

AccuLinx

Breakthrough water meter
system for Master Meter

SAGENTIA



Master Meter is a leading Automatic Meter Reading (AMR) technology innovator and water meter manufacturer, delivering technology focused solutions to the North American utility market. It approached Sagentia to design the mechanics for a new water meter register. The result, *AccuLinx*, is contact-free and allows a common type of water meter to be read remotely for the first time.

Initially, Master Meter approached Sagentia to design the gearbox and enclosure mechanics for a water meter register based on a third party's six wheel encoder. The brief called for a register that could fit on a wide range of meter bodies, from small domestic units to street mains.

As part of a two-year development, Sagentia carried out various phases of work on the design, in particular looking at the number of gears. Through a combination of maths and mechanics, we reduced the tooling outlay for the gearbox variants by 90 per cent – saving Master Meter millions of dollars. At this stage, we also changed the design to include eight wheels, rather than six.

During this development, the Sagentia team came up with an idea for a new sensing principle for the absolute encoder, which reads the position of the wheels in an

odometer. This technology was named 'Gray Wheels'*. The idea was presented to the client and they saw the potential to develop a real breakthrough product. An exclusive licence deal was signed with Sagentia for the use of the technology.

The project resulted in *AccuLinx*, an 8-wheel absolute encoder without batteries that connects the water meter to third party Automatic Reading (AMR) systems. The 8-wheel system provides utility companies with a way of accurately, remotely and electronically reading the mechanical odometer for billing purposes and detecting leaks.

The new system is extremely low power and is 'non-contact', creating no friction. As a result it enables use with multi-jet systems, which make up about half of the water meters used in the world.

AccuLinx was launched at the American Water Works Association's ACE 2008 conference. Our ability to design and develop both the intelligent science and the detailed mechanics behind the product enabled a smoother route to market for a real breakthrough development. The project generated more than \$1m in consulting fees for Sagentia and the ongoing licence deal for the core technology will generate \$4.5m for the company over a number of years. The Gray Wheels technology continues to be developed for potential applications in other industry sectors.

*The patent application has been granted

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