on maintenance

minimal installation costs



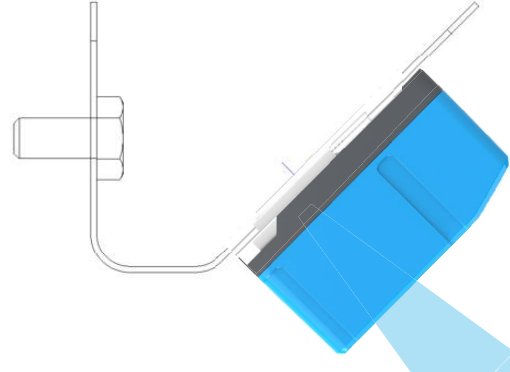
Fire & Forget!



measurement range: 250mm - 5000mm
accuracy: 2 mm
beam angle: 12°



water level & wave height*



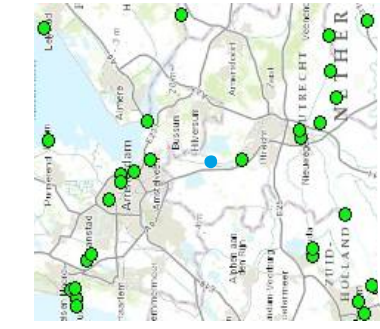
water flow rate*



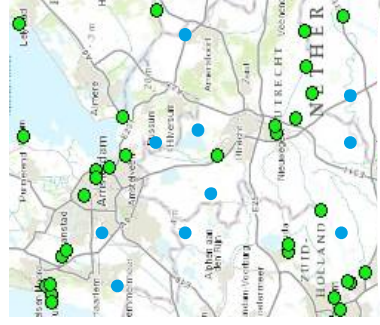
* functionaliteit om golfhoogte en stroomsnelheid te meten is beschikbaar in Q4 2017 / Q1 2018



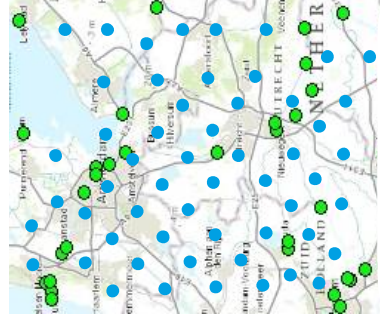
Number of installations with €750 / month (TCO)



1



10



50

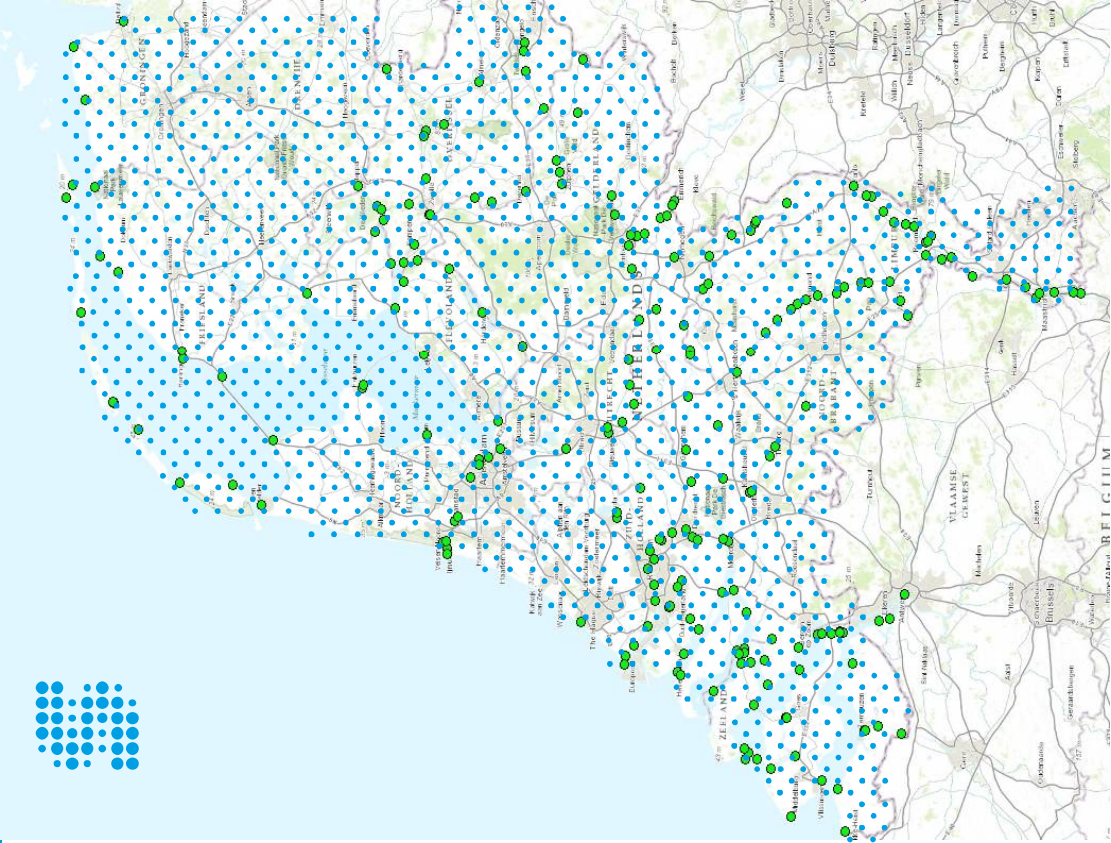
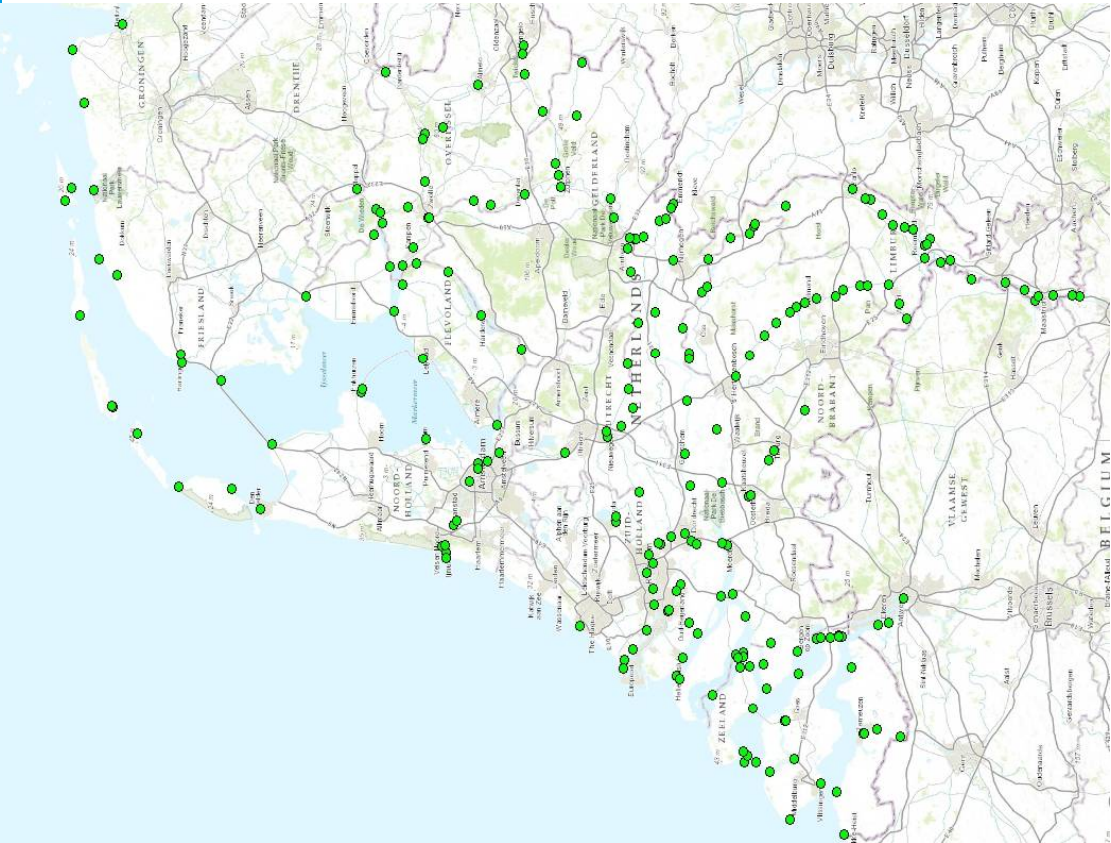




High Resolution Network



water system knowledge
calibrating computer models
legislation & cooperation
operational management





Thank You!



SenZ2

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Annex



Evaluatie van radarniveau- en golfhoogte-meters

rapport RIKZ/IT-98.040

Auteurs:

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Th. Sijben
H. Cox

datum:

november 1998



Ministerie van Verkeer en Waterstaat
Directie- en Centrum Rijkswaterstaat
Rijksinstituut voor Kust en Zee/RIKZ

“Uit het project is naar voren gekomen dat radar een zeer goed bruikbare techniek is, die de genoemde instrumenten in vrijwel alle gevallen kan vervangen.”

“De voordelen van een radar-instrument zijn:

- Gering onderhoud door contactloze meetmethode,*
- Eenvoudige meetopstelling door meting direct op het water*
- Meetmethode en techniek zijn robuust.”*

“Radar is een geschikt meetprincipe voor het meten van de waterstand.”

“Radar is een geschikt meetprincipe voor het meten van golven.”



Locations Assets Alerts Michiel Q ⚙️

1D 1W 1M

Waterniveau W

Temperature

30°C

19.13°C

10°C 0°C

Jun 3 Jun 4 Jun 5 Jun 6 Jun 7 Jun 8

Water level

Jun 3 Jun 4 Jun 5 Jun 6 Jun 7 Jun 8

Currently

Reference level

-142mm

asset type: water level sensor height above water: 1330 mm

Edit asset Remove asset Attach sensor Detach sensor



LEVELRADAR

Reliable measurements

Based on radar technology, SenZ2 introduces the most accurate, cost-effective water level monitoring solution in any conditions the roughest. LEVELRADAR delivers level measurements you can trust.

Wireless monitoring

Our global telecom solutions provides reliable connectivity from our LEVELRADAR, even in wells together with it's long battery-life, applicable and profitable in almost every water management process.

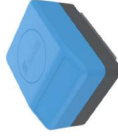
Real-time insights

With it's secure on-line cloud platform, real-time insights are delivered all times. Water management processes can be monitored in real-time with alerts, analyses, planning and reporting.



Remote monitoring of water levels

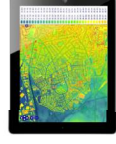
Based on the wireless LEVELRADAR SenZ2 provides a complete solution for remote and real-time monitoring of water levels. For the water sector real-time insights in water levels is key. Accurate level-measurement data can result in improved policy, reduction of risks and direct cost savings. The LEVELRADAR can monitor waste water and overflow, surface water and groundwater in remote places without any power source. With radar as the most reliable and cost-effective level measurement technology, there is no reason to accept a lack of insights in water levels.



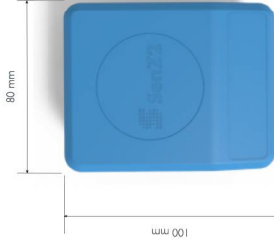
LEVELRADAR



Real-time insights



Data integration



PRODUCT SPECIFICATION LEVELRADAR

Product Features	
Sensor Type	PNOW, Radar
Applications	Surface water, waste water, ground water
Integration	Integration with existing systems
Connectivity	Wireless (global)
Calibration	Automatic, before every measurement, remote, over the air
Setup & settings	
Measurement technology	
Radar Frequency	60 GHz
Measurement Range	2 to 100 m
Accuracy	± 2 mm, ± 1.5% error
Sample rate	12 samples per 24 hour (adjustable)
Radar beam angle	12°
Additional sensors	GPS, temperature, 3 axis accelerometer
Environment	
Ambient Temperature Protection Rating	-50°C to +85°C IP 68
Mechanical Features	
Housing Materials	PTFE, stainless steel
Weight	350g
Mounting	Integrating base plate, single hand side & lock



PRELIMINARY