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Real-Time MapInfo Video

Tanks moving across desert	Guiding the troops to friendly ground through the windswept sands of Operation Desert Storm.
Ships, buses, trucks, trains	Pinpointing the position of cargo ships, buses, trucks, and railways.
Fire Engine, EMT Vehicle Police	Dispatching the closest emergency vehicle to an accident scene to save human lives.
Playground scene	Or keeping closer tabs on pets, property, and the neighborhood kids.
Skyline urban shot from Charles River MIT Side	Now, all this and more is possible using RealTime MapInfo - a new desktop computer program that maps the exact location of moving objects as they travel through

land, sea, or air.

MapInfo Office	Offered by MapInfo Corporation of Troy, New
Close to	York, RealTime MapInfo combines newly
sign or logo	commercialized ground and satellite-based
	Global Positioning Systems with established
Electronic	desktop mapping technology, enabling PC users
map	to track the position of moving objects to
	within 100 meters.
Urban Traffic	Land-based Loran C transmitters or U.S.
Loran Tower	government GPS satellites - as used during
Satellite	Operation Desert Storm - transmit latitude,
	longitude, and altitude coordinates to GPS
Close to GPS	receivers attached to the monitored objects.
antenna on	
vehicle	
	The data is then communicated through
	radio, cellular or telecommunication links to
	Real-Time MapInfo, which automatically plots
Moving object	the object on a detailed, digitized map,
on Map	monitoring its every move - including
	speed, temperature, and pressures when

Traffic	appropriate.
Plug in serial port	Installed through the serial port of any DOS-based personal computer, RealTime MapInfo's electronic views are making vast improvements in the delivery of transportation and emergency services, as as well as the management of remote facilities.
Electronic Map	
Military Footage	During the Gulf War, operations officers guided allied forces safely through blinding sand storms in Saudi Arabia, Iraq, and Kuwait.
Trucks, trains ships, planes	In the commercial arena, transporters across the world are using Real-Time MapInfo to track the routes of trucks, trains ships, and planes.
Crane lifting trailer on ship	Valuable cargoes once stolen or lost are now better protected against theft and misadventure, and can be located instantly and soon recovered when abducted or misplaced.
Dispatcher on	Transporters are also providing up to the

phone in front of PC	minute status reports to customers awaiting important deliveries, and rerouting trucks, planes, ships and trains to satisfy business demands or to avoid hazardous passageways and weather.
Telephone Wires Pipes Map Shot	RealTime MapInfo is also being used by utility companies to monitor power lines, gas pipes, and cable routes. Able to chart temperatures and pressures using color, symbolic, and numerical codes, the desktop mapping system can reveal the source of a power failure or gas leak as it happens, enabling service teams to take immediate action to repair it.
Traffic Light Oakland Fire Footage Fire Truck Oakland-fire street scene	Traffic lights may be mapped to make certain that all are working correctly. And GPS receivers, dropped from planes on fire sites, can track and anticipate the fire's force and direction, enabling fire departments to respond more effectively and endangered citizens to be properly warned.

Ambulance in motion w/ GPS antenna Suburban Home	Real-Time MapInfo is playing an increasing role in helping service providers accelerate responses to emergency calls on direct dial hotlines such as 911.
Dispatcher Computer screen	Rather than calling randomly for the nearest available ambulance, dispatchers can instantly locate and the closest EMT vehicle on a desktop street map, and route it directly to the victim.
Dispatcher on phone 34 Lotus Lane	Upon verifying the name and address that appears automatically on the computer when the call is received, the dispatcher then commands the system to locate that address.
Dispatcher Dots moving on street map	Instantly, the system presents a map of that area with a complete view of the position and movement of every ambulance within the vicinity.
Two shot of EMT driver and address, and perform life	The dispatcher then radios the closest EMT technicians in the closest vehicle, who sidekick race to the victim's

exiting

hospital lot

saving support - sparing that person of a wait

which often can mean the difference between

life and death.

EMT technician

performs resuscitation

Among many attributes and uses, RealTime

MapInfo's ability to save and safeguard lives

may be its most important asset of all.

Ambulance drives off

Fade Out

End

MAPINFO PILOTS A NATO GEOGRAPHIC INFORMATION SYSTEM INTO SHAPE

The Soviet Union's demise may have dimmed the threat of global war but NATO's Supreme Headquarters Allied Powers Europe (SHAPE) Technical Center still maintains a vigilant, busy pace. Lodged in Holland at the Hague, SHAPE Technical Center (STC) researches and designs advanced radar, communications, and information systems options for Allied Command Europe. "Our mission is to help users obtain effective military information systems," said Dr. Klaus G. Muller, a computer scientist at STC for more than 25 years.

"We don't procure these systems, we only write specifications," he adds. "However, we do obtain systems for prototypes we develop in our laboratory, and we're familiar with many commercial solutions available today."

In the past, SHAPE developed these systems via a "Linear Lifecycle" model in which prototypes played no part. Marked by rigidly defined phases which removed users after analyzing requirements, this model caused many delays and failures that cost NATO untold amounts of money. In 1990, however, in response to Europe's changing military face, the alliance adopted an "Evolutionary Lifecycle" model based on user-driven evaluations of prototypes configured by the Technical Center.

"The prototype is the key to the entire process," Dr. Muller explains. "Once we develop the system and users inspect it, we dispatch copies for operational use or military exercises, and wait for user feedback.

"In this way, users test the system before specifications are issued, and NATO can create solutions better suited to the rapidly changing geopolitical environment of western Europe and its defense."

<u>A Visual Analysis Prototype Proves the Point</u>

In early 1990, Allied Command Europe system planners requested a strategic geographic information system (GIS) for which Dr. Muller's group developed the prototype. The system was required to display the location of allied and opposition land, sea, and air forces, as well strategic landmarks such as bridges and military installations.

"Users stored all this information on various computer databases, and wanted to plot it as they had on paper maps using standard symbols to represent NATO and non-allied forces and facilities," notes Dr. Muller.

"The military could not function without these maps, and planners recognized the advantage of applying this data electronically against a map background instead of doing so manually.

"Given the existing manual system's slow, inaccurate response to troop and equipment movements," Dr. Muller adds, "our goal was to design a Europe-wide prototype able to integrate Allied Command's databases into a highly efficient, visual GIS component."

In addition to these criteria, the desktop system had to duplicate NATO's standard symbology and map coordinates, chart all major European waterways and borders, and support "what if" questions regarding possible movements of allied and non-allied forces. STC's criteria for the prototype also called for a flexible programming language to construct user-friendly menu systems, and for interfaces with other user programs.

<u>MapInfo Fills the Bill</u>

With his direction clear, Dr. Muller studied several alternatives in February 1990 before selecting a desktop software solution from MapInfo of Troy, New York. Fully functional on STC's 286 SX and 386 SX PCs, MapInfo's

programming language, MapCode, easily produced STC's menus, and the system seamlessly displayed database information needed to perform every NATO application.

"Other systems we tried lacked the flexibility to support rapid prototyping," Dr. Muller explains. "They required a lot more hardware performance and a larger investment in programming time and money than we were prepared to make."

Having used MapInfo in prior applications, Dr. Muller was also confident of the system's "operational reliability," and impressed with its facility to display latitude and longitude markings on every electronic map. "The program's adaptation of miles to kilometers in compliance with Europe's metric system, and its ability to plot NATO's color coded, rectangular symbology through its comprehensive map display functions was another great asset," he adds.

A Uniformly Positive Response

Just a month after choosing MapInfo, the Technical Center completed two operational prototypes, which Dr. Muller promptly dispatched to SHAPE's system planners for evaluation. In keeping with NATO's evolutionary process, these users were invited to request improvements. "The response was very favorable," says Dr. Muller. "Everyone applauded the improvement in application development and applications."

While NATO's exact prototype usage remains a military secret, Dr. Muller says the system was employed during the Gulf Crisis for classified purposes, and that it performed extremely well. "The users are extremely satisfied or they would have abandoned the systems long ago. They're easy to work with, and have proven very rugged in operational use," says Dr. Muller.

As the prototype continues to be refined, Dr. Muller is eager to utilize MapInfo across multiple platforms such as Macintosh and Sun SPARCstation in future multimedia STC prototypes.

"MapInfo has been extremely successful for us. The system makes a quick and simple connection to popular database management systems such as dBASE 1V and requires no data entry," he explains.

"Its programming language also allows us to design systems without having to do high degrees of programming in C, Pascal or Ada. We really couldn't ask for anything more."