

In cooperation with National Geographic Topo

Topographic Maps from a Kiosk

Introduction

In April 2000, the U.S. Geological Survey (USGS) and National Geographic (NG) TOPO entered into a cooperative research and development agreement (CRADA) to explore a new technology that would allow a person to walk into a map retail store and print a personalized topographic map, vending machine style, from a self-service kiosk. Work began to develop systems that offer seamless, digitally stored USGS topographic maps using map-on-demand software from NG TOPO. The vending machine approach ensures that maps are never out of stock, allows customers to define their own map boundaries, and gives customers choices regarding shaded relief and the grids to be printed on the maps to get the exact maps they need.

USGS and National Geographic Contributions and Benefits

Specifically, the USGS contribution to the CRADA has been providing the paper maps for scanning, digital elevation data for shading relief, and geographic names data for searching. NG TOPO has been responsible for most of the data production, including scanning, georeferencing, storing, and integrating the data with its map-on-demand software and hardware systems.

Both organizations benefit from map sales through the kiosks. A portion of the money from each map sale is donated to the USGS in a special fund earmarked for the revision and updating of the country's maps. Additional proceeds support the National Geographic Society's mission to further the diffusion of geographic knowledge, exploration, and conservation.

About the Map Machine

Using custom software, touch screen monitors, and color laser printers, a customer can center a map on an area of interest, regardless of quadrangle boundaries, and print that map on waterproof paper. Maps can be customized with a coordinate grid of the customer's choosing, up-to-date magnetic declination information calculated using the date and time the map was printed, and shaded relief to make it easier to understand elevation changes. The 1:24,000-scale USGS topographic maps actually print at about 1:32,000 scale so that one quadrangle fits on the 13- by 18-inch paper in the kiosk. (The scale actually varies slightly, depending on the latitude of the map being printed.) The software can also produce a 1:24,000-scale map for an area somewhat less than a quadrangle.

Major Milestones

Currently, about 25 map vending machines have been placed in retail locations across the country; three of these are located in the USGS Earth Science Information Centers. Locations of these sites can be found at maps.nationalgeographic.com/ngmaps/locator.cfm?typeid=3.

The USGS sites have implemented credit card swipe technology on the map kiosks to simplify financial processing.

Future Plans

As part of the agreement, the USGS and NG TOPO are now exploring new data formats to shorten the map revision cycle—the time between data collection by the USGS and the publication of printed maps. The response of customers will be



A young customer uses the touch-screen on the kiosk to select his map.

a key factor in determining what maps and additional features will be incorporated into future kiosks.

The lithographic printed maps will continue to be produced and made available for the foreseeable future for those customers who prefer the traditional USGS quadrangle maps. Ordering information can be found at mcmweb.er.usgs.gov/topomaps/ordering_maps.html.

Information

For more information on this CRADA with NG TOPO, contact:
Michael Cooley
U.S. Geological Survey
511 National Center
Reston, VA 20192
Phone: 703-648-5528
Fax: 703-648-5939
E-mail: mcooley@usgs.gov

More information about topographic maps can be found at mcmcweb.er.usgs.gov/topomaps/.

For further information on CRADA opportunities with the USGS National Mapping Discipline, please contact:

Steve Strader
U.S. Geological Survey
500 National Center
Reston, VA 20192
Phone: 703-648-4652
Fax: 703-648-4706
E-mail: sstrader@usgs.gov

Additional Information

For information on other USGS products and services, call 1-888-ASK-USGS, use the Ask.USGS fax service, which is available 24 hours a day at 703-648-4888, or visit the general interest publications Web site on mapping, geography, and related topics at mac.usgs.gov/mac/isb/pubs/pubslists/.

For additional information, visit the ask.usgs.gov Web site or the USGS home page at www.usgs.gov.



Customer viewing map he printed at the kiosk.