

ProShift brings automatic shifting to Di2 system

By Matt Wiebe

SUGAR LAND, Texas — As soon as Shimano's first Dura-Ace Di2 system hit the market, electrical engineers were hacking the circuit to offer automatic shifting. But Baron Controls' ProShift is the first system to become available.

Like earlier efforts, ANT+ compatible ProShift reads various sensors — power, heart rate, VO2 max, cadence, gear selection and speed — and using proprietary algorithms and rider feedback, it creates an automatic shifting profile to maximize rider efficiency.

"ProShift is reading the sensors and can shift up to twice a second to keep a rider in their highest-performance gearing. All the rider needs to do is concentrate on the ride," said Ennio Mastracci, Baron Controls' senior vice president.

Cyclists have a variety of fitness devices that can be set up for target power or heart rate zones and provide a light or

Another advantage of running ProShift on a hand cycle is there is no need to run gear cables or wires to the cranks, since the shifting is automatic.

"The unit can be set up for training. For example, if you want a high-cadence workout, just reset the cadence shift point. If you want to keep your heart rate low, just tweak the shift point. The unit gives you the training ride you are looking for," Mastracci said.

And he noted that ProShift can turn an inex-

pensive indoor trainer into a sophisticated training tool by allowing a rider to train to cadence, power or heart rate zones as the ProShift works the gears to make this happen.

Mastracci thinks racers will be a hard sell — they like to be in control of their gears, and there are race situations in which it might be advantageous to be outside a target zone for a while. Still, he believes the gain in efficiency is too important to dismiss out of hand. **BRAIN**



Baron Controls' ProShift head unit reads data from various sensors and shifts the Di2 system automatically to maximize rider efficiency.

sound alarm to indicate the rider needs to shift to remain in the target. ProShift simply automates this process, shifting before a rider has even gone outside a target.

The company currently offers six versions of its \$999 head unit targeting casual cyclists, hand cyclists and trike riders, tandem riders and racers, as well as two versions for time trialists. The company is working on a mountain bike version but expects it is still a year away from the market.

ProShift plugs inline with Di2 shifters, and Di2's shift buttons control ProShift. It does not have any activation buttons itself. It is easily switched out of the system to revert back to manual control, and just as easily it can be switched back in.

"Most time trialists and triathletes have certain data they monitor — heart rate, power output and VO2 — and shift to keep this data where they want it to be. ProShift can do this all automatically using our algorithms for the rider," Mastracci said.

"By the end of a time trial a racer is fatigued and may not be making the best gear choices, or is too tired to shift as much as they should. With ProShift doing the shifting they are maximizing their performance throughout the race, tired or not," he added.

The system so impressed hand cycle and trike retailer Bike-on.com that it became a reseller of the system, offering its customers ProShift builds. The company also is prototyping a ProShift head unit for Alfine Di2, popular with hand cyclists.

"Many cyclists have hand limitations that make pressing buttons difficult. For a hand cyclist they are not only shifting while pedaling, but braking too," Mastracci said.

"Some hand cycles are set up to brake when the rider reverses the crank. You can imagine shifting down and then pedaling backward to brake — chain derailment is common, and they are never in the gear they want," he added.

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