Appendix 1: Information Technology Descriptions

Appendix 1: Information Technology Descriptions

The following are descriptions of Computer-Aided Dispatch, Mobile Data Computing/ Automated Field Reporting, Records and Jail Management, and Geographic Information and Computer Mapping Systems. While there are other law enforcement information technologies, we chose to describe these in detail because they are the primary technologies funded through the COPS Making Officer Redeployment Effective (MORE) Program. For information on other law enforcement technologies, please visit the SEARCH Web site at **www.search.org**.

Each technology described in this section offers *core* data management capabilities, such as data capture and entry; search, retrieval and display; messaging; and forming complex linkages between data elements.

Computer-Aided Dispatch

The computer-aided dispatch (CAD) system has become an indispensable technology tool in policing and public safety, designed to handle all information related to receiving and dispatching emergency calls for service. For law enforcement, the system is often the first point of data entry, whether processing an emergency 911 telephone call for service (CFS) or managing an officer-initiated car stop.

CAD fully automates the call-taking and dispatching functions of a law enforcement agency and initiates and manages dispatch and incidents. Used with automated vehicle location (AVL) systems that track vehicle status information (see page 257), CAD systems can help prioritize calls for service and make recommendations for unit and resource dispatching based on beats, zones, closest resources and/or current unit activities. Some CAD systems can also provide immediate access to incident location history and information, such as number and type of prior calls to the location, whether there are existing warrants for residents, or if there are specific hazards related to the location.

Based on a "geofile" or geographic database using map-based x and y coordinates, CAD pinpoints and verifies the location of a caller and incident regardless of whether it is an address, intersection, common place, business, etc. The geobase is a critical component of a CAD system, as it can link and identify locations via the x/y coordinate, regardless of how a user enters an address or location — this is important not only for accurately verifying a location, but also for statistical analysis of incidents and CFS.

The latitude and longitude of a cellular caller, when available, can also be used directly as a valid incident location.

An E911 interface maximizes the dispatch process by importing the automatic name index (ANI) and automatic location information (ALI) directly into the CAD.

Effective handling of an emergency CFS through a geo-based CAD:

HOW IT WORKS

- A 911 CFS is received by a call-taker.
- E-911 ANI/ALI information automatically populates the CAD screen and the dispatcher adds call details to CAD.
- The computer assigns a priority rating to the call based on the information entered; checks the validity of the address using the geofile; searches for historical location information (previous calls for service, hazardous conditions, weapons, warrants, etc.); then makes recommendations about dispatching available officers and units (car, wagon, foot/bike beats, etc.) to handle the assignment based on unit proximity, availability, etc. The dispatcher can use a radio for voice dispatch and/or "silent dispatch" the call to officers with mobile computers in their patrol cars (silent dispatch involves sending dispatch information to a laptop in the field).
- The system constantly updates unit and call status for the dispatcher and officers to view.
- When officers have been dispatched, they may use CAD to query various systems, such as State and Federal crime information centers, NLETS, motor vehicles, local records systems, etc.
- The computer automatically maintains status information, listing all vehicles working on a specific tour, their status and current assignment. Response times are documented and reports are captured.

Typical CAD Features*

Technology Components

- — Dual displays (with computer mapping)
- — Enhanced 911 (E911)/telephony
- — Integrated radio

Primary Modules

- — Incident entry (call-takers)
- — Dispatching
- — Status monitoring
- — Administrative
- — Training
- — Statistics
- — Alarm billing
- — Permits
- — Mapping

Inputs

- — E911 ANI/ALI
- — Radio data acknowledgments (ACKs/NACKs)
- — Event data
- — National Crime Information Center (NCIC)
- — Geographic information systems (GIS)
- — Automated vehicle location (AVL)
- — Records management system (RMS) information
- — Parent organization data
- — Mobile updates from field officers

Outputs

- — RMS
- — Incident dispatch to mobile devices
- — Messages

Human Interface

- — Who uses it?
  - • Call-takers
  - • Dispatchers
  - • Supervisors
  - • Patrol (via mobile data computers)
- — Who supports it?
  - • Small-medium agency: at least 1/2 FTE
  - • Large agency: 1 or more FTEs
  - • Vendor
- — How long should it take to learn?
  - • Application: 40-60 hours
  - • Administrative support: 60-80 hours
  - • Depending on skill set

*This is not intended to be a comprehensive list of CAD features.

Mobile Data Computing and Automated Field Reporting

Mobile computing has become the catchall phrase for outfitting an officer's vehicle or person with the technology that, in effect, allows him or her to be a "mobile office." Mobile computing is actually comprised of several law enforcement hardware and software technologies working together to allow officers to access, receive, create and exchange information wirelessly in the field.

Outfitted with wireless communication technologies, officers can proactively query local, State and national databases; receive and initiate CAD events; view unit status; send e-mail; prepare and file incident reports; issue citations; capture field interview information; access department policies and procedures; research penal codes; and perform many other activities, all via laptops or hand-held units. The goal, of course, is to allow officers to do anything in the field that they can do in-station — including accessing electronic photos.

Some of the real benefits of mobile computing come through the use of automated field reporting (AFR) software. AFR automates the incident and other reporting processes from the patrol car. Optimally, AFR allows the capture of incident and report information and then electronically sends the report to a supervisor for approval and submission to the records management system (RMS). Modern AFR software can increase officer productively and streamline the reporting process by allowing the officer to capture critical information in the field at the time of an incident. AFR packages offer a variety of features to ensure data integrity, such as drop-down menus, spell-checking, prefilled fields, pre-population of multiple forms, error correction and more.

Increasing the effectiveness of law enforcement personnel in the field with mobile devices:

HOW IT WORKS

- After receiving dispatch information via the mobile laptop computer, the officer responds to the incident, running queries and other inquiries against databases remotely.
- When the incident is closed, the officer completes a required report (incident, citation, accident, other) via laptop or hand-held unit.
- Information is electronically forwarded to a supervisor for approval via wireless communications network.
- The supervisor makes a decision whether to approve the report. If approved, the report is electronically submitted to the records unit. If it is not approved, the supervisor can send the report back to the officer for corrections.
- Once received by the records unit, records staff performs quality assurance on the report prior to formally submitting it to the RMS, but this entire process is done electronically.

The benefits of mobile computing are clear: Officers who can receive dispatch information and conduct their own instant queries from the laptop have more immediate access to information that assists them in on-the-spot decisionmaking. Preparing reports in the field allows for more accurate and timely data due to its capture in the field at the time of the event. Additionally, the ability to transmit reports to supervisors and headquarters means officers do not waste valuable time returning to the precinct or station to complete paperwork. Finally, the instant access to (and exchange of) information can make officers more effective in community policing strategies and interacting with citizens.

Typical Mobile Data Computing Features*

Technology Components

- — Laptop computers
- — Hand-held personal digital assistants
- — Public or private radio systems

Primary Modules

- — AFR
  - • CAD data capture
  - • Error correction
  - • Report writing
  - • Case management
- — Incident retrieval and display
- — Forms
- — Call receipt
- — Administrative

Inputs

- — CAD incident data
- — RMS data
- — NCIC
- — Other Federal, State and local databases

Outputs

- — Incident reports
- — NCIC uploads
  - • Stolen vehicles
  - • Warrants
- — CAD scheduling data
- — Data for integrated justice
- — Variable exports
  - • Jail management system
  - • Ticket processing
  - • Parent organization applications

Human Interface

- — Who uses it?
  - • Sworn personnel
  - • Command staff
  - • Supervisors
  - • Detectives
- — Who supports it?
  - • Small-medium agency: at least 1/2 FTE
  - • Large agency: 1 or more FTEs
  - • Vendor
- — How long should it take to learn?
  - • Application: 20-30 hours
  - • Administrative support: 80-100 hours
  - • Depending on skill set and database design

*This is not intended to be a comprehensive list of mobile computing features.

Records Management System

A law enforcement records management system (RMS) is not just a means to electronically collect and store reports and information. Indeed, records management systems of the 21st century have become a key asset to effective policing, offering robust analytical tools, the ability to seamlessly share information, develop complex linkages between myriad data and information, and assist in effective management strategies. The police RMS is a key component to informed and intelligent decisionmaking and the basis for sound integrated justice information systems.

In its simplest form, an RMS captures, maintains and analyzes all police agency and incident-related event information and is vital to the day-to-day operations of tracking and managing criminal and noncriminal events, investigations and personnel information. An RMS automates the daily business practices of entering, storing, retrieving, retaining, archiving, viewing and exchanging records, documents, data, information or files related to persons, vehicles, incidents, arrests, warrants, traffic accidents, citations, pawn tickets, civil process paper service, gun registration investigations, and property and evidence. Information can also be captured in a variety of forms, including digital photos (crime scenes, mugshots, evidence, etc.), audio and video.

Standard RMS components include integrated information tracking and management systems for each of these entities. Modern RMS applications can form complex linkages between each of these components, offering enhanced analysis and multifaceted use of the data, including decisionmaking along the following lines:

Information stored, linked, accessed and analyzed via a robust RMS:

HOW IT WORKS

- Officers prepare reports via desktop computer or mobile unit in the patrol car and submit them electronically to a supervisor, who reviews them.
- Once the supervisor's approval is given, the report is automatically added to the RMS.
- If property or evidence has been received, it can be bar coded and linked directly to the record in the RMS.
- Information stored in the RMS becomes available to agency users (whose access is controlled by system security), such as detectives, crime analysis and community-oriented policing divisions, command staff and others in the department for tactical use and for developing strategies in crime prevention and response.
- A public interface is built into most records management systems to provide information to the community (in compliance with privacy guidelines as mandated by 28 CFR 23).
- Appropriate RMS data and information can be shared and exchanged with other justice agencies.

- **Strategic**: Offering the organization critical information that assists in tactical planning, resource deployment, performance assessments (individuals and units), risk assessment and management, and accountability.

- **Tactical**: Providing officers and other employees with immediate access to complete, accurate, timely and integrated information in a variety of formats (data, images, photos and video). Allowing effective analysis of crime trends and hotspots, thus contributing to proactive — rather than reactive — policing and to tactical decisionmaking.

- **Investigative**: Enabling the use of advanced case management tools (case distribution, tracking and disposition) for all personnel assigned or involved with a case, including modern property and evidence collection, analysis and disposition tools, such as bar coding and enterprisewide access to the status of property and evidence.

- **Administrative**: Providing information on personnel, training and scheduling, as well as information that can assist with developing annual budgets and setting departmental policies and procedures.

Modern RMS applications are focused on improving data accuracy and the speedy retrieval of information. They are designed to reduce data entry (thereby reducing errors and duplicate information entry into separate systems) and the use and storage of paper documents. In general, these systems can significantly streamline data processing and workflow while improving the overall quality of information captured.

Typical RMS Features*

Technology Components

- — Workstations
  - • Networked PCs
  - • Wireless devices
  - • Displays
- — Servers
- — Optical storage
- — Hand-held devices
- — Bar coding (property and evidence)
- — Printers

Primary Modules

- — Incident entry/Management
- — Persons
- — Vehicles
- — Locations
- — Arrests/Bookings
- — AFR
- — Crime analysis
- — Uniform Crime Reporting
- — National Incident-Based Reporting
- — Traffic (citations, collisions, etc.)
- — Investigations
- — Property and evidence
- — Personnel, training, scheduling
- — Activity logs
- — Crime alerts, hot sheets
- — Inventory
- — Administration
- — Pawn
- — Permits
- — Licensing
- — Animal control

Typical RMS Features (continued)

Inputs

- — CAD incident data
- — Mobile data (field officers)
  - • AFR
  - • Field interview cards
  - • Citations
- — Personnel data entry
  - • Records
  - • Property
  - • Reports
  - • Detectives
  - • Officers
- — NCIC data

Outputs

- — Reports
- — NCIC uploads
  - • Stolen vehicles
  - • Warrants
- — CAD scheduling data
- — Data for integrated justice
- — Variable exports
  - • Jail
  - • Ticket processing
  - • Parent organization applications

Human Interface

- — Who uses it?
  - • Sworn personnel
  - • Records
  - • Command staff
  - • Supervisors
  - • Detectives
  - • Jailers
  - • Property/evidence clerks
  - • Crime analysts
  - • Dispatchers
- — Who supports it?
  - • Small-medium agency: at least 1/2 FTE
  - • Large agency: 1 or more FTEs
  - • Vendor
- — How long should it take to learn?
  - • Application: 20-30 hours
  - • Administrative support: 80-100 hours
  - • Depending on skill set and database design

*This is not intended to be a comprehensive list of RMS features.

Jail Management Systems

An effective jail information management system (JMS) will assist with the full management of a jail or correctional facility, including tracking inmate and facility data. A JMS operates very similarly to a traditional RMS, only it is tailored to the information management needs of a detention facility. The JMS provides capabilities for inmate processing, classification, cell management, property, commissary, scheduling and inmate programs. Inmate information, such as medical history, gang affiliation, detention history and visitor logs, as well as digital images like fingerprints and mugshots, can be stored and linked within the JMS.

The effective JMS is integrated with automated fingerprint identification and mugshot systems to handle digital fingerprint and mugshot capture, searches, verifications and identifications against a variety of internal and external databases. Property can also be tracked and integrated into the JMS through the use of bar coding technology. In some facilities, bar coding is also used to track inmates as they move about the facility.

A key feature of JMS is its ability to assist in decisionmaking, such as the objective classification of inmates based on their risk level and gang affiliations; housing; and identifying inmates who may be eligible for early release or specific programs.

Like the RMS, the JMS offers robust tools for data linkage, analysis and sharing with other justice information systems. The JMS can also be relied upon to assist with administrative and personnel management features.

Improving the inmate management and identification process through integrated jail and imaging technologies:

HOW IT WORKS

- A suspect is arrested and brought to the booking station
- If outfitted, arresting officers may transmit arrest information directly to the JMS.
- At the station, fingerprints are captured via a livescan device, along with some basic information on the individual for identity verification and initial "match" with the local database. In many cases, the automated fingerprint identification system (AFIS) then electronically submits the prints to the State and then on to the FBI in participating States.
- Upon identification, information about the offender is returned from the State, Federal and local queries and stored in the JMS.
- Meanwhile, a mugshot is also captured digitally and stored in the JMS.
- JMS pulls historical and other information gathered and/or stored within JMS to assist in making classification and housing decisions.
- JMS links photographs, fingerprints and property to the inmate's record.
- A bar code label is affixed to the inmate's property and/or identification wristband for tracking purposes.

Typical JMS Features*

Technology Components

- — Workstations
  - • Networked PCs
  - • Monitors
- — Identix/Livescan
- — AFIS
- — Mugshot cameras/Workstations

Primary Modules

- — Booking/Inmate processing
- — Identification
  - • Wristbands/ID badges
- — Classification
- — Accounting
- — Transportation
- — Food processing
- — Housing
- — Commissary
- — Medical screening
- — Pharmacy
- — Property
- — Scheduling
- — Cell management
- — Inmate programs
- — Mental health

Inputs

- — CAD
- — RMS
- — AFIS
- — NCIC data
- — Mugshot
- — Jail employees
- — Arresting officers
- — Patrol officers via mobile computer

Outputs

- — State/Federal corrections databases
- — Other justice information system partners

Human Interface

- — Who uses it?
  - • Sworn personnel
  - • Records
  - • Command staff
  - • Supervisors
  - • Jailers
  - • Property/evidence clerks
  - • District Attorney's Office
  - • Public Defender's Office
  - • Courts
  - • Probation
  - • Parole
- — Who supports it?
  - • Small-medium agency: at least 1/2 FTE
  - • Large agency: 1 or more FTEs
  - • Vendor
- — How long should it take to learn?
  - • Application: 30-40 hours
  - • Administrative support: 80-100 hours
  - • Depending on skill set and database design

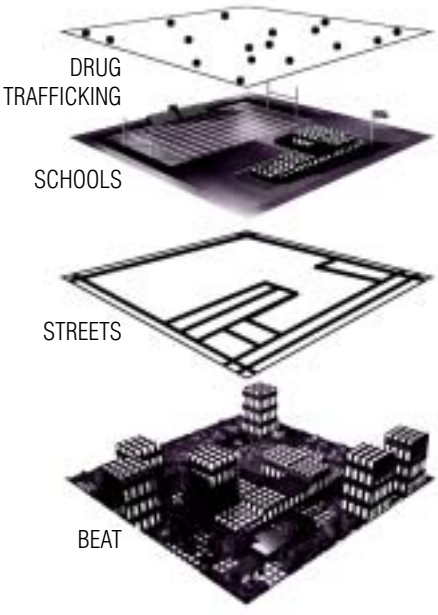
*This is not intended to be a comprehensive list of JMS features.

Geographic Information Systems, Computer Mapping and Automated Vehicle Location

For law enforcement agencies, the combination of geographic information systems (GIS), computer mapping software, and automated vehicle location (AVL) creates a powerful tool set for responding to and fighting crime. GIS facilitates effective planning for emergency response and helps agencies determine crime mitigation priorities, analyze current and historical events, and effectively analyze crime to assist in predicting and responding to future events. Furthermore, GIS allows for complex linkages and searches against a database, rather than storing information in flat files that maintain few relationships. GIS also provides critical information to emergency responders en route to an incident to assist in tactical planning and response.

Emergency Response

To develop an effective police response to an incident or emergency means that law enforcement agencies must have precise information about the location of a crime, incident, suspect or victim. The ability to access and process information quickly while displaying it visually allows decisionmakers to more efficiently determine the appropriate tactical response.

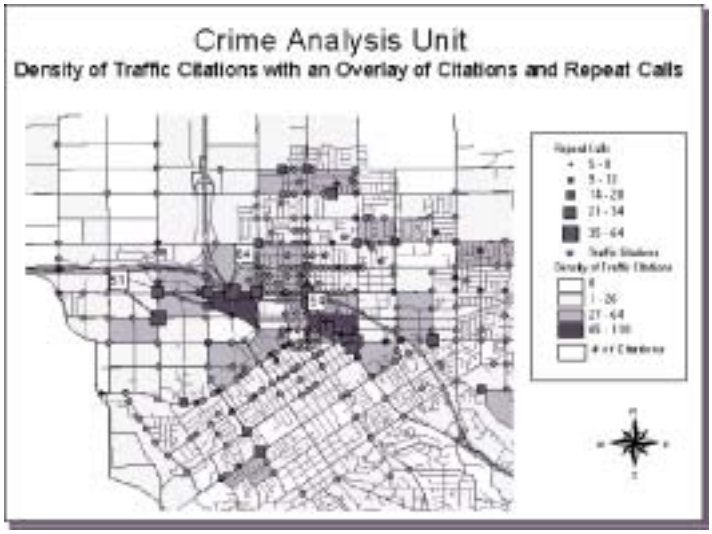


GIS is complex in that it stores information about a region in the form of "layers" connected by a common frame of reference (x/y coordinates). In addition to the specific coordinates, GIS also contains a variety of other geographic references to a specific location, such as addresses, place names, ZIP codes, phone numbers and even indirect references to geography (i.e., "300 yards from the County Jail"). This is where the true power of a GIS application comes in to play. The ability to layer the multiple pieces of informa-

Improving agency responses to crime and enabling complex analysis for crime prevention and preparedness through GIS and computer mapping:

HOW IT WORKS

- When a call for service is received, E911 ANI/ALI data populates the CAD, and the GIS identifies the x/y coordinates for the location.
- AVL provides information on agency unit location and the CAD draws upon GIS and AVL to assist in formulating a response strategy.
- Post-incident, command staff and others can review the incident and the agency's response and use GIS/AVL to assist in analyzing the effectiveness of the response and determine areas for improvement.
- Crime analysts can conduct comprehensive and complex analysis of crime, location and geographic data to identify hotspots, trends and potential emerging criminal activity. New and/or improved strategies for preventing and/or responding to crime can be developed based on these analyses.
- Community groups can access similar information via the Web or during meetings with law enforcement officials to help organize a more effective community awareness and response.

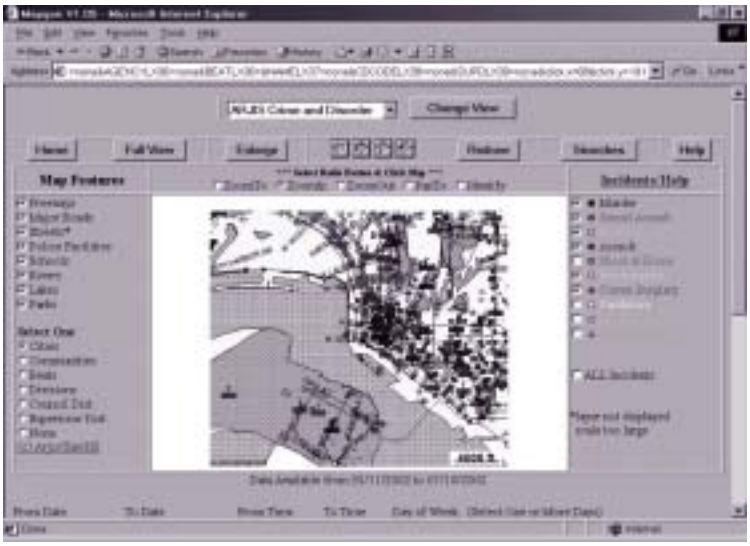


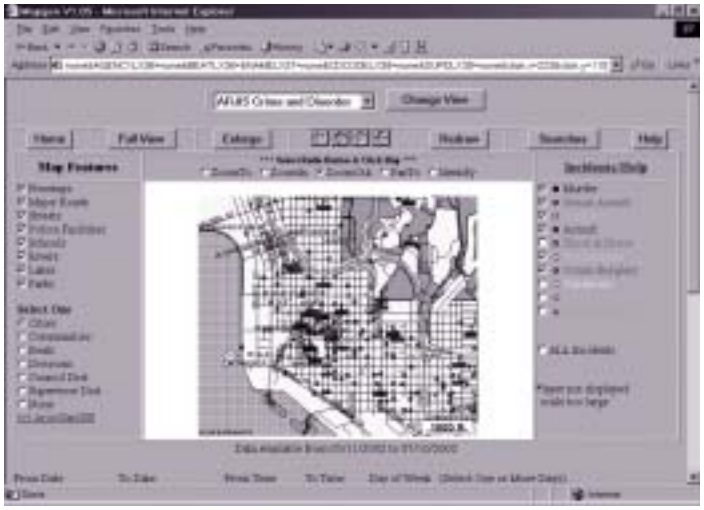
tion about a location allows a GIS to view either discrete pieces or levels of information or to increase the complexity of an analysis by layering many levels of information together to create a detailed picture.

Thus, GIS, working with computer-generated mapping, has several important applications in a law enforcement agency. A geo-based CAD system, as discussed earlier, will pinpoint the precise location of a 911 caller, an incident or a location so that law enforcement response is accurate. Used in conjunction with AVL and global positioning systems (GPS) that provide exact positioning of law enforcement units through satellite tracking, GIS can assist in deploying the right units and resources to a scene.

Crime Analysis

GIS and computer mapping have revolutionized the capabilities of law enforcement to conduct comprehensive crime analysis. GIS software, combined with computer-generated mapping programs, have replaced the traditional pin maps on the wall at headquarters that literally used push pins to identify one-dimensional criminal activity. GIS and mapping now act as an interface for integrating, accessing and displaying massive amounts of location-based information. With GIS, users can visualize crime occurrences and multiple layers of criminal activity in relationship to a variety of other factors. For example, analysts can look at drug activity in a particular jurisdiction and its relationship to school locations or to public telephone locations. So the GIS analysis not only identifies areas of criminal activity, but also the factors that may contribute to the activity taking place in a particu-





lar location or the particular population that could be affected by the activity. In addition, simply looking at crime density in particular locations is an important tool in making patrol allocation decisions.

GIS has also become more accessible to all agency users. Not only is this information directly accessible to a variety of users through desktop computer stations, but more and more, agencies are "pushing" the GIS and map software and capabilities to officers via laptops in the patrol cars and to the public via the World Wide Web.

Typical GIS Features*

Technology Components

- — Server
- — Displays
- — Scanners

Inputs

- — Base maps
- — Layers from governmental agencies (assessor, tax records, building/safety, etc.)
- — CAD
- — RMS
- — Users

Outputs

- — Maps
- — World Wide Web
- — RMS

Human Interface

- — Who uses it?
  - • Sworn personnel
  - • Crime analysts
  - • Detectives
  - • Command staff
  - • Supervisors
- — Who supports it?
  - • 1/2 FTE
  - • Vendor
- — How long should it take to learn?
  - • Application: 10-20 hours
  - • Administrative support: 80-100 hours
  - • Depending on skill set and database design

*This is not intended to be a comprehensive list of GIS features.

Appendix 2: Glossary

Appendix 2: Glossary

Acceptance testing Chapter 17, page 213

The process that an agency uses to verify that the delivered and installed product meets requirements specified in the procurement documents and contract, particularly regarding functionality, reliability and performance.

Activity Chapter 10, page 130

An element of work performed during a project that normally has an expected duration, as well as cost and resource requirements.

Ad hoc working groups Chapter 1, pages 27, 31

Groups that are formed as a subset to the project's formal decisionmaking structure to look at specific tasks and business processes that require more in-depth research or analysis, or to carry out research on and development of a variety of project-specific plans, models, policies and directions. Assembled on a temporary basis to address a specific issue or task.

Agreement for Extended Services Chapter 15, page 195

An exhibit in the contract that should be included if an agency requires continuous vendor product support. It should identify the type of service, the availability and the allowable timeframe for response and correction of various types of problems. The exhibit should detail the pricing that has been negotiated for recurring support.

Assumptions and constraints Chapter 3, page 59 and Chapter 10, page 131

Circumstances and events that can affect the success of the project and are generally out of the control of the Project Team. Include in the Project Charter to provide assistance in making/justifying decisions. Consult also when developing the project timeline and Risk Management Plan.

Automated Field Reporting (AFR) software Appendix 1, page 250

AFR automates the incident and other reporting processes from the patrol car. Optimally, AFR allows the capture of incident and report information and then electronically sends the report to a supervisor for approval and submission to the records management system (RMS).

Automatic Vehicle Location (AVL) software Appendix 1, page 257

Used by law enforcement agencies to remotely track the location of agency units via satellite global positioning systems (GPS). AVL combines GPS technology, wireless communications, street-level mapping and a user interface.

Best practices Chapter 1, page 23

Industry-proven processes or methods that, when executed effectively, lead to enhanced or superior project performance and ensure the success of an undertaking (such as planning, procurement, implementation and management).

Bonding costs Chapter 11, page 142

Bonds required may include those dealing with performance, maintenance and payment.

Business case Chapter 3, page 56

The project's marketing plan that articulates why the project is important in terms of operational benefits to the agency, the justice system in general and the public. Used to educate and inform all project stakeholders.

Business process Chapter 4, page 68

A written description of the things that employees do every day in their job functions assessed on a "what," "why," "when," "how" and "where" basis. Business processes are what technology seeks to enhance or improve.

Business Process Baseline report Chapter 4, page 72

A report created by the Project Manager that documents an organization's business processes. It is used as a reference for understanding how the organization currently accomplishes its business objectives.

Client/Server Chapter 6, page 94

An application that runs on a personal computer or workstation and relies on a server to perform some operations. A *thin client* is a client designed to be especially small so that the bulk of data processing occurs on the server.

Communications Plan Chapter 13, page 159

Formal and agreed-upon strategies for communicating project status and activities to key stakeholders, and methods for developing historical project records and archives.

Computer-aided Dispatch (CAD) System Appendix 1, page 248

Fully automates the call-taking and dispatching functions of a law enforcement agency and initiates and manages dispatch and incidents.

Consulting costs Chapter 11, page 142

Generally, a full-service consultant who provides needs analysis, project planning, procurement assistance, contract negotiations and implementation assistance, and will receive an average of 15% of the total project costs.

Contingency costs Chapter 11, page 142

Funding that is set aside for unexpected and, therefore, often unbudgeted activities. On average, contingencies range from 10–15% of the hardware and software costs.

Contract Chapter 15, page 187

A binding agreement between an agency and a chosen vendor that defines the obligations between the parties, including deliverables, services and responsibilities.

Decisionmaking structure Chapter 1, page 23

A group of agency staff that provides leadership and accountability; defines the business of the agency; analyzes technical environments, policies and solutions; and effectively manages projects. Requires participation from three key representative groups within an agency: executive, business or operational, and technical.

Deliverable Chapter 10, page 130

A measurable, tangible, verifiable outcome that must be produced to complete a project or part of a project.

Environmental scan (ES) Chapter 3, page 53

An initial step in the planning process that helps the Project Team gain perspective on the initiative by allowing the team to systematically assess factors that present opportunities or threats to the success of the project. Sometimes referred to as a situation or "SWOT" assessment, an ES contains an internal scan that identifies strengths (S) and weaknesses (W) of the agency and an external scan that identifies external opportunities (O) and threats (T) to the agency.

Executive Sponsor Chapter 1, page 24

The individual who has the ultimate accountability for the project, having authority to sanction the project and make it a priority. Serves as the project's ultimate decisionmaking authority.

Exhibit Chapter 15, page 191

Subsets of information related to the contract, usually created by the Project Team. Includes such documents as: Statement of Work (SOW); Project Deliverables; Payment Schedule; and Project Timeline.

External costs Chapter 11, page 139

The costs that most agencies associate with procurement, which are generally lumped together in three main categories: hardware, software and services. They also include the staff, resources, supplies, infrastructure, consultants and virtually all project elements that fall beyond the direct financial control of the agency or the parent organization.

Focus groups Chapter 5, page 82

A somewhat informal technique that can help to assess user needs while designing the system. Usually 6-9 users gather to discuss issues and concerns about the features of the new system.

Functional specifications Chapter 12, page 155 and Chapter 14, page 179

Precise descriptions of how a product should operate. These statements should be succinct. A Project Plan and procurement document often contains numerous such functional requirements. During procurement, vendors should be required to divulge how closely their product matches an agency's functional specifications.

Functionality testing Chapter 17, page 214

A type of acceptance testing designed to ensure that the vendor's software is functioning as described in product literature and, possibly, in their response to the agency's RFP.

Funding streams Seven Facts, page 12

Variety of means by which an agency may obtain funding for a project, including internal budgets, State and Federal grant programs, bond measures, etc.

Gantt chart Chapter 10, page 133

A popular project management charting method in which a schedule is displayed graphically. It consists of a horizontal bar chart with time as the horizontal axis and either resources, jobs or orders as the vertical axis. Individual operations are displayed as horizontal bars in the chart, indicating the time at which the job begins and ends. Many variations on the Gantt chart exist to display additional kinds of information. Gantt charts can be drawn physically on paper, but are usually implemented through computer software.

Geofile Construction Document Chapter 15, page 195

An exhibit included in the contract if an agency is purchasing a CAD application. Often the agency's base geographic information systems (GIS) must be converted into the CAD vendor's preferred format. The GIS data are used for creating a geofile in the CAD that verifies the addresses that are entered into CAD. This is a very complex procedure and warrants an individual contract exhibit dedicated exclusively toward defining how the GIS material will be converted, tested and installed into the CAD.

Geographic Information Systems (GIS) Appendix 1, page 257

Stores information about a region in the form of "layers" connected by a common frame of reference (x/y coordinates). In addition to the specific coordinates, GIS also contains a variety of other geographic references to a specific location. Other data sets include addresses, place names, ZIP codes, phone numbers and indirect references to geography.

Hardware Chapter 11, page 140

Tangible devices that enable the use of various software programs. Includes servers, workstations, laptops, infrastructure (network components) and telecommunications devices (i.e., wireless modems).

Holdbacks Chapter 12, page 154

A contract provision that allows an agency to keep a percentage of a vendor's payment until after the vendor successfully completes certain milestones. Useful for keeping the vendor interested in completing all of the tasks associated with a project, even those that are less profitable than others.

Implementation plan Chapter 16, page 207

The blueprint that enables project management to define the rules that govern how technology will be installed, tested and managed.

Information system Seven Facts, page 11

A purposefully designed system that brings data, computers, procedures and people together in order to manage the information that is important to an organization's mission.

Initial costs Chapter 11, page 137

One-time expenses to purchase technology and services for a project. Must be considered in conjunction with recurring costs (see page 269).

Internal costs Chapter 11, page 139

Those costs over which your agency has direct financial responsibility and control, including personnel costs, infrastructure costs, cost recovery fees, etc.

Invitation to Bid (ITB) Chapter 14, page 178
A procurement tool used to define an agency's requirements, contractual terms and pricing mandates. Used rarely, an ITB requires a vendor to either accept all of the terms or none.

Jail Management System (JMS) Appendix 1, page 255
Assists with the full management of a jail or correctional facility, including tracking inmate and facility data.

License Agreement Chapter 15, page 195
An exhibit included in the contract that defines what rights the agency has with regard to the use of the vendor's software.

Lifecycle costing methods Seven Facts, page 14
Methods to determine the total cost of owning the technology, from procurement through upgrade and/or replacement.

Liquidated damages Chapter 12, page 154
A contract provision that compels the vendor to pay the agency if a contracted deadline is missed.

Milestone Chapter 10, page 130
A significant event in the project, usually completion of a major deliverable.

Milestone review Chapter 10, page 134
A session in which the Project Team gathers together to review and analyze milestone completion and the process for its completion, and adjust the schedule for future deliverables and milestones, if necessary.

Mobile Data Computing Appendix 1, page 250
Comprised of several hardware and software technologies working together to allow law enforcement officers to access, receive, create and exchange information wirelessly in the field.

Module Chapter 16, page 94
A portion of a program that carries out a specific function and may be used alone or combined with other modules of the same program.

Outsourcing Chapter 1, page 37 and Chapter 11, page 141
The act of hiring an outside source to perform a service that is beyond the agency's existing resources, usually a consultant.

Performance testing Chapter 17, page 214
A type of acceptance testing that is designed to determine the speed of the combined hardware and software package during various transactions.

Performance reports Chapter 10, page 132
Provides details about project status, including which deadlines have been met and which have not. Whether prepared by the vendor or internal staff, performance reports should be provided on a weekly or biweekly basis.

Primary Agreement Chapter 15, page 189
The terms and conditions that govern the agency's relationship with the vendor. The agency's City or County legal staff often prepare the primary agreement document.

Problem escalation and resolution process Chapter 1, page 36
A formal and agreed-upon process established by the decisionmaking structure for resolving disputes and problems during a project. Includes documenting any such problems and their disposition.

Project Charter Chapter 3, page 51
A document developed early in the process (prior to the full Project Plan) that contains an IT project description, complete with scope, objectives, organization and staffing, a decisionmaking structure, the project management approach and initial resource documents. Provides guidance to project staff in planning and designing a system.

Project management Seven Facts, page 16
The application of knowledge, skills, tools and techniques to project activities in order to move the project forward to completion and to meet or exceed stakeholder needs and expectations from a project.

Project Management Institute (PMI) Chapter 2, page 47
One of the best resources for tools and support for the Project Manager. *See* **www.pmi.com**.

Project Manager Chapter 1, page 28 and Chapter 2, page 43
An individual dedicated to and accountable for all project-related activities and solely responsible for the project's scope, quality and budget. Responsible for virtually all aspects of the initiative and is formally accountable to the Steering Committee and the Executive Sponsor.

Project objectives Chapter 9, page 124
Quantifiable criteria that must be met for the project to be considered successful. A critical part of scope, objectives must include measures of quality, time, cost, performance, reliability and functionality.

Project planning Chapter 8, page 115
A dynamic process that results in a document that guides the entire IT project design, procurement, implementation and future enhancements. The Plan is the repository for all project-related research, decisions, deliverables and documents.

Project scope Chapter 3, page 58
Clearly defines the boundaries for the project. Scope addresses what users want (functions); how well the user requirements are met (quality of); when and how it must be developed (constraints); and why (the value in the project).

Project timeline Chapter 10, page 129
A mechanism to ensure the project is accurately and realistically scheduled so that it can be completed on time within the resources available. The timeline is critical to help avoid delays and associated cost overruns. Includes activities, deliverables and milestones.

Quality assurances (QA) Chapter 17, page 213
Tests that ensure the vendor's hardware and software perform according to specification.

Records Management System (RMS) Appendix 1, page 252
A system that captures, maintains and analyzes all police agency and incident-related event information and is vital to the day-to-day operations of tracking and managing criminal and noncriminal events, investigations and personnel information.

Recurring costs Chapter 11, pages 137, 139, 144
Continuing costs that must be considered to support, maintain, and enhance hardware and software and user skills. Determine in concert with initial costs (defined on page 266).

Reliability testing Chapter 17, page 214
A type of acceptance testing designed to determine the "uptime" of a vendor's solution. Typically, this testing focuses on hardware and involves the use of special software that simulates the volume of transactions that the vendor claims to be acceptable.

Request for Information (RFI) Chapter 11, page 141 and Chapter 14, page 176
A procurement tool used to elicit generalized information about vendor products and services. Pricing, if included at all, is generic and based on averages.

Request for Proposal (RFP) Chapter 14, page 176
A procurement tool used to obtain actual hardware, software and services proposals from vendors.

Request for Qualifications (RFQ) Chapter 14, page 177
A procurement tool used to determine whether a vendor meets minimum qualification standards set by the issuing agency. Does not request a proposal response with prices and specific proposal details.

Risk management Chapter 2, page 48 and Chapter 12, page 149
A planning process that prepares the agency for dealing with potentially harmful events that could happen in a technology initiative. The Risk Management Plan is prepared by the Project Manager and Steering, User and Technical Committees.

Schedule Management Plan Chapter 10, page 132
Provides a structured process for documenting, analyzing and approving changes in the project schedule. The Schedule Management Plan should be a formal process that is documented in the Project Plan.

Scope Management Plan Chapter 9, page 125
Provides a structured process for documenting, analyzing and approving changes in project scope. The Scope Management Plan should be a formal process that is documented in the Project Plan.

Scope planning Chapter 9, page 121
A process to precisely define and document specific activities and deliverables for a particular project. Clarifies and defines the project focus and keeps activities in control and within agreed-upon boundaries. Establishes a formal process for proactively managing changes in project scope.

Scope statement Chapter 9, page 122
Defines what is to be included in the project, as well as what is to be excluded. Developed by the Project Manager and User Committee.

Scope-time-cost relationship Chapter 3, page 58
The project elements of scope, time and cost are inextricably linked and have a proportional relationship. Should any one of these elements grow or reduce, the other two elements grow or reduce proportionally.

Software Chapter 11, page 140
What is required to make a system operational, including operating system software, vendor-supplied application software, third-party software and any network management tools.

Sole-source Chapter 14, page 178
A procurement tool used when an agency can show that the chosen vendor is the only vendor capable of supplying the required hardware, software and services in the best interest of the agency.

Stakeholders Chapter 1, page 25
Individuals and organizations who are actively involved in the project, or whose interests may be positively or negatively affected as a result of project execution or successful project completion.

Statement of Work (SOW) Chapter 15, page 191
Included as an exhibit in a contract, the SOW defines each task involved in the entire project. It is the blueprint for implementation.

Steering Committee Chapter 1, pages 27, 28
Members are generally high-level managers and/or supervisors within the agency. This group will ensure that a structured project management process is adopted and followed. Provides constant guidance and oversight to the project, its progress and deliverables, and will make most decisions related to the project.

Strategic IT Vision Document Seven Facts, page 15
Articulates how technology will assist an agency in meeting its core business mission and establish an ongoing process to evaluate, upgrade and enhance those technologies as business goals and technology change.

SWOT Chapter 3, page 56 and Chapter 5, page 83
An acronym sometimes used in referring to a situation assessment, SWOT stands for Strengths, Weaknesses, Opportunities, Threats. *See* Environmental Scan.

Systems development lifecycle (SDLC) Seven Facts, page 13
A cyclical process regarding IT, with several stages, including planning, procurement, implementation and management.

Technical Committee Chapter 1, pages 27, 31
Includes technical staff from the agency, as well as others from the agency's parent organization (e.g., City, County or State), if such support is provided. This committee's role is to analyze the agency's existing technical environment and to research and propose solutions to the agency's business needs and problems.

Technology Baseline Report Chapter 4, page 73

A report that documents an organization's current technology environment. Created by the Project Manager, with assistance from the Technical Committee, it is used to show how the current technology is used, as well as in determining how new technology could improve efficiency. The Technology Baseline Report is also used in the procurement process.

Total Cost of Ownership (TCO) Chapter 11, page 145 and Chapter 18, page 230

Used in budget planning, TCO refers to the total costs associated with ownership, usage and maintenance of the system over time.

User Committee Chapter 1, pages 27, 29

Includes subject matter and business process experts for the functions to be addressed. This committee's role is to assist and support in creating a Project Charter and ultimately the Project Plan. This committee will analyze existing workflows, define business processes, and look for efficiencies and establish the requirements of any new system.

Vision statement Chapter 3, page 52

Written by the Steering Committee, the vision brings a tangible reality to what the agency will address with the new system.

Work breakdown structure (WBS) Chapter 9, page 123

A component of the scope statement. Dissecting scope by breaking it down into smaller elements or projects produces specific deliverables and indicates who is responsible for enacting them. This ultimately defines activities and milestones of the full project scope.

Appendix 3: Bibliography of Resources

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Bibliography of Resources

■ Project Charter issues

Vision Statement

- **http://www.allianceonline.org/faqs.html**

  Website of The Alliance for Nonprofit Management. Provides details of what is in a vision statement, how a vision statement is used and the benefits of a vision statement. Also details risk management and strategic planning.

Business Case

- **http://www.solutionmatrix.com/**

  Business case analysis site, offering tools, training and practical help for everyone who builds the financial business case. Also offers resources, guides and a newsletter.

■ Needs Analysis

- **http://www.isdesigners.com/serv01.htm**

  Provides a brief summary of a needs analysis and its benefits. The company conducts a training needs analysis and designs the best solution based on their findings. The site provides "Tips for Writing Training Objectives" and links to Instructional Techniques, Project Management and Evaluation topics.

■ Project Planning

- *Tips for Ensuring Successful Technology Implementation.* COPS Office Fact Sheet, November 26, 2001. *See* **http://www.usdoj.gov/cops/pdf/fact_sheets/e10011344.pdf**
- **http://www.prosci.com/t1.htm**

  Offers an excellent project planning toolkit for order. This resource tool addresses such issues as project management, planning, methodology selection, team building, team selection, consultants, team readiness, objective setting, project scope and project leadership. Website offers a toolkit overview and table of contents.

- **http://books.mcgraw-hill.com/cgi-bin/pbg/0071360506.html**

  Offers this best-selling book: *Project Planning, Scheduling & Control, 3rd Edition, A Hands-On Guide to Bringing Projects in on Time and on Budget.* This practical, proven and easy-to-use book provides guidance for effective project management. The site provides a description of the book, the table of contents and online purchasing.

- **http://www.wilsonmar.com/1projs.htm**

  An extensive online guide to using project plans. Includes: Project Management Frameworks; Project Phases and Milestones; Project Goals and Outcomes; Project Processes, Roles and Deliverables; Roles: Advisors and Consultants; Project Tasks; Risk Management; Project Management Software Tools; Project Plan Views; and Best Practices for Project Management. Comments and questions can also be submitted to a support contact via email.

- **http://www.planxpert.com/**

  PlanXpert is a practical project planning tool in the form of software for IT professionals. The PlanXpert products provide a set of easy-to-use tools for creating a customized IT project plan, accompanied by a methodology of proven practices. The site offers descriptions of the three products, methodology concepts, planning and executing a project with the product. You can also request more information about the products and order them online.

- **http://gartner11.gartnerweb.com/public/static/hotc/hc00075520.html**
  Offers online article from the Gartner Group: "What to look for in an IT strategic plan."

■ Project Management

- **http://www.pmi.org/**

  Website of the Project Management Institute, a professional organization for project managers. Includes: a detailed description of a project and project management, information about annual seminars and symposia, as well as membership and education information.

- *A Guide to the Project Management Body of Knowledge*. Project Management Institute. *See* **http://www.pmi.org/publictn/pmboktoc.htm**.

- **http://www.mde.net/cio/**

  A practical guide on how to manage any project. Offers a free project management template.

- **http://www.projectmanagement.com/main.htm**

  Informational project management site includes these links: Resources (who can help), Links (to other project management sites on the Web), Tools (what tools can be used), and Online (where help can be found online).

- **http://www.project-manager.com/**

  A complete online guide for anyone who must plan, implement and complete a commercial project. Get professional advice, upgrade personal skills, exchange ideas or, above all, get your project up and running on time and within budget.

- **http://www.planview.com/**

  Offers project managing software. Includes product information and an extensive Support/Services link that not only supplies online help, but also email addresses and telephone numbers of service personnel.

- **http://www.microsoft.com/office/project/**

  Offers project management software with a free 60-day trial period to see if their features are right for the project at hand. Provides information about the product, including support.

- **http://www.tenstep.com/**

  Provides the information necessary to successfully manage projects, including processes, procedures, techniques, best practices and templates. The site starts with the basics in a step-by-step approach and becomes more and more sophisticated according to your specific project.

- **http://www.4pm.com/articles/pplanning.html**

  Resource site for project managers and executives offers project management articles, books, tools and training courses. Includes brief descriptions, prices and online purchasing.

- **http://www.performanceweb.org/default.htm**

  Website of the Performance Institute, a leading authority and repository on performance-based management practices. Site includes sections on IT and law enforcement.

- *The Accidental Project Manager: Surviving the Transition from Techie to Manager*. Patricia Ensworth. This "cheat sheet" provides practical advice and critical information to manage successful software projects. The companion Website, **http://www.wiley.com/compbook/ensworth**, provides downloadable templates, forms and links to valuable resources.
- *A Practitioner's Guide to Managing Projects in the Information Age*. Robert Ambrosino, Ph.D. Government Technology Press.
- *IT Professional's Guide to Project Management*. Tech Republic. *See* **http://www.techrepublic.com**.
- *Project Management Memory Jogger*. Paula K. Martin and Karen Tate PMP, Martin Training Associates. This pocket-sized book is an easy-to-use guide for working through any project. It features step-by-step directions for the Martin Training Associates' CORE Project Management® method that includes the activities needed to complete any project successfully. See **http://www.martintraining.net/resources/pmmj.html**.
- **http://www.allpm.com/**

  This Website, the Project Managers Home Page, is intended to help project managers succeed by building a worldwide community of project managers.
- **http://www.projectmagazine.com/**

  This online magazine is a useful resource for project managers.
- **http://www.newgrange.org/**

  Website of the New Grange Center for Project Management, an international Web-based organization.
- **http://www.projectnet.co.uk/pm/pmt/pmt.htm**

  Project Manager Today: an online journal with links to articles dating back to 1998.
- **http://www.pmboulevard.com/home.jsp**

  Project Manager Boulevard Website, which offers a knowledge center, online training, articles and other resources.
- **http://www.infogoal.com/pmc/pmchome.htm**

  Project Management Center Website, which offers links to project management news, articles and white papers, events, organizations and experts.
- **http://www.pmforum.org/**

  Website for the Project Management Forum, including links to a project management library, best practices and online forums.

■ Risk Management

- **http://www.netcomuk.co.uk/~rtusler/index.html**

  Site addresses project risk management methods and disciplines to improve the chances of completing the project on time, within budget and to meet the users' requirements.
- **http://www.aeat.co.uk/consulting/prm.htm**

  Describes the benefits of project risk management. Offers a service portfolio: definition of project risk management, when it should be used, and a plan to ensure that the whole project team is aware of what the risks are, their responsibilities in managing those risks, and how that will be achieved.
- *Managing the Risks: A Guide for Improving RFP and Procurement Practices in Justice Technology Acquisitions*. Institute for Law and Justice, for National Institute of Justice, U.S. Department of Justice.

February 23, 2000. Helps law enforcement agencies learn how to use an RFP to communicate effectively with vendors and begin the process of developing shared expectations for the project. Provides references and organizational contacts of practical, legal and educational use to justice professionals. See **http://www.ilj.org/infotech/casestudies/rfpbook.pdf**

- **http://www.allianceonline.org/default.htm**

  Website for the Alliance for Nonprofit Management offers great resources on strategic planning and risk management.

- **http://www.risksig.com/**

  PMI's Risk Management Special Interest Group. Offers forums for the professional exchange of ideas on topics related to project risk management. Includes links to newsletters, articles and resources.

- **http://fcw.com/civic/articles/1998/civic_101298_77.asp**

  Article on civic.com on risk management for IT projects.

- **http://www.cio.com/archive/041596_risk_content.html**

  Article in *CIO Magazine* on risk management.

- **http://members.ozemail.com.au/~thomsett/form/index.htm**

  Online risk assessment survey.

■ Procurement

- **http://www.itpba.com/#mission**

  Website of the Information Technology Procurement Benchmarking Association, representing IT procurement professionals. The ITPBA conducts studies to identify the practices that improve the overall operations of its members, and offers free membership and newsletter.

- **http://www.search.org/it-clearinghouse/default.asp**

  IT Clearinghouse offers database of justice agency procurement documents to use as models.

Outsourcing

- **www.outsourcing.com**

  Website of the Outsourcing Institute, a global professional association that provides outsourcing information, networking, resources, services and solutions.

- **http://www.cio.com/research/outsourcing**

  Website of the Outsourcing Research Center.

Budgeting

- **http://www.srcsoftware.com/**

  Company offers software to help businesses meet budgeting and financial reporting needs. Site provides: information about the product, contact information, and a demonstration CD-ROM.

- **http://www.techsoup.org/articlepage.cfm?articleid=197&topicid=11&CFID=2022037&CFTOKEN=35938665**

  Article on "Technology Budgeting Basics: How much should you be spending?" in TechSoup.org.

Meetings

- *Roberts Rules of Order*, 2nd ed.
- *How to Make Meetings Work*. Michael Doyle and David Straus. Berkeley Publishing Group.
- **http://www.telstra.com/business**

  Provides useful information on running meetings.

Dictionaries

- *Webster's New World Computer Dictionary.*
- *Random House Webster's Computer and Internet Dictionary, 3rd edition.*
- **http://www.pcwebopedia.com**

  Online dictionary and search engine for computer and Internet terminology.

General Reference

- **http://www.startwright.com/**

  A resource Website for IT project managers. Includes links to business process reengineering tutorials, best practices, managing change, outsourcing and procurement resources, among others.
- **http://www.rms.net/lc_briefs.html** (issue briefs)
- **http://www.rms.net/lc_tutorial_series.htm** (tutorials)
- **http://www.rms.net/lc_visitor_forum.html** (forum)
- **http://www.rms.net/self_test.htm** (self test)

  This information resource offers issue briefs, tutorials and visitor forum areas on key IT issues, such as IT budgeting and performance management, project funding and project proposals. It also offers a self test to see how your agency's IT decisionmaking process stacks up against those of "best practices" organizations.
- **http://www.search.org/integration/funding.asp**

  Provides links to grant/funding opportunities.

Websites (Agencies, Organizations and Associations)

- **http://www.search.org**

  Website of SEARCH, The National Consortium for Justice Information and Statistics. Offers sections on integrated justice and law enforcement IT, with links to news, articles, organizations, standards, vendors and other resources.
- **http://www.usdoj.gov/cops/home.htm**

  Website of the Office of Community Oriented Policing Services, U.S. Department of Justice. Provides links, news and information regarding COPS grants, programs and activities. A grant toolbox link provides useful information for recipients of COPS grants.
- **http://www.communitypolicing.org/**

  Website of the Community Policing Consortium. Offers a resource toolbox, publication, chat room and other resource.

- **http://www.iacptechnology.org**

  Website of the International Association of Chiefs of Police's Technology Clearinghouse, which offers many useful links, including articles and publications, funding resources, RFIs/RFPs and practitioner links.

- **http://www.ialep.org/**

  Website of the International Association of Law Enforcement Planners. Offers members access to an online Planning Abstract Service database.

- **http://www.techsoup.org/index.cfm**

  The Website of TechSoup, the technology assistance site.

■ Integrated Justice Information Systems

- *Defining Integration in the Context of Justice Information Systems: Toward a Common Understanding.* SEARCH, The National Consortium for Justice Information and Statistics. Provides a common framework and vernacular for justice systems integration to assist practitioners, developers and other stakeholders involved in planning efforts. See **http://www.search.org/integration/about_integration.asp#publications**
- *Toward Improved Criminal Justice Information Sharing: An Information Integration Planning Model.* International Association of Chiefs of Police.
- *And Justice for All: Designing Your Business Case for Integrating Justice Information.* Center for Technology in Government. Offers a series of lessons and tools justice officials can use to build business cases to win support and funding for integrated justice information systems.
- **http://www.search.org/integration**

  This special SEARCH Website provides articles and news, resources, publications, and technical assistance and funding information regarding integrated justice.

■ Law Enforcement IT

- **http://www.search.org/it-clearinghouse/default.asp**

  The National Clearinghouse for Criminal Justice Information Systems, which provides justice agencies with online access to a host of justice information resources, including impartial information on available software solutions and a comprehensive, interactive database of justice agency RFPs.

- *A Guide for Applying Information Technology in Law Enforcement.* National Law Enforcement and Corrections Technology Center (NLECTC). The Center offers support, research findings and technological expertise to help State and local law enforcement and corrections personnel perform their duties more safely and efficiently: **http://www.nlectc.org**
- *The Design of Information Systems for Law Enforcement. A Guide for Executives.* Charles Drescher and Martin Zaworski. A step-by-step process for determining agency needs for information — from gathering to processing to utilization.
- *Making Smart IT Choices.* Center for Technology in Government. An IT guide for public managers who are responsible for choosing, funding and building IT innovations.
- **http://www.itmweb.com**

  The Information Technology Management Web offers a variety of online resources such as benchmark tools, forums, books and white papers.

For More Information:

U.S. Department of Justice
Office of Community Oriented Policing Services
1100 Vermont Avenue, NW
Washington, D.C. 20530

To obtain details on COPS programs, call the
U.S. Department of Justice Response Center at 1.800.421.6770

Visit the COPS Internet Web site by the address listed below.

www.cops.usdoj.gov