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Accounting and Information
Management Division

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Mr. George V. Cava
Comptroller
11th Support Wing
Financial Management and Comptroller
Department of Air Force

Dear Mr. Cava:

This letter responds to your January 26, 1995, request that we sanction the operation of your automated travel system (FASTravel) at Langley Air Force Base and the Pentagon for a 1-year test. You requested our views on whether (1) electronic travel records can replace paper travel orders and travel vouchers, (2) a Defense Finance and Accounting Service (DFAS) disbursing officer can rely on electronic records generated outside of his/her control to record obligations and generate disbursements, and (3) GAO requires that travel receipts be retained by a disbursing officer or an Air Force Finance Office.

We reviewed the material attached to your letter and other information provided by your staff and believe that a limited test is warranted. We did not test your current or proposed system, and, consequently, our response only addresses your proposal conceptually. The following discusses our views on these issues in more detail.

Electronic Records and Signatures Can Replace Paper Documents

GAO has long recognized that agency records need not be maintained in their original paper form. For example, we have found microfilm and similar technologies to be acceptable for storing the data on paper documents. A 1991 Comptroller General decision, 71 Comp. Gen. 109 (1991), addressed whether government contracts generated and stored electronically rather than on paper satisfied a statutory requirement that the contract be "in writing." In this decision, we stated that electronic technology that allows the data "to be examined in human readable form, as on a monitor, stored on electronic media, recalled from storage and reviewed in human readable form," can provide data integrity that is equal to that of a paper document. We also noted that although electronic documents are stored in a different manner than paper documents, they ultimately take the form of visual symbols.

As stated in that decision, we believe that it is sensible to interpret federal law in a manner to accommodate technological advancements unless the law by its own terms expressly precludes such an interpretation, or sound public policy reasons exist to do otherwise. We are not aware of any law or public policy that generally requires travel records such as yours to be retained in paper form.

As we noted in a November 1994 letter to DFAS,¹ any system, regardless of the technology used, must incorporate adequate controls to ensure the integrity of the data. Your proposed system would use electronic signature techniques for the necessary data integrity. However, based on the information provided and discussions with your staff, FASTravel has weaknesses in the electronic signature techniques used. These weaknesses, as we will discuss, are significant enough to preclude the widespread use of your system and prevent your system from meeting the electronic signature criteria contained in 71 Comp. Gen. 109 (1991). We can support a limited test because you have adopted special techniques and other controls that should reduce your risks to an acceptable level. We were also assured that the controls discussed in this letter and those described to us will be implemented properly and that additional control improvements will be incorporated as experience is gained.

Our concerns with the electronic signature techniques involve the signature generation and validation process. For example, the electronic signatures are not generated in accord with the procedures outlined in the applicable Federal Information Processing Standard published by the National Institute of Standards and Technology (NIST),² and the signature validation techniques are inadequate. We do not sanction electronic signature systems that use algorithms and techniques not approved by NIST.³ We have discussed with your staff some of the improvements, including compliance with NIST standards and signature verification techniques, that we believe are needed in your electronic signature system before widespread implementation and were promised that such improvements would be made. As agreed, we will continue to work with you and your staff on identifying the specific changes that are needed.

¹Electronic Imaging (GAO/AIMD-95-26R, November 10, 1994).

²This standard provides the algorithm and implementation guidance for the electronic signature methodology used in FASTravel. Under the requirements of the Computer Security Act (15 USC 278g-3(a)(3)), NIST is responsible for establishing standards for federal computer systems that process sensitive but unclassified information.

³RCAS Authentication (GAO/AFMD-93-70R, May 4, 1993).

A Disbursing Officer Can Rely on Electronic Records When Adequate Controls Have Been Implemented

An agency is required by 31 U.S.C. 3512(c)(1) to establish and maintain a system of adequate internal controls to safeguard government resources. Appendix II of GAO's Title 2,⁴ also directs each agency to have an effective system to monitor the implementation of and ensure the adequacy of its internal control structure. This includes a requirement that agencies test their controls in sufficient scope, depth, and frequency to provide reasonable assurance that key processing procedures are working and reliable. As noted in GAO's Title 7,⁵ disbursing officers must ensure the (1) propriety of the voucher, (2) legality of disbursements, (3) correctness of computations, and (4) accuracy of the facts stated on the vouchers and supporting records.

In the current paper-based process, the disbursing officer satisfies these requirements by obtaining and reviewing a signed paper document along with any necessary supporting documentation, such as rental car and hotel receipts. All the information and documentation needed to accomplish the disbursing officer's responsibilities are maintained and processed by DFAS's systems.

FASTravel would radically change this traditional approach. The disbursing officer would routinely rely on electronic information generated at the travel locations and would not have the paper documentation.⁶ For example, the detailed travel information would be maintained and audited for compliance at an Air Force travel office and not by the DFAS disbursing officer.

You asked our views on whether a DFAS disbursing officer could rely on FASTravel electronic records and the associated system of internal controls or whether, in this case, a disbursing officer would be needed at the Air Force location to verify the data for the DFAS disbursing officer. (Enclosure I describes our understanding of how you plan to use FASTravel and your proposed internal control structure.)

When a disbursing officer is confronted with a high volume of transactions and geographic dispersion of activities, it may be impractical for the disbursing officer to examine personally each individual transaction. GAO has recognized that to fulfill their responsibilities, disbursing officers will

⁴"Accounting," GAO's Policy and Procedures Manual for Guidance of Federal Agencies.

⁵"Fiscal Guidance," GAO's Policy and Procedures Manual for Guidance of Federal Agencies.

⁶When necessary, the proposed system would allow disbursing officers to obtain the paper records or any other information they need to support a payment.

need to rely on a system's internal controls and personnel who process transactions. Title 7 discusses this concept and the disbursing officer's responsibilities to ensure that an adequate internal control system is used and the system is reasonable. We believe the proposed approach, if properly implemented, will permit the DFAS disbursing officer to meet these requirements. Therefore, disbursing officers would not be needed at other locations.

Most Receipts May Be Retained by Travelers

Currently, travelers submit receipts for audit and retention to DFAS. Title 7 recognizes that alternatives may be used when the government's interests are protected. For example, in a recent letter to the Department of State, we approved a similar proposal to allow travelers to retain their receipts.⁷ Under FASTravel, the traveler would be required to maintain the necessary receipts at his or her place of employment⁸ for the period specified by your current records retention requirements. A statistical sampling methodology, in accordance with GAO's Title 7 requirements and approved by DFAS, would then be used to select vouchers for audit by an Air Force finance official at the FASTravel location.

When a voucher has been selected for audit, the employee would be required to submit the necessary receipts, and the voucher would be audited using procedures that have been approved by the FASTravel location and DFAS. These records would then be retained at the local FASTravel Finance Office in accordance with current records retention requirements. Enclosure II outlines our understanding of the sampling and records retention concepts that you plan to use.

Your staff believe that the sample results help assure both the FASTravel location and the disbursing officer that the controls are working as designed and that claims are properly documented. They also noted that processing and storing unneeded paper is costly and unproductive.

We note that your proposal appears to require a significant change in culture. As a result, Air Force travelers will need detailed guidance and training on their record retention responsibilities. Properly implementing the proposed approach provides an acceptable alternative to reduce the amount of paper that must be retained and processed by management

⁷Employees' Travel Claims (GAO/AIMD-95-71R, February 6, 1995).

⁸If an employee separates from the location where the travel voucher is processed before 120 days has elapsed, then the receipts would be provided to the Finance Office and retained in accord with the current records retention requirements.

while providing reasonable assurance to the disbursing officer that sufficient evidence exists to validate a claim.

We are pleased to sanction the operation of FASTravel, on a test basis involving Langley Air Force Base and the Pentagon, for a 1-year period to begin in February 1995. This letter does not constitute GAO approval of your financial management system, as defined by 31 U.S.C. 3512(f)(2).

We recognize the challenges that your agency faces in automating its administrative systems and appreciate the opportunity to comment on your travel system. We hope that our comments will assist your efforts. Should you have any questions, please contact Chris Martin, Assistant Director, at (202) 512-9481.

Sincerely yours,



Rona B. Stillman
Chief Scientist for Computers
and Communications

Enclosures - 2

GAO's Understanding of How the Air Force's Approach Will Help Disbursing Officers Properly Discharge Their Responsibilities

This documents GAO's understanding, based on discussions with Air Force and DFAS staff, of how the FASTravel system would satisfy the Title 7 responsibilities for disbursing officers. We did not perform any tests of the current or proposed system and, consequently, our response only addresses the proposal conceptually.

Propriety of the Voucher

In the current system, a paper voucher, approved by DFAS and the Department of the Treasury, is used to document a travel claim. Since electronically stored data cannot be understood by a human without taking the form of visual symbols, FASTravel must be able to convert the data stored electronically into a human readable form and generate it in a format that is acceptable to DFAS and Treasury. We understand that DFAS will review and approve the FASTravel report formats that are considered official representations of the travel data.

Legality of Disbursements

A disbursing officer is required to ensure that a disbursement is in accord with an appropriation's purpose, amount, and time the appropriation is available for expenditure. Each of these is discussed below.

Appropriation Purpose

A disbursement can be made only against an appropriation for purposes authorized by law. For example, if an appropriation is not available for travel, then the disbursing officer cannot disburse funds for travel costs against that appropriation. Your proposal uses three control methods to ensure compliance with purpose restrictions—automated edits, approving officials, and statistical sampling—before a disbursement is generated.

First, as we understand your proposal, DFAS would identify the funding accounts available to pay travel costs. Then, the location implementing FASTravel would ensure that FASTravel uses only accounts approved by DFAS.¹ Next, automated edits would ensure that travel data are charged only to approved accounts. In addition, when the data are received from the FASTravel location, the disbursing officer would use automated edits to verify that travel is only charged to approved accounts.

As noted elsewhere in this letter, approving officials and statistical sampling are also to be used to assure the disbursing officer that the travel is in accord with an appropriation's purpose. For example, we understand

¹A location may decide that it does not want travel charged to specific accounts allowed by DFAS and could restrict such charges. However, it cannot add accounts that have not been approved by DFAS.

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an approving official would verify that the purpose of the trip is for the stated reason. The vouchers selected by statistical sampling would then be audited to ensure that this control has been effectively implemented.

Appropriation Amount

A disbursing officer is not allowed to disburse amounts that exceed the amount appropriated by law and the corresponding apportionments and allotments. FASTravel and DFAS would use automated edits to prevent this occurrence. For example, as we understand it, FASTravel would verify that funds are available before allowing the approval of a travel order and before a disbursement request is sent to DFAS. It is our understanding, that when DFAS receives the data, it also would perform automated funds availability checks.

Time Availability of an
Appropriation

Obligations can be incurred and disbursements charged against an appropriation and the corresponding apportionments and allotments only for the time period specified by the appropriations law during the time the appropriation is available. We also understand that the FASTravel and DFAS systems would have edits to ensure that these requirements are met.

Correctness of
Computations

Your staff explained that FASTravel would use automated methods to compute travel claims and ensure that the resulting computations comply with DFAS requirements. For example, FASTravel would compute the per diem due an employee by multiplying the rate approved by DFAS for the travel location by the time spent at that location. Since the disbursing officer would be expected to rely on the computation methodologies in FASTravel, we understand that DFAS would be responsible for determining whether FASTravel's rates and computations are correct. In addition, the location implementing FASTravel is responsible for ensuring that FASTravel only uses rates approved by DFAS and that any changes in computation methods are approved by DFAS. Further, to ensure that the system has not been improperly modified, we were told DFAS and the operating location would periodically review selected FASTravel systems to ensure that the proper rates and computation methodologies are being used.

Accuracy of the Data
on the Vouchers and
Supporting Records

As explained to us, FASTravel also would use approving officials, automated edits, and statistical sampling to ensure that the information contained on a voucher is accurate and properly supported. Your staff believes, and we concur, that this approach can satisfy the requirement that disbursements

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are based on properly supported vouchers containing accurate information.

Role of Approving Officials

The Air Force proposal would use an approving official (normally an employee's supervisor) who has knowledge of the employee's travel to help the disbursing officer² assess whether the information contained on a voucher is reasonable. For example, the approving official should know that departure and arrival times and charges incurred for phone calls are reasonable.

The Air Force proposal also would define explicitly the responsibilities of approving officials and disbursing officers and ensure that these individuals, through training sessions and other methods, understand them. We understand that these responsibilities would be formally documented and approved by DFAS. In addition, DFAS and the FASTravel locations would conduct periodic tests to determine whether the approving officials understand, and are fulfilling, their responsibilities.

Automated Edits and
Statistical Sampling

Although the approval process is a critical control, it will not ensure by itself that the claims shown on a travel voucher are properly documented or are in accord with DFAS requirements. For example, the approving official is not required to verify that the amount shown on the voucher for lodging (1) agrees with the receipt obtained by the traveler and (2) is in accordance with DFAS requirements. However, FASTravel would address this requirement by using automated edits and statistical sampling.

We understand that FASTravel would have numerous edits to assist the disbursing officer and others in assuring the accuracy of a claim. As it was explained to us, DFAS would be responsible for specifying the edits that must be implemented at all FASTravel locations and how exceptions should be handled. The Air Force location implementing FASTravel would be responsible for ensuring that the DFAS edits are properly implemented. This would include ensuring that exceptions are handled in accord with DFAS approved procedures. Each location also could add or modify edits to improve the integrity of the process. For example, DFAS may require that vouchers claiming more than \$50 in phone calls be reviewed by an appropriate official. The location operating FASTravel may decide to use more stringent criteria such as reviewing any voucher claiming over \$10 in phone calls. We were told that periodically, DFAS and the operating

²An approving official is not a disbursing officer.

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location would review selected FASTravel systems to ensure that the proper edits have been implemented.

We note that FASTravel would use automated edits and computations to ensure that the travel claims comply with DFAS requirements. For example, DFAS may require that per diem costs to a particular city not exceed \$75 per day. FASTravel would take the data entered by the traveler and ensure that this limit has been not been exceeded. It also would compute the amount due the traveler. It is our understanding that DFAS would review the FASTravel system to determine that it has implemented the proper edits and computation methodologies. Although automated edits assist in determining the validity of a claim, they cannot determine whether the claim is properly documented nor can they fully replace the role of a human reviewer. As noted in the above letter, you plan to use statistical sampling to provide additional assurances. Also, the results of your 1-year test should help DFAS formulate effective approaches to ensure the integrity of all FASTravel software.

FASTravel Sampling and Records Retention Concepts

The following outlines our understanding of the sampling concepts that are planned for FASTravel.

- All vouchers that exceed \$2,500 would be audited.
- During the first 3 months, the finance office at each FASTravel location would select 50 percent of the payment vouchers submitted for audit. They will be audited in accord with local procedures which will incorporate applicable DFAS requirements.
- The sample results for the first 3 months will be evaluated to determine the electronic records' accuracy. If these sample results provide reasonable assurance that the claims are accurate and properly supported, then a monthly statistical sampling¹ approach would be adopted. These samples should provide reasonable assurance that the electronic data accurately represent the underlying supporting data and identify any needed corrective actions. DFAS would approve the sampling methodology used.
- Employees would receive training and other information on their responsibilities for maintaining supporting documentation before being allowed to use FASTravel.
- Procedures would be implemented to ensure that departing employees provide to the finance office the receipts for any travel during the prior 120 days before FASTravel begins operation. These procedures include formally notifying departing employees of their responsibilities—and how long—to maintain their travel receipts. Also, the receipts obtained by the finance office would be maintained in accord with current records retention requirements.
- The results and documentation for all samples would be maintained at the FASTravel location's finance office. The results would also be forwarded to the appropriate disbursing officer and DFAS would periodically review selected samples and the methodology employed at selected FASTravel locations to ensure that they comply with DFAS guidelines.
- All sample results and associated documentation would be maintained in accord with current record retention guidelines for travel records.

¹All statistical samples would employ a methodology that conforms to GAO's Title 7 requirements.

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