



Platform  
Evaluated  
Case Study  
The Intel-powered  
classmate PC

# When The Going Gets Tough, Classmate PC Keeps Going

**Facing the world's toughest deserts, ultra-marathon runners with RacingThePlanet\* couldn't find a laptop that could keep up - until they found an Intel-powered classmate PC**



"Having a device like the classmate PC really affords a lot of opportunities in the future. At this point in time, there is no better device out there that satisfies RacingThePlanet's requirements. If you're looking for something lightweight and easy to use, this is it."

Mary Gaddams, CEO,  
RacingThePlanet

<b>Company</b>	RacingThePlanet manages regular endurance competitions including the 4 Deserts*, a series of gruelling, self-supported 250 kilometer foot races through four of the world's most extreme deserts, and Beyond-RacingThePlanet, a similar annual race that moves to a new country each year.
<b>Product evaluated</b>	The Intel-powered classmate PC
<b>Challenge</b>	The extreme weather of the races, and the need for portability, required a lightweight laptop capable of withstanding punishing environmental conditions.
<b>Results</b>	Originally designed to withstand the rigours of heavy student use, classmate PCs survived heavy usage during week-long races through some of the world's coldest, driest, hottest, and windiest deserts - all of which had proved too harsh for normal laptops.
<b>Impact</b>	Supported by satellite communications and power generators at each campsite, competitors now have regular Internet access - allowing them to email friends and family, blog about their experiences, and access information sources while camped in what is literally the middle of nowhere.
<b>Next steps</b>	Classmate PCs have become standard issue for the race organizers, who are exploring new ways to use their capabilities to enhance the race experience for competitors as well as the millions of people following the races from around the world.

## Finding a laptop as tough as the competitors

For extreme athletes who thrive on pushing themselves to new limits, there are few challenges more appealing than the 4 Deserts series, a sequence of 250 kilometer self-supported foot races through China's Gobi Desert, Chile's Atacama Desert, Egypt's Sahara Desert, and the windswept plains of Antarctica.

Held in what are the windiest, driest, hottest and coldest deserts on Earth, these races - organized by RacingThePlanet Limited, founded in 2002 by 15-year ultra-marathon runner Mary Gaddams - have quickly gained a following amongst ultra-marathon runners, more than 500 of whom sign up for what has become one of the most prestigious events on the endurance racing calendar. Four times a year, they gather to join a race that winds its way through remote areas dotted with ancient cultures and a broad variety of unique fauna and flora.

Supporting the race is a ground crew of around 30 volunteers and staff members, including a half-dozen medical personnel, who carry generators, solar panels, water, and other essential equipment between stopovers.

Because of the remoteness of the races, communication with the outside world is essential for both emergency situations, and for regular operational issues such as the ongoing coverage that RacingThePlanet posts throughout the races. While comprehensive coverage had been available through satellite data services such as INMARSAT's Broadband Global Area Network (BGAN) - which is accessible over most of the planet using a small and portable modem - the race organizers had trouble finding a laptop



computer that could last the duration of the races.

Gadams and her team watched in frustration as one laptop after another succumbed to the blowing sand, brutal heat and cold, and punishing treatment. Keyboards were gummed up with sand, fierce winds pushed dirt and sand deep inside the laptops, and extreme temperatures pushed the systems to the limit of their design parameters – all too often with disastrous results.

"We've always needed to incorporate laptops into our races," Gadams explained, "but we found that either they got beaten up and ruined, or with all the dust and sand they stopped working after the second day."

"We travel light and fast during the races, and we simply cannot use gear that doesn't work," she added. "I had looked into ruggedized notebooks but they were very heavy and so expensive that it would be less expensive to buy a normal laptop and wreck it at every race."

In 2007, Gadams was in rural Vietnam to plan the upcoming RacingThePlanet competition in the area. An Intel staff member, who was involved with Intel's WiMAX wireless trials in the area and was interested in the race, told her about the lightweight, solid-state design of the Intel-powered classmate PC.

Originally designed as a durable, easy-to-use laptop for use in schools in emerging countries, the classmate PC is a lightweight device with an extremely durable casing. To improve reliability, the classmate PC replaces mechanical hard drives with solid-state disks (SSD), which are inherently less susceptible to physical extremes. Gadams immediately recognized its potential value on the races, and Intel supplied several prototype classmate PCs, which joined several other brands of laptops Gadams was testing on Sahara Race in 2007.

### Many laptops enter, one laptop leaves

The Intel-powered classmate PCs quickly proved themselves as their light weight, durable design and lack of problem-prone mechanical storage saw them keep working despite the worst the deserts could throw at them.

Gadams recalled one night during the Atacama Crossing 2008, when a ferocious wind storm pummelled the camp and destroyed tents with near-tornado force winds; when the wind cleared, their six classmate PCs remained intact, sitting on a table and ready to use "like nothing had happened," she said. "Even though they're so lightweight that you can hold several of them in one hand, they're able to withstand more dust and damage than your average laptop."

Since their early successful trials, the Intel-powered classmate PCs have become integral to the success of the events. Set up in a tent at each daily campsite along the race's length, the PCs are used by contestants to send and receive email, and to blog about their racing experiences.

Competitors also check the results of each race stage using the devices, supplanting a previous paper system that saw more than one laser printer give out in the dry conditions. "We tried a variety of printers but because deserts are so dry, the ink cartridges would quickly dry out and fail," said Gadams. "The only option was to offer

all of these things on the laptops."

Staff also rely heavily on the classmate PCs for tasks such as race administration and, for the accompanying journalist, the devices provide a means for posting official race coverage updates from the field each day. The RacingThePlanet medical team maintains its own blog, sharing information with the world about the competitors' condition and other issues such as their research into physiological response to extreme conditions.

All told, Gadams said, the reliability of the classmate PCs has allowed organizers to automate enough tasks to eliminate the need for one whole volunteer. The classmate PCs have outlasted the organizers' satellite connections after occasional problems with the satellite modems. When this happens and a populated area is relatively close, organizers use the classmate PCs' built-in Wi-Fi connection to download email in batches, then store the competitors' replies in the PCs for sending once they are online again.

With basic communication issues resolved, RacingThePlanet is exploring other uses for the classmate PCs. For example, they could potentially give contestants access to detailed electronic maps that would be useful in anticipating the course ahead. Planned enhancements to the race Web site will allow outside observers to track individual participants as they traverse the courses.



**For more information on the Intel-powered classmate PC and the Intel World Ahead Program, refer to the following resources:**

**Intel World Ahead Program**  
[www.intel.com/worldahead](http://www.intel.com/worldahead)

**Intel Classmate PC Site**  
[www.intel.com/intel/worldahead/classmatepc/](http://www.intel.com/intel/worldahead/classmatepc/)

**Classmate PC Portal**  
[www.classmatepc.com](http://www.classmatepc.com)

