



This month at
**SPECTRUM
ONLINE**

www.spectrum.ieee.org

YOU TELL US

These six projects in the works could be big hits—or big misses. Cast your vote for the next great thing.



Special Issue: **WINNERS & LOSERS 2007**

For the fourth year, we present our technology hits and misses. **16**

Winner/Telecommunications

18 NOTHING BUT NET

How many communications protocols does it take to run a global network? One.

By Steven Cherry

Loser/Energy

22 CORN-O-COPIA

Using coal to make ethanol shortchanges the biofuel's environmental promise. By William Sweet

Winner/Wireless

24 RADIO REVOLUTIONARIES

Vanu's new cellular base station is all about the software. By Jean Kumagai

Loser/Aviation

28 GROUNDED

This protean airplane may fly, but on land it's an accident waiting to happen. By Sandra Upson

Winner/Transportation

30 THE OMNIVOROUS ENGINE

Gasoline, ethanol, natural gas—why pick one if you can use them all? By Erico Guizzo

Loser/Displays

34 NOT READY TO WEAR

Dial-a-shirt display will not be on anyone's 10-best-dressed list. By Harry Goldstein

Winner/Software

36 CURE FOR THE MULTICORE BLUES

Software eases programmers' pain and unleashes the power of multicore chips. By Harry Goldstein

Loser/Biomedical

40 TONGUE VISION

A vibrating tongue device for the blind is not what the doctor ordered. By Sandra Upson

Winner/Semiconductors

41 MASTERS OF MEMORY

A Swiss firm's technology could quintuple the memory in microprocessors. By Samuel K. Moore

Loser/Internet

45 WHAT'S THE LATIN FOR "DELUSIONAL"?

If Microsoft can't beat Google at search, how can Paris and Bonn? By Philip E. Ross

ON SPECTRUM RADIO: GAMES WITH FEELING

Barry Silverman is a game designer who not only imbues his cybernetic agents with powers of mind but also with weaknesses of the flesh. Because they hunger, worry, hate, and feel, they simulate humans better than anything else that silicon has spawned. Listen to Spectrum Radio's interview.

ALSO ONLINE:

- Webcasts • Radio • News
- Audio Downloads • Podcasts
- Jobs • Career Accelerator
- IEEE Xplore® digital library
- Interviews • Opinions

COVER: John MacNeill
THIS PAGE: LEFT: Original photograph: Joshua Dalsimer; Photo-illustration: Sean McCabe; RIGHT: Max Whittaker/WPN