Testimony of

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Good morning. I'm Sherry Higgins, the FBI's Project Management Executive for the Office of the Director. I have been asked to talk to you about how the FBI is fixing old problems and building a collaborative information infrastructure to better support our mission. I have also been asked to share with you some personal perspectives on how the FBI differs from the private sector in developing our computing infrastructure.

Today, we live in a dangerous world, where criminals and terrorists exploit advances in technology to perpetrate crimes against United States citizens and our national interests. High-speed digital and wireless communications, including the Internet, are the "tools of choice." Instant global communication has expanded traditional organized crime and allowed terrorists to operate from the remotest of areas.

These kinds of abilities helped facilitate the 9/11 attacks. In response, Director Mueller is restructuring and reshaping the FBI to better fit a new mission with different priorities and to put in place the analytical and information sharing capabilities needed in the post-9/11 environment. A component is the information infrastructure necessary to enhance our ability to collect, store, search, retrieve, analyze and share information. Prior testimony before Congress has described the problems the FBI is experiencing because of outdated technology. Thanks to support from Congress, the FBI has embarked on the information infrastructure revitalization that I will describe today and that is well under way. A word of caution, however. The FBI's problems with information technology didn't occur over night and they won't be fixed over night either. That is because it is more important to get it right and know that we have the systems and capabilities that precisely fit our mission as well as cure past problems.

The first major step in this direction is our Trilogy Program. The Trilogy Program was designed as a 36-month effort to enhance our effectiveness through technologies that facilitate better organization, access and analysis of information.
The overall direction of the Trilogy Program is to provide all FBI offices with improved network communications, a common and current set of office automation tools, and easy-to-use, re-engineered, web-based applications. Our Trilogy system consists of 3 components:

Information Presentation Component (IPC). Hardware and software within each office to provide each employee with a current "desk top" environment and equipment.
Transportation Network Component (TNC). High-speed connections linking the offices of the FBI.
User Applications Component (UAC). Five user-specific software applications to enhance each employee's ability to access, organize and analyze information.

The Information Presentation Component relies primarily on commercial-off-the shelf (COTS) hardware and software products that provide a modern desktop environment and connectivity, thus facilitating employees' ability to input, retrieve, manipulate and present information in text, image, audio and video formats. The Information Presentation Component is replacing our antiquated computer workstations, providing an updated e-mail capability, and includes simple things like additional printers and scanners that increase productivity. This component is nearing completion.

The Transportation Network Component is simply the telecommunications network consisting of high-speed connections linking the offices of the FBI, and the hardware, software and new workstations within each office to link at high speeds the entire FBI. It will provide connectivity between FBI facilities (via a WAN) and within FBI facilities (via a LAN), so that investigative information and analysis may be shared among agents and analysts easily, accurately, rapidly and securely, and at the high data volumes our new applications support. This is nearing completion as well.

The User Application Component is replacement of user applications that will enhance our ability to access, organize and analyze information. Specifically, the Trilogy Program will migrate five investigative applications into a "Virtual Case File" (VCF), to provide user-friendly, web browser access to mission critical information. A web-based interface will enable our users to have a graphical interface with investigative information. It will eliminate the cumbersome aspects of our current system, greatly enhance our collaborative environment and go a long way towards eliminating the problems obvious from Hanssen and McVeigh.

Under the FBI's old legacy investigative information system, the Automated Case Support (ACS), users navigate with the function keys instead of the point and click method common to web based applications. Simple tasks, such as storing an electronic version of a document today, require a user to perform twelve separate functions, in a "green screen" environment. That will soon change with Trilogy. Automated workflow will allow for a streamlined process to complete tasking. Storing a document for the record will occur with a click of the mouse button. This will make investigative and intelligence information immediately available to all personnel with appropriate security.

Enhanced ad hoc reporting, online information sharing and state-of-the-art analytical tools will permit those conducting investigations and analyzing data to easily organize and filter events and trends. Representatives from our field offices who are defining the VCF user needs are also challenging current FBI business practices to improving workflow and to ensure that archaic business rules are not automated.

Multimedia functionality will allow for the storage of information in its original form. Under the old system, agents cannot store non-compatible forms of digital evidence in an electronic format, instead having to describe the evidence and indicate where the evidence is stored in a control room. Multimedia functionality will facilitate electronic storage of digital evidence and media to the investigative case file, allowing access to the information from the desktop.

Trilogy also includes an Enterprise Management System (EMS), that supports all three of the components of the Trilogy Program. The EMS will allow the FBI to configure, monitor and

administer information systems and components through a central Enterprise Operations Center (EOC), with local Field Office visibility into the status of equipment at their location. The EMS will gather and provide appropriate IT system metrics for Trilogy from the operations center. EMS functions include mandatory and optional capabilities for fault, configuration, accounting, performance, and security management.

The original plan for Trilogy was development and deployment over 36 months from the date of the contract awards for the infrastructure and applications development, May and June 2001, respectively. The events of September 11, 2001 impacted many aspects of the FBI, including the Trilogy Program. The urgent need for improved information technologies prompted the Director to request that Trilogy implementation be accelerated, with emphasis on those capabilities most urgently needed to support the FBI's priority cases.

In response, Congress provided additional funding and Trilogy's network and desktop infrastructure improvements were accelerated. The resulting improvements are significant.

Infrastructure enhancements are being deployed in two phases.The first phase, called "Fast Track", is installation of Trilogy architecture at our 56 Field Office locations and as many of our Resident Agencies as can be completed before the second phase begins. This consists of new network printers, color scanners, local area network upgrades, desktop workstations, and Microsoft Office applications. By the end of April 2002, deployment at all 56 FBI Field Offices and two Information Technology Centers (ITCs) was completed. Fast Track is continuing to deploy this infrastructure to our Resident Agencies.

The second phase of infrastructure deployment is called "Full Site Capability," representing the complete infrastructure upgrade. The full upgrade will provide the wide area network connectivity together with new encryption devices to protect our data, new operating systems and servers, and new and improved e-mail capability. The WAN design also has been enhanced to eliminate possible single points of failure. Completion of this phase was moved from the accelerated date of July 2002 to March 2003 to allow additional time to test and deploy a secure, operational system.

The Enterprise Operations Center (EOC) facilities, circuit and bulk fiber installations, electronic key management system, and installation of encryptors are all on schedule.

User training on the new desktop office automation software has begun and a new training management system deployed.

The UAC component is scheduled to be delivered by January 2004, or four months ahead of the original schedule. And although the Trilogy Program is accelerating the network and desktop infrastructure ahead of applications development, there are significant benefits to modernizing the infrastructure before the upgraded applications are available. Infrastructure enhancement will immediately provide FBI field offices the high-speed connections to link with one another (and within each office) and share investigative and administrative information currently available in their legacy systems. It will provide nearly every FBI employee a modern desktop, and applications and database productivity tools, which will significantly enhance work productivity.

Further, during the interim while Trilogy UAC is under development, the FBI is enhancing some of our existing legacy systems to enable web access to certain applications. So, for example, two new capabilities are the Case Control system and Global Index Application. The Case Control system was delivered in April 2002; the Global Index Application was delivered in April 2001. The Case Control System keeps track of the location of each Counter-terrorism related hard copy file, as it is routed to our field divisions and nine scanning centers; this ensures that all files are scanned and accurate file locations maintained. The Global Index Application allows the user to search for a name, date of birth, address, and/or phone number, against four of our main investigative applications systems (ACS, IIIA, CLEA, and TA), with one query, returning basic case information.

The User Application development is now planned in two increments. The initial VCF release will migrate data from the current Automated Case Support (ACS) and IntelPlus to the VCF. VCF Release One has a targeted completion date of December 2003. This release will allow different types of users, such as agents, analysts, and supervisors, to access information from a "dashboard" that is specific to their individual needs. This VCF release will also enhance our capability to set and track case leads, index case information, and move document drafts more quickly through the approval process, with digital signatures.

The second release will migrate the Criminal Law Enforcement Application (CLEA), Integrated Intelligence Information Application (IIIA), and Telephone Application (TA) into the VCF. VCF Release Two has a targeted completion date estimated for June 2004. It will provide Audio/Video Streaming capability and provide our agents with "content management" capability. This will help them access information from our data warehouse, regardless of where in the system the information was entered. For the first time we will have a "one query does it all" capability.

The VCF Team is currently using an industry-standard process called Joint Application Development (JAD) planning, to define and prioritize the users' operational requirements. By joining the application developers with the users (agents, analyst, and support personnel), applications will be built that will reflect the items needed by these individuals to perform their jobs. This approach differs from the old way of doing business: figuring out how to do your job with the tools you already have. JAD is not a rebuild of the old system. It has brought users, designers, future systems operators together to develop applications that are operationally sound and maintainable. JAD sessions started at the end of January this year and are expected to conclude next week. Additional JAD sessions will take place as part of the process for VCF Release Two.

As with any automation project, a number of risks must be managed to a have a successful Trilogy Program deployment. The top three are all related to our aggressive deployment schedule. I believe all are manageable. They are: TNC/IPC and UAC test and acceptance; the enterprise operations center; and legacy system interoperability.

Before we deploy our Full Site Capability infrastructure to the field, we need to test the desktops, servers, and networks to ensure that there are no problems with our final configuration. Our current schedule allows a tight allocation of time for testing, which leaves little room for resolving potential problems. To mitigate this risk, the test team is prioritizing requirements and developing a common understanding of system acceptance test coverage, conditions, and criteria.

Once identified, the plan is to test the most critical aspects of the system first, and, if necessary, continue testing the non-critical areas during initial deployments.

Our aggressive schedule also leaves little time for EOC preparations in support of the deployed infrastructure. To mitigate this risk, current available EOC staff will be trained to support the Trilogy infrastructure and additional external resources will be identified for full operational support at the start of FSC deployment. Finally, contractor personnel will be utilized to supplement government staff for network services, central systems, security and the data center.

Interoperability with legacy applications is another risk area. There is currently a lack of documentation in place that captures the old legacy system functions and operations. Therefore, the UAC team is still identifying new interfaces and modifications to existing interfaces. Our schedule allocation for engineering and testing may not be adequate for successful integration infrastructure deployment with the current applications and servers. To mitigate this risk, the test team is also prioritizing these test requirements and developing a common understanding of system acceptance test coverage, conditions and criteria.

Once we catch up to a standard PC environment, the future looks very positive. We are planning for a technology refreshment program (TRP) which will replace Trilogy network and workstation hardware, network data storage, server hardware, and embedded software on a periodic basis to prevent system performance degradation and rising O&M costs due to obsolescence. The TRP also envisions the incorporation of new technology as it becomes available in the private sector and the study of emerging technologies to evaluate potential future uses and benefits and to better anticipate future resource needs. In essence, a viable infrastructure technology refreshment plan is essential to maintain the benefits of the Trilogy investment, the efficiency and capabilities of FBI investigative support systems and to better plan and budget for out year expenditures.

I have been asked to provide my personal perspective on what I have changed since reporting to the FBI this March, and how the FBI contrasts with my experience in the private sector.

Before my arrival at the FBI, the Trilogy Program was overly focused on achieving an accelerated schedule. Although the Trilogy Program will still be brought in ahead of its original schedule, we have begun allowing for more test time to ensure we deliver a quality product to the field. Industry best practices recommend "building in quality", instead of "inspecting it in". Using quality standards and compliance up front will allow us to identify and prevent mistakes that would require expensive fixes later on down the line.

Effective communications within and without the Trilogy Program is also essential to our success. I am in the process of developing a Trilogy Communications Plan that will promote effective communications across our business enterprise, so that valuable development information is not retained in pockets.

I am also developing an integrated master schedule for the Trilogy Program, which will reflect the program's critical path, dependencies and integration tasks between our three components. We will constantly review this schedule to capitalize on efficiencies and schedule improvement opportunities.

One of the striking differences between the private sector and the FBI is the Bureau's lack of a dedicated corps of acquisition specialists with which to plan, develop and manage large projects. The FBI has many talented people with some of these requisite skills; we have pockets of expertise in program management disciplines, such as financial analysis, budgeting, contract management and system engineering, residing in different divisions. However, the FBI has operated for too long without an organization responsible for proper development business practices, which would ensure that FBI systems under development are responsive to our users' requirements.

Private industry and most government agencies recognize the advantages of instituting a project management executive with a project management office to manage complex, expensive, high-risk development efforts. According to the Gartner Group, "enterprises utilizing a project office to manage the growing complexity involved with creating or acquiring--and then implementing and managing--these applications have a distinct advantage over those that do not.". Perhaps the most frustrating experience I have had since coming to the FBI from private industry is trying to work information technology issues that cut across the FBI's organization. "Stove piped" communications internal to the FBI prevents information and communications flow that is required to be responsive to our users and oversight. Successful project development and implementation at the FBI requires constant and accurate communications across our entire business enterprise.

To make this a reality, I have recommended, and Director Mueller has approved of the establishment of an Office of Programs Management. This office will develop, manage, and deploy high-priority, complex and high-risk projects of high dollar value, to successfully support the FBI's operational mission. The office will have a staff of subject matter experts in key program management functions, matrixed to development project managers. These project managers will be "loaned" from their sponsoring divisions to the Office of Program Management during the development of the project, from the concept phase until the project is ready to be transitioned to operations.

In addition, the Office of Program Management will be charged with using repeatable processes for these efforts; in other words, we will implement a business approach to our large acquisition efforts, by instituting core program management disciplines from a project's concept phase until it is transitioned to operations and maintenance. We will train a skilled corps of FBI PM subject matter experts, and advise the FBI Director on program management and acquisition-planning related organizational issues, proposals, and strategies.

Because of its user/management orientation, the Office of Program Management will be in a position to make the most informed recommendations concerning trade-offs between performance, schedule, and costs of projects, to determine the best course for return on the FBI's investment in IT. This office will also gauge the impacts of delays of delivered functionality for the field divisions and headquarters, and develop budget justifications for the acquisition of required resources to support approved systems projects.

In summary, Trilogy gives the FBI workable standards and a base it can build upon. Trilogy is being built to allow for interchanges with different systems, internal and external, so that the historical problem of "not putting the pieces together" is no longer an issue. Trilogy will provide

the resources and tools the FBI needs to support investigations and the critical building blocks for future improvements. The Trilogy Program is focused on getting these critical resources to our Special Agents and field support personnel as quickly as possible.