

News Wire from Idaho National Engineering and Environmental Laboratory
News Wire from Idaho National Engineering and Environmental Laboratory
- Home of Science and Engineering Solutions

Welcome! This is a special edition of the **INEEL News Wire**, which delivers news about current advances in research and technology at the multiprogram Department of Energy's Idaho National Engineering and Environmental Laboratory (INEEL), located in Idaho Falls, Idaho and operated by Bechtel BWXT Idaho for the U.S. Department of Energy. Published by the INEEL Communications Directorate, it delivers news to your desktop and is available at <http://www.inel.gov/newswire/>, along with an archive of all previous editions.

To SUBSCRIBE or UNSUBSCRIBE, see end of e-mail for directions.

Available Informational Materials on Change Detection System -

VIDEO VIA SATELLITE: INEEL's Video Information Package on CDS will be available via satellite on Thursday, September 25th:

- a.. 10:00-10:30 ET & 14:00-14:30 ET
- b.. SBS 6 / Transponder 16 (KU-Band)
- c.. Downlink Frequency: 12092 Vertical

For Technical Information on Video Feed Only - 208-869-5605.

Materials on Website: Feature, digital photos, fact sheet, video news release are available at <http://www.inel.gov/featurestories/08-03cds-medical.shtml>

Content of September 24, 2003, INEEL News Wire:

September 24, 2003 - R&D Magazine recognizes CDS as top technology

INEEL researchers develop security and medical imagery breakthrough

Idaho Falls - R&D Magazine's September edition, distributed this week, recognizes key imagery research conducted at the Idaho National Laboratory as among the top 100 most promising technologies for 2003.

National security monitoring, medical imagery analysis, home surveillance, and other important image manipulation tasks are greatly enhanced because of a key breakthrough by INEEL researchers.

Scientists at the U.S. Department of Energy's Idaho National Engineering and Environmental Laboratory have developed the Change Detection System, a technology that highlights slight differences between digital images. In fact, lead researcher Greg Lancaster convinced doctors of the program's power when he used it to compare scans of his own brain after he'd had a tumor removed.

Initiated as research to develop national security technologies and funded by DOE's Applied Technology Program, CDS soon had dozens of potential applications. It is quick, easy and affordable.

Previously, image analysis involved comparing side-by-side images, but discerning minute differences between two digital images can be nearly impossible. Computers even struggle with the task. The best technology has used the flip-flop technique, which capitalizes on the visual reflex that draws our eyes toward motion. This requires that both pictures be shot from the exact same position, which is often impossible.

CDS, developed by INEEL's Lancaster, James L. Jones and Gordon Lassahn, combines the strengths of rote computer analysis with the powerful human reflex elicited by the flip-flop technique. The powerful CDS program aligns images, to within a fraction of a pixel, from hand-held or otherwise imprecise cameras, compensating for camera angle differences. Then, flipping between two seemingly identical images aligned by CDS instantly reveals once imperceptible differences.

The alignment process takes only seconds and the software is simple enough to be operated by a 10-year-old child. The 350 KB program can operate on a standard PC or even a handheld computer.

Applications of CDS also include environmental monitoring, parental and security awareness, forensics, field research and much more.

As CDS hits the marketplace, it joins 28 previous R&D 100 winners developed at INEEL in the last 18 years. This is the 7th year in a row that INEEL has won a spot in the R&D 100 ranking.

More information on CDS, including photo illustrations, can be seen at www.inel.gov. Points of contact: Keith Arterburn, 208-526-4845, artegk@inel.gov, Nicole Stricker, 208-526-5729, strinl@inel.gov

To SUBSCRIBE/UNSUBSCRIBE, follow this link and follow the instructions:
<http://eloi.inel.gov/guest/RemoteListSummary/ineel>

Points of contact for the INEEL News Wire include Keith Arterburn, editor (artegk@inel.gov, 208-526-4845), John Walsh (jhw@inel.gov, 208-526-8646), and Ray Grant, Listserv Administrator (granre@inel.gov, 208-526-4186).

Privacy Notice: INEEL News Wire does not release or exchange e-mail addresses. This prevents unwanted e-mails from being sent to you, helping you manage your mail.