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A Better View from Afar

The Internet has been a boon to scientists, letting them tap into high-power telescopes and video equipment remotely. But sometimes bandwidth fluctuations and Web hiccups can wreak havoc on real-time research. That’s where RICE (Remote Instrumentation Collaboration Environment) comes in. A collaboration between the Ohio Supercomputer Center and Ohio State University’s Center for the Accelerated Maturation of Materials, RICE can block repeated commands from users when there is network congestion. With an interface similar to videoconferencing software, RICE uses special algorithms to fine-tune bandwidth and avoid mistakes.—Erik Rhey

REMOTE RESEARCH RICE’s interface.

Safe at Any Speed?

Do smart cars result in safer roads—or more distracted drivers?

You’re driving around a blind corner when, suddenly, alerts start beeping, a light flashes on the dash, and your car slows and pulls to the right. Is something wrong with your vehicle? No. The car has simply detected an oncoming vehicle and taken evasive action.

Such a futuristic scenario may become reality thanks to Vehicle-to-Vehicle (V2V) communications systems. Researchers at Ford, General Motors, Honda, and Toyota are working together on V2V systems that would use GPS to warn of stopped cars ahead, alert drivers to cars in blind spots, and prevent collisions. And Infiniti has already introduced the EX35, the first car that uses a forward-looking camera, independent wheel brakes, and yaw controls to pull the vehicle back on course when drivers drift out of a lane.

“These systems can already demonstrate collision avoidance and share data between cars without line of sight,” says Tom Patterson, CEO of Command Information, a consulting firm that uses the networked vehicle “Veesix” to demonstrate how cars could communicate safety information and vehicle diagnostics. Command Information is working on next-generation Internet Protocol Version 6 (IPv6) solutions for improving reliability.

But could a series of new warning lights, seat vibrations, and alert sounds end up distracting drivers and causing accidents rather than preventing them? “That’s an issue,” admits Don Grimm, a senior researcher at GM. “We need to think about how often such warnings are activated and determine what should be shown to the driver.”

Gerald Donaldson, senior research director at Advocates for Highway and Auto Safety, agrees. “What you want is for the car to automatically brake,” he adds, “rather than just warning you about dangers ahead.—John R. Quain