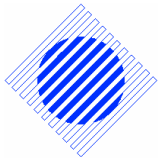


# White Paper

## Integrated Security Assessment & Data Dissemination Technology

Revision 1.0



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## Introduction

Real Time Consulting, Inc. is a software development company specializing in security software for government intelligence agencies and operational groups. For the last sixteen years, Real Time Consulting has provided groups in the Department of Defense and the Department of Justice with a technology that facilitates the collection and rapid delivery of site intelligence for tactical and logistical planning.

The technology was designed to solve a common problem that consistently prevented or limited the ability of operational groups from assimilating and distributing mission critical data in a timely manner. The resulting suite of software tools provide an extensible and field-tested solution to a problem shared by many groups and establishes a common framework to centralize, integrate and share site intelligence.

## Operational Requirement

The main operational requirement is the ability to quickly collect and organize the venue-specific data required for mission planning and response, and then rapidly produce targeted dissemination packets for distribution to the various disciplines involved. These capabilities directly affect operational effectiveness, team safety and ultimately, mission outcome.

## Physical Site Surveys

Most agencies have access to mapping and imagery resources that provide a “general” level of intelligence for a venue and it’s surrounding area. However, for operational planning, physical surveys are the critical mechanism for acquiring the “venue-specific” site data needed to develop viable response and exit strategies. In addition to data collection, surveys provide an opportunity for operational personnel to physically experience a site to gain confidence in the accuracy of the information they will be relying on to preserve their safety and accomplish their mission.

## The Problem

The data collection effort for a structure, vessel, port or region can be overwhelming, especially without the proper collection tools and a methodology for organizing the data during collection. The foremost problem is simply the sheer volume of data that needs to be gathered, organized and managed. Volume also impedes production because it complicates the job of maintaining data integrity as it is processed and manipulated.

Operational groups have repeatedly attempted to manage this effort, only to find the task too demanding. It often took weeks for groups to organize and assemble the stacks of notes, sketches, photographs and video brought back from a survey into distributable intelligence. Our technology can accomplish this task in a matter of minutes.

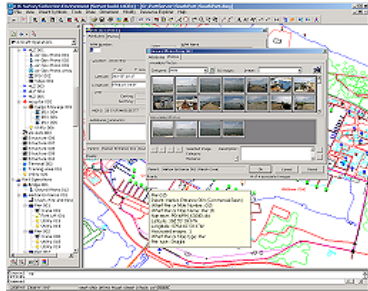
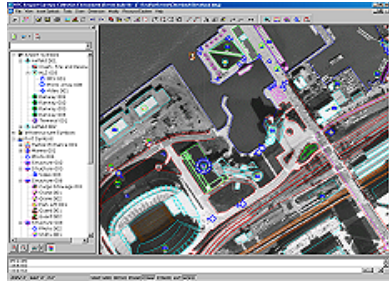
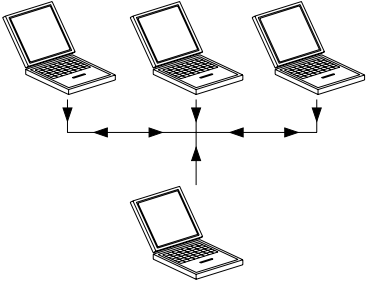
## The Solution

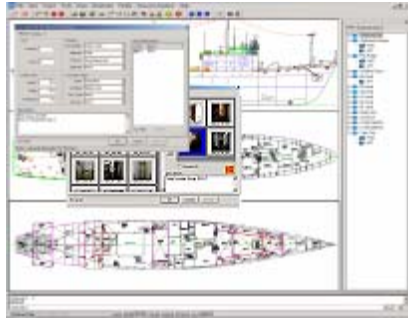
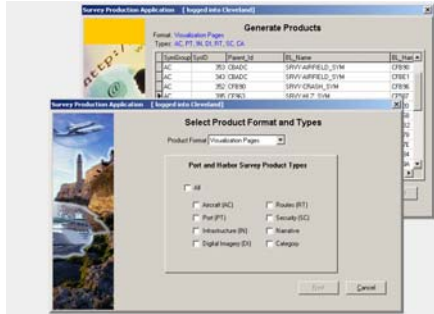

The greatest obstacle for each of our clients was the time and effort required to organize their survey data and produce dissemination materials for the various mission participants. This necessitated a need to plan surveys months in advance of an upcoming event or mission, which is contrary to an operational response group’s inherent need to plan and act quickly.


We recognized the problem was the lack of a cost-effective collection technology capable of organizing and managing the volume of data and an automated publishing technology capable of producing dissemination materials in both digital and hardcopy media. Our solution was the development of a collection technology that manipulates associated information as intelligent objects, maintaining integrity and simplifying downstream operations, such as rapid site familiarization, mission-critical planning and data publication.

### Technological Capabilities

The following table lists the functional requirements of our clients and the technology that Real Time Consulting developed to address them. More importantly, our software architecture offers the extensibility to rapidly develop derivative solutions for other applications having similar requirements. This capability measurably improves the delivery speed of site intelligence to analysts, planners and operatives.

Requirement	RTC Technology	
<p>Quickly and easily collect and organize “venue-specific” data required for areas, structures, seaports and maritime vessels</p>	<p>RTC developed portable, cost-effective software tools allowing security assessment, tactical and logistical planning personnel to collect and organize the mission critical data they require for each venue type. The tools provide an input mechanism that only “requests” the data specified by the client, both streamlining the collection process and insuring data relationships are maintained throughout the downstream processes.</p>	
<p>A graphical collection environment that allows surveyors to accurately record the locations of surveyed features</p>	<p>RTC developed an interactive graphical collection and visualization interface that provides surveyors with an ortho-rectified image of the venue to accurately record the location of each feature surveyed. The image is created using satellite imagery, aerial photography and computer-aided design geometry, individually or in combination. To collect data, the surveyor merely selects the type of feature to record, picks a point in the graphics display to identify the feature’s location, and fills in the feature-specific information “requested” by the resulting dialog box.</p>	
<p>Reduce collection time for large venues / data sets</p>	<p>RTC developed a technology to easily merge and manage survey data from multiple laptop computers. This capability not only reduces collection time by allowing multiple survey teams to operate concurrently, it also centralizes the information to facilitate quality control operations, such as data auditing. Each team’s data can then be redistributed to guide their remaining effort and keep the survey on-track.</p>	

Requirement	RTC Technology	
A graphical command interface that provides direct access to the collected data	Ease-of-use is an especially high priority for operational groups because they rely heavily on their software in times of crisis, yet have little time to devote to recurrent software training. Consequently, RTC focused on developing intuitive interface technologies that allow even casual users to find the information they need with minimal training or exposure.	
Intuitive operation, easy to use	RTC developed a graphical visualization environment allowing users to quickly retrieve and view survey data. Analysts and planners can view the venue at any magnification and rapidly retrieve data just by double-clicking on a feature's symbol. For example, double-clicking on a route path starts playback of the route video and displays a synchronized tracking icon on the route path.	
Collect and process disparate data types	Users can also locate and access data systematically using traditional pull-down menus or RTC's screen navigator, an interactive and dynamic tree-structure browser providing impressive navigational and informational functionality.	
Rule-based data auditing	RTC developed a technology that allows surveyors to collect technical specifications and procedures, narrative information, logistical information, GPS coordinates, digital photography, 360° IPIX imagery, motion video and 360° iMove video. The technology also includes software controls that interface with still and video cameras connected to the system.	
Data set integration	RTC developed a technology that audits a data set for accuracy and completeness based on a set of rules. The program quickly produces a report of data not adhering to the rules and identifies the problem area for each. A data set is always audited prior to running production, however, it can also be audited in the field to determine errors and omissions before leaving a site, saving a costly second trip.	
	RTC technology allows multiple data sets to be combined in the visualization environment to create "real world" scenarios providing an unparalleled range of information to address more complex mission demands. One minute an analyst can be viewing the video of a land route coming into a seaport, the next, be looking at a 360° view of the control room for a cruise ship in the harbor. Analysts and planners can model mission or event sites with the flexibility to access data at whatever level of detail they need to respond to the changing dynamics of a mission.	
	This technology provides the range of information needed to address the increasing number of missions requiring detailed site intelligence and provides the framework to create an ever-increasing library of data sets to centralize, integrate and share site intelligence.	

Requirement	RTC Technology	
Automated production capabilities	<p>RTC technology allows the user to quickly and automatically produce any of the following output formats: HTML, compiled HTML, DVD, hardcopy books or intranet website. Production also creates the visualization content that results from double-clicking a symbol in the graphical visualization environment.</p>	
User control of output content	<p>With the exception of the intranet website, output formats are portable and easily accessible, allowing operational members to access the data en route to an event to familiarize themselves with site data pertinent to their assignments. The intranet website can be installed on a secure network to allow controlled access.</p>	
Flexible output options	<p>HTML page content can be formatted to meet client specifications, however in general, a page contains a classification header and footer, thumbnail photographs, feature attributes, links to associated feature data such as narratives and videos, and links to associated features. Clicking on a thumbnail photo provides an enlarged, high-resolution view with pan and zoom capabilities. Our publishing software can create approximately 1,500 hyperlinked HTML pages in 90 seconds, and digital documents, suitable for hardcopy printing in minutes.</p> <p>Users can easily select what data to include in each production run, readily allowing production of classified and unclassified packages, based on the intended recipient's security classification and data requirements.</p>	
Easy to incorporate venue changes	<p>To maintain the usefulness of existing data sets and avoid basing plans on outdated information, data sets need to be updated to reflect venue changes. RTC technology easily updates data sets by running production after venue changes have been surveyed. The automated publication system facilitates rapid redeployment of valuable familiarization and planning information.</p>	
Service and Support	<p>RTC offers a complete line of support services including:</p> <ul style="list-style-type: none"> <li>▪ Engineering drawing services / Computer-aided design</li> <li>▪ Physical survey personnel and support</li> <li>▪ Training and Technical support</li> <li>▪ Video production</li> <li>▪ IT implementation</li> </ul> <p>RTC also offers complete design services to customize existing capabilities or develop new functionality.</p>	

**An Increased Need**

Real Time Consulting developed its first data collection system in 1987 and, even though we have contracted with other groups having similar needs over the years, we have recently seen a sharp rise in the need and demand to collect detailed intelligence for response preparedness. Our past and present dedication to the constant improvement of data collection technology puts us in the unique position to provide the domain expertise and the software tools to address today's collection and dissemination needs.