

*cover article:*

Mobile computing improving EH&S management

Mobile computing has been around for a long time, but EH&S professionals are just beginning to realize its potential. Judging by the recent increase in the number and variety of applications, the EH&S software industry has embraced mobile tools as an integral component of the future of EH&S automation. But the market still seems to be a few years behind the technology.

Most of us think of mobile computing in terms of laptops or notebooks, or those Personal Digital Assistants (PDAs) that are nothing more than a battery-operated Rolodex and appointment calendar. Despite the computer industry's continuing efforts to make lighter, more portable, and more powerful tools, most people continue to view these devices as an extension of the desktop with limited potential for hardcore field work. We listen to the rhetoric about new capabilities for data entry and retrieval using a variety of handheld devices, but remain skeptical that these promises can actually be realized.

Meanwhile, many analysts are predicting an increase in the use of mobile computing, especially in the business sector. According to IDC, the market for smart handheld devices will grow from 12.9 million units in 2000 to over 63.4 million by 2004 (see <http://www.idc.com/Hardware/press/PR/PS/PS022601pr.stm>). These include devices like PDAs, smart phones, keypad handhelds, and pen-based notepads. Some offer wireless access to the Internet or to a local area network (LAN), while others can be used in the field to collect data, then transported back to the office to upload the data to a PC.

According to an article in *PDA News*, companies that incorporate handheld computing devices into their daily business operations have experienced "greater efficiency and faster fulfilment of client requests due to: reduced double handling of information; greater interaction with ordering systems; and a reduction in the number of mistakes made due to keying errors." [See http://www.pdanews.com.au/index.php?dir=10018&show=11050&layout=10010&extra_news_offset=7.]

Despite these advantages and recent advances in technology, EH&S applications for mobile computing have evolved more slowly than the industry as a whole and have yet to achieve broad acceptance in the market. But that's all about to change. If you've been following the *EH&S Software News* over the past few issues, you may have noticed that the number and variety of information systems that include applications for handheld computers or PDAs is on the rise. With the right combination of software and hardware, you can now track hazardous materials, record sampling data, audit EHS compliance, or retrieve material safety data sheets (MSDSs) whenever and wherever they are needed, anywhere within your facility or out in the field. Following are some examples.

Hazardous Material/Waste Tracking

Handheld computers/PDAs are helping **Penn State** Environmental Health and Safety (EH&S) personnel enhance field operations and automate government-mandated record keeping (see <http://www.psu.edu/ur/2000/hazwaste.html>). Harold L. Brungard III, a member of Penn State's hazardous waste (HazWaste) management staff, has been participating in the field tests of the new paperless system. He estimates that the PDAs are saving 5 to 10 hours a week of data entry time as well as improving data management accuracy. Brungard explains that the HazWaste staff respond to between 75 and 150 requests to collect and manage hazardous waste each month. The materials include flammable solvents, corrosives, toxic materials, and other hazardous wastes. On average, the team picks up about 500 containers and more than 15,000 pounds of waste each month.

With the new system, University personnel who want to dispose of waste material, visit the University's EH&S website where they complete an online form to send information about the waste electronically to the EH&S department. The information from a completed form is then loaded into a database. The HazWaste staff uses the database to generate an itinerary for their daily collection rounds. They can also download information from the database into their 3-Com Palm III computers and edit this information while en-route.

The **Rockwell Science Center** developed a prototype, called *EnvInv*, for inventorying hazardous materials using a PDA (see <http://www.rpal.rockwell.com/~corinne/MobilePDA.html>) According to Corinne Clinton Ruokangas, a member of the technical staff, "PDAs serve as low-cost information collectors - providing a level of accuracy and feedback not available with paper-forms - and support the automatic transfer of data to workstations and central databases. She suggests that "PDAs can also be used as handheld manuals" to display diagrams, suggest scheduling and routing locations, and provide maintenance or diagnostic information to a user in environments where laptops may not be feasible. They can provide "remote access to reference materials which may be hyperlinked."

Data Collection in the Field

PDAs are particularly helpful for recording data in the field. Several software developers are now offering products to meet these needs. For example, **EarthSoft** recently announced the development of *Pocket EQUIS*, for collecting and managing data at the point of generation (see <http://www.earthsoft.com/pocketequis.pdf>). Similarly, **FieldWorker Products Limited** offers *FieldWorker Pro*, which allows relational data collection projects to be developed on the desktop or on a mobile device. Field workers can refer to images stored on the device's desktop, or link data to a specific image, then connect to a GPS receiver to create point, line, and polygon geographic information. The company claims the product can be used with a variety of mobile devices, from laptops to palm tops to smart phones (see <http://www.fieldworker.com/verticalapps.htm>).

Potential data collection applications extend to just about any EH&S-related activity, such as natural resources inventories, water testing, and air emissions monitoring. For example, *Two Dog Forest Inventory Software*, by **Foresters Incorporated**, (see <http://www.foresters-inc.com/html/twodog.html>) is a software suite with data collection, processing, and inventory capabilities. The product is used on handheld and desktop computers to inventory forests and to collect data on flora, fauna, and other site attributes in support of multi-resource inventories and certification.

DataPort, a hand-held data entry unit by **AllMax Professional Solutions Inc.** (see <http://www.operator10.com/dataport.html>) targets the field data collection needs of municipal and industrial wastewater and water treatment facilities. These devices include built-in scanners and fit in your pocket. Users can download data (e.g., material inventories or meters/gauges that must be monitored) from a PC to the *DataPort* device, then use the device to print barcode labels, scan barcodes, enter field data, and upload the information back to the PC.

LEADERS™ LDRS by **Environmental Monitoring Service** (see <http://www.envmonsvc.com/Html/Content/Products/Products.html>) is fugitive emissions software based on a relational database. Features include *LEADERS FieldSmart™* handheld software and *DeskSmart™* desktop software.

Audits/Inspections

Compliance audits and routine inspections offer another potential application for mobile devices. **Locus Technologies** recently introduced such a product (see http://www.locustec.com/press_release/Businesswire041601.htm), called *eSurvey*. *eSurvey* was developed for PDAs using the *Pocket PC* operating system. The application consists of a set of screens (each with pull-down menus), data entry fields, and hyperlinks to other screens and information. After an inspection or audit is complete, all data that an auditor has entered into the Pocket PC can be uploaded to the main database housed on the company's Intranet or the Locus environmental Web portal. This approach is particularly applicable to audits at facilities without Internet or Intranet connectivity or in secure areas where a wireless device would not be allowed. *eSurvey* was tested, and is currently being used by a major aerospace manufacturer in Southern California.

"*eSurvey* puts a valuable and cost-effective tool into the hands of EH&S inspectors," said Neno Duplancic, President and CEO of Locus Technologies. "It provides access to inspection lists and pre-audit questionnaires that traditionally could not be hauled onto the audit floor. No longer do inspectors have to record findings once in the field and, again, enter these same findings into a database or spreadsheet back in the office. Moreover, with a local copy of their EH&S database on their Pocket PCs, auditors have access to historical information they may need when entering a finding. As a result, *eSurvey* streamlines the compliance process, decreases audit time, reduces resources, and dramatically minimizes errors."

Other software for mobile auditing and inspections includes *FieldACE* by **Potomac Hudson Engineering** and *PPM Audit Pro with Palm Link* by Creative Business Solutions, Inc.. *FieldACE* is an inspection and maintenance tracking application for the Palm Pilot (see <http://www.phe.com/fieldace/about.html>). *PPM Audit Pro with Palm Link* (see <http://www.businessrx.com>) is audit and inspection management software that has been enhanced with a Palm conduit to transfer audit and inspection data between the PPM database and the Palm Pilot. The PPM system can also take advantage of a recent add-on to the Palm device, the Kodak PalmPix, a low digital camera that attaches to your Palm. With PalmPix, you can take photos of your inspection findings, save them back to the desktop with your completed inspections, and link the photos through the Supplementary Files feature of the PPM system, to any audit/inspection item.

Providing Information in the Field

Mobile computing is not just for data entry; it can also be used to supply critical data in the field. For example, **Enviryx** recently introduced *My MSDS Manager* to provide chemical hazard information via a secure Internet-based platform. Enviryx maintains the administrative and manual burdens of system administration, management, and maintenance. And, as a value-added service, Enviryx's fully fielded, standardized 16-section MSDS works in conjunction with the Palm Operating System and the Microsoft Windows CE operating system. Employees can download MSDS information directly to their hand-held computer. [See <http://www.enviryxllc.com/PDFs/pda2.pdf>.]

The Future

Currently PDAs can be grouped into one of two broad categories: 1) Palm (which is also licensed to Handspring), and Microsoft's Pocket PC (renamed from Windows CE). Microsoft has licensed Pocket PC to Hewlett-Packard, Compaq, and Casio. Most business applications are addressing both platforms.

IBM and Palm are working together to develop a wider range of business applications for devices that use the Palm operating system (see <http://www.ibm.com/press/prnews.nsf/crawler/23B1E51D2CE9FA528525698A007B8DDC>). IBM's *Superior Wireless Applications* or "SWAP," software is designed to help remote users of wireless handheld devices manage more of their business functions, giving them access to many applications not previously manageable via a wireless device. The new software will allow mobile business executives to trigger customized management tasks on the server by simply "pointing and tapping" on an Internet-ready Palm handheld computer or other handheld device.

According to IDC (see <http://www.idc.com/software/press/PR/GSW010801pr.stm>) the wireless market is creating substantial opportunities for middleware and "businessware" vendors. IDC expects "the need for a reliable, scalable, and manageable software infrastructure to support burgeoning Internet-related activities will cause worldwide revenues for wireless infrastructure software systems (WISS) to jump from \$217 million in 1999 to \$5 billion in 2004." They predict that businessware management systems will generate the most revenue.

According to *ZDNet eWeek* (see <http://www.zdnet.com/eweek/stories/main/0,10228,2676662,00.html>), the next step in the evolution of mobile computing is "the integration of wireless connectivity, which is expected to give handhelds a broad business and consumer appeal on the same scale as mobile phones."

"The biggest growth (in handhelds) remains to be seen," said Emmanuel Klotz, operations manager for Hewlett-Packard's Jornada handheld in Europe. "The key will be the mobile Internet and the implementation of GPRS (general packet radio service) networks."

"Wireless is high on the agendas of most handheld makers." The wireless Internet is expected to deliver revenues of \$230 billion by 2006, according to a study recently released by the research firm Strategy Analytics (see <http://www.strategyanalytics.com/press/index.html> press release Jan 17, 2001, Strategy Analytics Forecasts \$230 Billion Mobile Commerce Market by 2006).

But, the future may not be as bright as some predict. In addition to security and infrastructure issues, such as seamless service, cost is still a major concern. According to *ZDNet eWeek* (see <http://www.zdnet.com/eweek/stories/main/0,10228,2676662,00.html>) wireless technology is still too complicated and expensive to include as a standard feature in a PDA. "Improvements are needed, not only to the text input, voice capability, and user interfaces of handheld devices, but to the Web itself. The current Web design, with its blast-out banner ads, navigational bars and suggestions on locating a user's "three lines that are of interest" won't suffice, says Philip Greenspun, founder of ArsDigita, which builds open-source enterprise application software (see <http://www.zdnet.com/eweek/stories/general/0,11011,2620102,00.html>). "When you take away the user's 104-key keyboard, big mousing surface, and 17-inch display, the Web becomes a painful place," adds Greenspun, who is also head of the Scalable Systems for Online Communities research group at the Massachusetts Institute of Technology."

What the future holds for mobile computing depends a lot on the type of hardware and the infrastructure to support these systems. We should see higher network speeds and even more powerful hardware, but the evolution of wireless data systems has to cross some hurdles to reach its potential. Regardless of well handheld devices communicate on a wireless platform, the advantages of using handheld devices in

the field to deliver data back to a desktop unit will spawn even more applications for EH&S management in the near future.

editorial:

Dear Colleagues,

If you're reading this, the Internet has probably become a routine, possibly even essential, part of your professional life. It's hard to imagine that there are still a few stubborn EH&S professionals who manage to get the job done without the benefit of the Web. And I suspect that most of our industry readers have automated at least a portion of their EH&S functions.



So I was surprised when Elizabeth returned last week from the Responsible Care Conference in Orlando with tales of vast numbers of EH&S managers who not only don't use the Internet, but have not automated any EH&S functions and have no plans to do so.

On the surface, this appears to be good news for software developers, since it seems that there is still a substantial untapped market for EH&S software products. But I can't help but wonder why these folks are so reluctant. Elizabeth had an opportunity to explore the issue with several of the EH&S managers who attended the conference. For the most part, she got the impression that they had tried to automate some activities several years ago, had a bad experience, and concluded that it wasn't worth the effort.

I've heard similar tales from clients for whom I perform environmental consulting work unrelated to software. They complain about the substantial upfront investment and steep learning curve associated with many products. Too often, these sacrifices go unrewarded when a product falls far short of expectations. And, in these times of shrinking EH&S budgets, managers are just too busy to take a risk that the EH&S software industry has improved. [But it has; just read the front-page article.]

So the messages for software developers seem to be to focus on making your software easy to implement and easy to learn, to avoid extravagant claims, and to stress capabilities over technology in your marketing materials.

John W. Donley, Editor

industry news:

Environ.com and ESP Form Alliance

Environmental Support Solutions (Environ.com) and Environmental Software Providers (ESP) have formed an alliance to create a new compliance suite for the environmental industry. Together, the companies plan to create an integrated, modular, web-based environmental management information system (EMIS) based on ESP's *opsEnvironmental* framework. The system's modules will bring together data from permits, manufacturing, and support operations into a single framework that performs calculations, manages reporting obligations, and provides automated alerts.

"With their leverage in the waste, refrigerant, indoor air quality, and health and safety markets, Environ.com is an ideal partner for ESP," said Alex Long, president of ESP. "With this combination of complementary modules, we will be able to provide the basis for a functional, user-friendly EMIS solution, within an enterprise framework, that is unparalleled in the industry."

"We are excited to join a great company like ESP," said Robert Johnson, CEO and president at Environ.com. "Our partnership allows both companies to concentrate on our respective expertise, while delivering to our customers the functionality and flexibility of our products in an enterprise and ASP framework. Our customers will benefit from these cost-effective methods for assuring tracking and completion of environmental requirements."

The companies are co-developing an ASP hosted version of the modules that will be available to clients on a subscription basis.

For more information about Environmental Support Solutions, visit <http://www.environ.com> or telephone (800) 289-6116, ext. 1. For more information about ESP, visit <http://www.esp-net.com> or telephone (650) 949-5900.

Environ.com Acquires Wixel

In related news, Environ.com recently announced that the company has acquired Wixel, Inc., a Denver-based developer of waste tracking, management, and regulatory reporting software.

Wixel, Inc., founded in 1988, was a privately-held company providing hazardous and non-hazardous waste tracking software for generators, brokers/transporters, and RCRA treatment, storage, and disposal (TSD) facilities. The company's current line of software products includes: *PowerLink*, *CorpLink*, *TSDTrax*, *ServiceTrax*, *FieldLink*, and *MiniServiceTrax*. Through this acquisition, Environ.com will be able to integrate the best features of both companies' products to enhance its Waste Manager Software suite.

Robert Johnson, CEO and president of Environ.com said, "Wixel has a reputation for quality software products and outstanding support services. We are excited to bring Wixel's expert knowledge of the waste software industry into the company. We also look forward to adding Wixel's talented key players to our team."

Wix Howard, former president of Wixel and current Vice President of National Accounts for Environ.com, said: "I am delighted to join the management team at Environ.com. The company's strong leadership, excellent products, and unique position in the industry provide the foundation needed to further develop and deliver leading edge environmental compliance solutions. Combining our companies resources strengthens our product line and gives our customers the option of Desktop, Enterprise Intranet Web Browser, and ASP-hosted software solutions."

For more information, visit <http://www.environ.com> or telephone (800) 289-6116, ext. 1.

Insurance Breaks for Software Users

Legends Environmental Insurance Services LLC (Legends) and Environ.com recently announced today a first-of-its-kind agreement whereby users of Environ.com software will be eligible for a reduction in their environmental insurance premiums. This is an exclusive arrangement between Legends and most of the carriers that write environmental coverage, including AIG Environmental® (A++XV), Gulf Underwriters Insurance Co. (A+IX), Royal Surplus Lines (A+XIV), Evanston Insurance Company (A IX), and Century Surety Insurance Co. (A-VI).

According to Environ.com, more than 60 percent of the Fortune 100 companies and thousands of others who are currently using Environmental Support Solution's refrigerant, waste, indoor air quality, and related software will qualify for an immediate return on investment. President of Environmental Support Solutions, Robert Johnson said, "We take pride in the fact that our relationship with our customers doesn't stop with the point of sale. Many of our clients will save thousands of dollars in insurance premiums."

"Environmental liability insurance is a necessary and affordable way to reduce your risk of environmental loss due to environmental accidents," said Bill Lohman, principal of Legends Environmental Insurance Services LLC. "With this partnership, Environmental Support Solutions' clients could save tens of thousands of dollars annually." "I was so impressed with Environmental Support Solutions' programs that I asked our Environmental Insurance carriers to offer discounts for companies that demonstrate they use the software. Most have agreed to provide a 10 percent or greater credit for customers who use Environmental Support Solutions' software due to the reduced risk of infractions shown," he added. "The industry trend reflects most companies' desire to take a proactive approach in environmental compliance."

For access to a free quote on environmental insurance, go to http://www.environ.com/main_waste.asp and click on the Legends Insurance banner. For more information about Environ.com, visit <http://www.environ.com> or telephone (800) 289-6116, ext. 1. For more information about Legends Environmental Insurance Services, contact Bill Lohman by telephone at (714) 634-2683 or e-mail at bill@legends-enviro.com.

Draft Guidance for Selecting Radiation Dose Models

On February 21, 2001, the "Draft Approach for Developing a Web Accessible Catalog of Dose and Risk Models and Their Capabilities and Guidance to Users Regarding the Selection of Dose and Risk Models" was published in the *Federal Register* (66 FR 11010). This draft approach was developed by DOE, EPA, and the NRC through the Cleanup Subcommittee of the Interagency Steering Committee on Radiation Standards (ISCORS). The document provides model users with guidance and performance considerations regarding how to select radiation dose and risk assessment models for use in site cleanup activities and decisionmaking. Public comments are due by June 21, 2001.

The document is available at the ISCORS Internet Site at <http://www.iscors.org/cleanup.htm>.

Actio and Brady Worldwide Partner

MSDS software provider, Actio Corporation, recently announced a strategic partnership with the labeling company, Brady Worldwide. The agreement sets the stage for the development of a web-based

HazCom labeling tool to be based on information contained in Material Safety Data Sheets.

"Our customers need a complete, high-performance, multi-service system," stated Russ McCann, President and co-founder of Actio Corporation. "Expanding the periphery of our HazCom information management is both a natural extension and critical duality in HazCom provider success."

By providing a regulatory information stream from Actio Corporation's proprietary *IntelligenTEXT* MSDS to Brady's label creation software, *Codesoft*, the partnership has produced a web-based solution that automatically recognizes and routes the requisite hazardous material information from the MSDS to the label. This creates a connection between a company's chemical list, their MSDS library, and the labels on their secondary packaging.

For more information, visit <http://www.actio.net>.

BTI Study Says the Internet Saves Money

The BTI Consulting Group recently completed a study of how more than 225 companies use the Internet to manage environmental information. The research suggests that a typical large company spends \$80 million on environmental costs, but the potential exists to reduce that amount to less than \$40 million through strategic use of the Internet. The study also found that environmental managers are increasingly looking for collaborative data sets and centralized access to common source of information.

The study, *E-Strategies for Environmental Management: Opportunities for Performance 2001*, describes the needs analysis for developing E- Strategies and includes guidelines for success.

For more information, visit the BTI web site at <http://www.bticonsulting.com> or e-mail Rnewirth@bticonsulting.com.

product news: Information/Data Resources

ForMyWorld

Environmental Defense and the National Wildlife Federation (NWF) recently launched *ForMyWorld*, a non-commercial web site that delivers "detailed, zipcode-specific environmental information for every community in America."

"*ForMyWorld* offers people across America facts and advice tailored specifically to their communities, so users can access information quite literally about their own backyards," said Environmental Defense executive director Fred Krupp. "The Internet is the ultimate expression of 'think global, act local.' The web gives Environmental Defense and the National Wildlife Federation the unique chance to offer pooled resources in a way we'd never be able to do offline."

ForMyWorld offers customized Neighborhood Reports with detailed local data. Each report contains ways to take community action to improve the environment. Users can receive reports on four different topics:

1. **Pollution studies:** provides information on levels of contaminants in local air, waters, and soils, as well as toxic emissions from local manufacturing activities;
2. **Nature:** provides a detailed overview of native animals – from birds to snakes – in addition to information on local natural recreation areas;
3. **Recycling:** identifies area recycling centers for everything from junk mail, to motor oil, to used batteries; and
4. **Gardening:** supplies information about native plants and provides monthly gardening tips.

"People look to our organizations to give them the information they need to discover and care for the world around them," said NWF president and CEO Mark Van Putten. "The Internet gives us an ideal opportunity to give people the information they want and the opportunity to make a difference for their community, their nation, and their world."

Major funding for the new service comes from the Packard Foundation and the Surdna Foundation. The site contains no banner ads or e-commerce.

For more information, visit <http://www.formyworld.com>.

EHS Incident Management

From a workplace accident to an environmental release ... from a transportation problem to a dropped container ... from an inconvenience to a disaster ... all these EHS incidents are now the focus of a new section of Essential Technologies' *Incident Master Portal* called *EHS Incident Management*. *EHS Incident Management* provides information and recommendations on planning, response, and recovery from all types of incidents and near-misses.

Recent examples include:

- An article titled "Cyanide Stolen in Tokyo" highlighted the risk to chemical manufacturers and distributors that common theft presents when the stolen product is a hazardous material. A stolen kilogram of cyanide was reportedly enough to kill about 5,000 people.
- "Guide to Assessing the Need for Personal Protective Equipment: A Guide for Small Business Employers" focuses on a problem faced across America - small companies have big needs for EHS programs. Personal Protective Equipment is one example. This feature provides checklists to determine a company's compliance obligations and directs the user to relevant OSHA documents to meet these obligations.

For more information, visit <http://www.incidentmaster.com>.

EcoSearch Canada

Environmental Resources, Inc. online environmental data service, *EcoSearch*, is now available for Canadian sites. You supply the location and *EcoSearch* prepares a custom report containing site-specific environmental quality information from a variety of sources, including:

- Environment Canada's National PCB Inventory

- the National Pollutant Release Inventory (NPRI)
- the "Orphan/Abandoned Sites Program"
- Waste Generator Summaries
- Waste Receiver Summaries
- the Private Fuel Storage Tanks database
- the Occurrence Reporting Information System (ORIS)
- the Water Well Information System (WWIS)
- the Pesticide Register
- and many more

Each report comes with a site map and a series of tables summarizing relevant information from the reference databases.

For more information, contact Environmental Resources, Inc.: telephone (317) 577-9797, fax (317) 9191, web site <http://www.ecosearchnet.com>.

1999 TRI Data Available

The US EPA just released the 1999 Toxic Release Inventory (TRI) data and several related documents. According to EPA, these data show decreases in emissions in several industries. The Agency also announced steps being taken to make it easier for industry to meet reporting requirements.

“This inventory is a powerful tool for helping to protect public health and the environment. I am pleased at the significant progress being made as trends continue downward. We continue to have high quality information to analyze and provide to citizens,” said EPA Administrator Christie Whitman. “Americans are reaping considerable benefits from the TRI program. We’re seeing constant decreases of emissions to air, land, and water, especially in the manufacturing industries where there has been a 46 percent decrease over the 12-year history of the program.”

To facilitate industry reporting requirements, EPA has introduced a new computer software product, *TRIAL*, which provides reporting facilities easier access to all TRI reporting regulations and guidance on interpreting those regulations. This system is available on EPA’s TRI website and is included in the software package provided to companies for the reporting process required by Congress under the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA).

The EPCRA law requires industrial facilities each year to publicly report the quantities of toxic chemicals released into the air, water, and land. EPA then analyzes these data to generate the annual TRI reports. Overall, the TRI includes information on releases and other wastes for 644 toxic chemicals and chemical compounds.

Overall, chemical emissions have decrease 46 percent in the manufacturing industries, about 1.5 billion pounds, over the 12-year history of the program. The one-year decrease from 1998 to 1999 was 2.5 percent.

The largest increase in total releases from 1998 to 1999 was reported by metal mining—an increase of 416.3 million pounds or 11.7 percent. For chemical wholesale distributors, total releases from 1998 to 1999 increased by 28.3 percent (435,000 pounds), waste treatment, storage and disposal facilities by 2.7 percent (7.5 million pounds) and electric generating facilities by 2.2 percent (24.9 million pounds).

The largest volume of chemical releases for all industries was reported by facilities in Nevada, followed by Utah, Arizona, Alaska, Texas, Ohio, New Mexico, Pennsylvania, Indiana, and Illinois, in that order.

A special research tool, *TRI EXPLORER*, is also available on a link from the TRI web page. It provides county-by-county assessments of the data. The public can sort the data by facility, chemical, geographic areas, or industry, at the state or national level.

The 1999 Toxics Release Inventory data and background information on the TRI program are available at: <http://www.epa.gov/tri>.

product news: Environmental Responsibility

Management Information Systems Book

"Management Information Systems 2000: GIS and Remote Sensing," published by WIT Press, contains 48 papers presented at the *Second International Conference on Management Information Systems incorporating GIS and Remote Sensing* (Lisbon, Portugal, June 2000). The papers originated from a wide range of practitioners, including researchers in academia and industry, land use planners, and technology network managers.

Topics include data acquisition facilities, database features, and human interface capabilities. The book is organized into ten chapters, as follows:

- Environmental Management
- Economic Development Management
- Applications of GIS
- Modeling Issues
- MIS in Training and Education
- The World Wide Web
- Applications of MIS
- Remote Sensing
- Integrated Modeling and Management
- Hydro-Informatics and Geo-Informatics

For more information, visit the Computational Mechanics, Inc. web site at <http://www.compmech.com> or telephone (978) 667-5841.

CITYgreen 4.0

American Forests, oldest nonprofit citizen conservation organization in the US, recently released version 4.0 of *CITYgreen* software. *CITYgreen* is designed to map urban ecology and measure the economic benefits of trees and greenspace.

The user supplies geo-referenced, low-level, aerial imagery at 0.1 to 1-meter resolution. Other data requirements vary, but may include tree health, species, height, trunk diameter, soil type, and slope. *CITYgreen* then combines this imagery and field data to create an inventory and perform a benefits

analysis of vegetation at a neighborhood scale. The software models and compares different land use and land cover scenarios and illustrates what is most beneficial to a community. Its growth model predicts the future growth and potential benefits of trees, demonstrating the value of greenspace investments.

The software is an extension of ESRI's *ArcView* for Windows and requires *ArcView* to run.

For more information, visit American Forests' web site at http://www.amfor.org/trees_cities_sprawl/citygreen/index.html or e-mail info@amfor.org. For more information on *ArcView*, visit ESRI's web site at <http://www.esri.com>.

product news: Neat Stuff

MapViewer 4

Golden Software, Inc. recently released version 4 of the *MapViewer* mapping software. *MapViewer* generates the following publication-quality maps:

- prism,
- line graph,
- flow,
- hatch,
- density,
- pie,
- bar,
- symbol,
- pin, and
- base.

It includes a variety of text and drawing tools. The built-in worksheet allows you to enter, edit, sort, print, and display data. Data can be imported from XLS, SLK, WK4, DBF, DB, TXT, DAT, and many other formats. And, maps/graphics can be imported from and exported to a variety of formats.

For more information, visit the Golden Software web site at <http://www.goldensoftware.com>.

Cartoons

Grantland offers a series of cartoons on a variety of business-related topics, including safety and the environment. These are essentially comic strips of the kind normally seen in the newspaper comics section. But they are designed to promote good work practices.

The safety cartoons are organized into nine topics: general safety, electrical safety, fire safety, lifting safety, office safety, repetitive stress, slipping and tripping, ergonomics, and miscellaneous. The environment cartoons are organized into four topics: recycling, conservation, carpooling, and miscellaneous. Grantland will modify the text to suit your particular needs.

For more information, visit the Grantland web site at <http://www.grantland.net> or telephone (804) 964-1238.

C-Maps

The US EPA Clean Air Markets Program maintains a web site to present maps and data developed using the Clean Air Mapping and Analysis Program (*C-Maps*). *C-Maps* explores the effectiveness of the Nation's acid rain program by examining the geographic distribution of air emissions data and related environmental indicators.

The web site includes a series of maps for the contiguous 48 states depicting the current status and trends in:

- emissions of chemicals associated with acid rain;
- concentrations of these chemicals in the ambient air;
- deposition of these chemicals in precipitation; and
- sensitive environmental receptors, such as surface water resources, forests, and other ecologically sensitive regions.

Visitors can also access the data sets used to develop these maps for use in other GIS or spreadsheet applications.

For more information, visit <http://www.epa.gov/airmarkt/cmap/index.html> or telephone the acid rain hotline at (202) 564-9620.

product news: EH&S Compliance

PPM and Labelmaster

Creative Business Solutions, Inc. has combined its *PPM* mobile audit technologies with Labelmaster's regulatory information products to provide audit software, CFR audit standards, and integrated links to *REG-Trieve for the Safety Manager* – all designed for mobile use on a Palm PDA. According to Creative Business Solutions, users can now download OSHA regulations to the Palm PDA to automatically integrate with their CFR audit questions in *PPM*.

For more information, visit <http://www.BusinessRx.com> or telephone Creative Business Solutions, Inc. at (866) 737-7574 (toll free) or (709) 737-892. For more information about Labelmaster, visit <http://www.labelmaster.com>.

OSHA Digital Expert

Virtual Compliance, Inc., recently introduced *OSHA Digital Expert*. This online tool allows users to:

- determine their OSHA compliance obligations by answering a series of "yes-no" questions;

- manage tasks using an online management system; and
- purchase relevant supplies, services, and training online via reputable suppliers.

OSHA Digital Expert is the second in the company's series of *Digital Experts*[™]; *HazMat Digital Expert* was the first to be released. These products combine Internet delivery with current regulatory content and expert system technology. They offer web-based access to the supplies, services, and training related to each compliance topic.

"We're pleased to roll out our second *Digital Expert*[™] right on the heels of our *HazMat Digital Expert*," said David C. Frankil, CEO of Virtual Compliance. "We've been involved with Internet-driven OSHA compliance for several years, and this next generation tool embodies what we've learned, combined with the very latest in technologies. We're offering something new, and highly relevant, to anyone who must comply with OSHA rules."

After the user answers a series of "yes-no" questions about workplace activities, the online system generates a set of regulatory action steps in the form of a "to do" list of action items. It also provides a variety of related management tools and links to vendors of corresponding services.

For more information, visit <http://www.vcompro.com> or contact Virtual Compliance, Inc., 1101 Wilson Blvd., Suite 1200, Arlington, VA 22209, telephone (877) 678-8266 (toll-free) or (703) 340-1700.

New *MIRS* Release

This month, A V Systems, Inc., released a new version of its *MIRS*[™] (*Material Inventory Report System*) software. The new release contains all EPA SARA Title III, Section 313, Toxic Release Inventory changes for Report Year 2000.

On the surface, these appear to be relatively minor changes. However, according to Andrew Rudnik, President and CEO of A V Systems, several major changes to Section 313 reporting (Form R) requirements "create tremendous challenges for companies that have manually tracked and reported SARA Section 313 listed chemical releases. The newly-added chemicals and the varied thresholds make the TRI reporting process increasingly complex. The *MIRS*[™] *FORM R* module provides the necessary step-by-step guidance to ensure accurate Form R and Form A reporting."

A group of previously regulated chemicals and additional new chemicals have been classified as Persistent Bioaccumulative Toxics, or PBTs. With this new classification comes significantly lower thresholds and a newly-defined compound category for 17 highly-regulated Dioxin and Dioxin-like compounds that require reporting in different units of measurement.

"When a *MIRS*[™] user tracks his or her chemical inventory throughout the year, a Form R report can be completed in as little as 20 minutes. That's a very attractive number as compared to the EPA's recent estimate of 52.1 hours per Form R response, published in this year's Toxic Chemical Release Inventory Reporting Forms and Instructions," Rudnik added.

MIRS is an integrated, modular software package that collects environmental data and produces agency-mandated and ad hoc reports for SARA, TRI, CAA, CWA, RCRA, and DOT waste handling, MSDS management, and OSHA Hazard Communication.

For more information, contact A V Systems, Inc., 4657 Platt Road, Ann Arbor, MI 48108-9726, telephone (734) 973-3000, fax (734) 677-4480, e-mail MIRS@MIRInfo.com, web site <http://www.mirinfo.com>.

HazMat Loader

RegScan Incorporated has created a new software product called *HazMat Loader* that the company hopes will reduce the number of illegal Hazmat shipments in the United States. According to RegScan, the U.S. Department of Transportation (USDOT) estimates that four billion tons of regulated hazardous materials move annually in America, and half of all Hazmat shipments violate Federal Safety regulations. A growing volume of shipments increases the chances that an accident or incident will release a harmful product, requiring a specialized response and endangering the public safety.

Statistics provided by the Federal Motor Carrier Safety Administration (Commercial Vehicle Statistics 1999 - MCMIS Interstate and Intrastate Data) found that 49% of all Hazmat inspections uncover safety violations. One-third of the violators are fined for improper placarding, a violation that potentially puts emergency response workers and the public at risk.

HazMat Loader is designed to inform government workers, drivers, dockworkers, carriers, and shippers whether a load is legal. It addresses HazMat placarding, labeling, and segregation issues.

John Mihalick, RegScan's National Sales Manager, said, "Enforcement officials in different states have indicated that, in just minutes, *HazMat Loader* can determine if a violation has occurred. Currently, it can take an inspector almost an hour to search the 2,500-plus hazardous materials covered by 49 CFR Consolidated Table HM181. *HazMat Loaders'* ability to reduce inspection times will result in more inspections and will increase public safety."

For more information, visit <http://hazmat.regscan.com> or contact a RegScan by telephone at (800) 734-7226 ext. 1415.

Optial and STP Create On-line Audit Tools

UK-based Optial Corporation and Vancouver-based Specialty Technical Publishers have joined forces to create a new web-based tool for EH&S compliance auditing, aimed predominantly at the U.S. market. Combining Optial's Internet technology with compliance guides from Specialty Technical Publishers, the companies are developing an "integrated audit management system." The Specialty Technical Publishers manual *Environmental Auditing: Federal Compliance Guide*, is the first to be made available for interactive use on this new platform.

Optial is supplying the technology that will provide several key features, including unlimited online completion of predefined and custom audit checklists and one-click reference to:

- relevant rulebooks,
- issue tracking,
- corrective action plan management, and
- online reporting.

The system is a fully hosted service which, according to Optial, is engineered to maintain complete security and privacy at all times. The system can be accessed using a standard web browser from any computer connected to the Internet. No additional hardware purchase or software installation is required. Available for as few as five users at an organization, the application has been designed to scale to support enterprise level user numbers and data volumes.

In addition to *Environmental Auditing: Federal Compliance Guide*, five other Specialty Technical Publishers EH&S products are currently in development for use on the Optial platform. These will be introduced over the coming months.

For more information, visit the Optial web site at <http://www.optial.com> or e-mail info@optial.com, or visit the Specialty Technical Publishers web site at <http://www.stpub.com> or e-mail custinfo@stpub.com.

MaxiSoft for Signs and Labels

K-Sun Corporation recently introduced *MaxiSoft* product safety sign and label making software. Using your color printer and self-adhesive labels, the software generates color safety signs and labels that comply with ANSI Z535.4-1998 Standards. K-Sun also offers printable vinyl and UV protective lamination sheets.

Product safety labels and signs can be designed in any shape, size, or color and can include ANSI signal words (e.g., DANGER, WARNING, CAUTION, NOTICE) in English, Spanish, French, German, Italian, or Portuguese. The software supports 13 graphics file formats and 14 bar code formats. Features include an ODBC interface, 200 safety symbols, and WYSIWYG label and page design previews.

For more information, visit the K-Sun web site at <http://www.ksun.com>, e-mail llaw@ksun.com, or telephone (800) 622-6312.

product news: Investigation/Cleanup

Visualizing and Animating Regional Contamination

A new report by the U.S. EPA National Risk Management Research Laboratory presents methods of visualizing and animating statistical estimates of groundwater and/or soil contamination over a region. The report, titled "Statistical Estimation and Visualization of Ground-Water Contamination Data" (EPA 600-R-00-034), describes the use of statistical methods, including nonparametric regression, kriging, and variograms to estimate the total amount of contaminant present in a region. The methods are illustrated using data from Eglin Air Force Base in Florida.

Download the 59-page report at http://www.epa.gov/ada/download/reports/epa_600_r00_034.pdf.

The Method of Response Function in Ecology

A new book by WIT Press, presents a new approach to the construction of ecological models based on a

generalised version of the response function method. According to the authors, this method allows all essential features of ecosystem processes – such as complexity, unknown mechanisms, multidimensionality, uncertainty, and irreducibility – to be taken into account. The authors apply the method to a variety of environmental problems. A CD-ROM containing demonstration versions of four models discussed is included. Contents include:

- Fundamentals of the Theory of Response Function Method
- *ONTOMOD* - the Model of Ontogenesis in Higher Plants using Soybean as an Example
- *POLMOD.RAD* - the Model of 90Sr Dynamics in Elementary Ecosystems
- *POLMOD.PEST* - the Model of Pesticides' Dynamics in Elementary Ecosystems
- *UMOD* - the Model of Humus Formation in Soils of Natural and Agricultural Ecosystems
- Development of Environmental Indices using the Method of Response Function

For more information, e-mail Computational Mechanics Inc., at marketing@compmech.com or visit the company's web site at <http://www.compmech.com>.

product news: Education/Training

GoTrain.net's *Learning Management System*

GoTrain.net offers an on-line *Learning Management System* to enhance its interactive, web-based EH&S training courses. The system includes the following key features:

- records management,
- curriculum management,
- scheduling and tracking,
- automated training notification,
- client internal accounting, and
- learner progress status tracking.

For more information, visit <http://www.gotrain.net>, e-mail customerservice@gotrain.net, or telephone (800) 510-1035 (toll free) or (865) 560-0354.

On-line OSHA Training from Eastern Michigan University

Eastern Michigan University offers a variety of on-line OSHA training courses in seminar format. The University was selected by OSHA in a national competition as one of 12 official education centers.

The basic OSHA course is designed to provide an introduction to OSHA for anyone responsible for health and safety issues in the workplace. It provides basic information needed to understand OSHA's role in protecting workplace safety and health. Topics include a historical background of OSHA, workplace statistics, common violations, common hazards, and the appropriate controls and procedures mandated to reduce or eliminate hazards.

The current course schedule calls for one basic OSHA course a month over the next six months. The University also offers an online certificate program in industrial health and safety, consisting of a series

of six required courses. The University currently offers a total of 13 related courses.

For more information, visit <http://www.emuosa.org/online/index.cfm> or e-mail Beth Stoner beth@emuworldwide.net.

Click [here](#) for a list of events

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