No. 97-276C
(Filed June 16, 2000)

* *	* Contracts; Contract Disputes Act of 1978, 41 U.S.C.A. §§ 601-613 (West 1987 & Supp. 2000); illegal contract; recovery under illegal contract; reformation; fixed-price incentive contract; superior knowledge; mutual mistake; "not-to-exceed" clause; constructive changes; impossibility; damages; total cost and "jury verdict" approaches.
NORTHROP GRUMMAN CORPORATION,	
Plaintiff,	
v.	
THE UNITED STATES,	
Defendant.	
* *	*

William W. Thompson, Jr., Alexandria, VA, for plaintiff. Jeffrey B. Krashin and Martin Healy, Thompson & Waldron, Alexandria, VA, and Richard P. Rector and William J. Crowley, Piper Marbury Rudnick & Wolfe LLP, Washington, DC, of counsel.

Kyle Chadwick, Washington, DC, with whom was Acting Assistant Attorney General David W. Odgen, for defendant. Laurie Baird Hurley, Marine Corps System Command, of counsel.

OPINION

MILLER, Judge.

This contract action, before the court after trial, juxtaposes the military's evolving requirements and a contractor's over-ambitious assessment of its capabilities to meet them. In the circumstances the contractor questions the military's choice of a fixed-price incentive contract and the mushrooming of labor hours expended in responding to fluid requirements. The military defends the choice of contract type, disputes the charge of illegality, and blames the contractor for spending $34 million on a $22 million contract. The court concludes that Congress precluded this type of contract during three years of its performance, but that damages shall be determined under the contract. Plaintiff is entitled to an award on some of its claims; with respect to constructive changes, which dominated trial, plaintiff has failed

to establish that the Government ordered most of the constructive changes and, even if so, to prove its damages with the requisite certainty.

FACTS

In the mid-1980s, the military identified a need to upgrade its Vietnam-era Tactical Air Command Central ("TACC"). This objective to advance the command and control of Marine Corps operations gave birth to the Advanced Tactical Air Command Central (the "ATACC"). From this nascent concept, the Navy and the Marine Corps commenced the development of the ATACC, the subject matter of the instant case. 1/

The ATACC was to be a set of four modular shelters that could be transported onto the battlefield to provide local command and control. Each shelter was to house sufficient hardware (including desktop terminals, operator consoles, and communications equipment) and software (including software for various military communications protocols, message generation, and database management) for the Marine Corps operators to plan and implement airborne strikes. This portable command and control center was to replace the TACC, which contained outmoded equipment and software and was housed in an inflatable bubble.

On February 7, 1986, the Government prepared the Software Baseline Estimate. It estimated the lines of code ("LOC") to be developed by the eventual ATACC contractor to be between 52,200 and 121,200. The estimate concluded that a total of 182,000 to 240,000 LOC would be required. The difference between the two estimates entailed code furnished by the Government or already in existence.

On November 17, 1986, United States Navy Space and Naval Warfare Systems Command ("SPAWAR") finalized the ATACC Acquisition Plan 86-16 (the "Acquisition Plan"). The Acquisition Plan calls for, among other items, a standardized Navy computer -- the AN/UYK-14/43/44 -- which can use the CMS-2 compiler, Tactical Digital Information Link ("TADIL") 2/ software to be government-furnished information ("GFI"), and developmental items ("DI") to be mainly software in the information-management area of the ATACC program. The Acquisition Plan labels the software risk as "moderate and manageable."

1/ Although the facts of the case are developed extensively in this section of the opinion, additional facts are presented and discussed in the relevant subsections.

2/ This opinion is burdened with acronyms and compound acronyms, the leitmotif of technospeak. The court's list of acronyms and compound acronyms that the witnesses used during trial totaled eleven pages.

In August 1986 SPAWAR opened the ATACC request-for-proposal ("RFP") library at Calculon Corporation, a government contractor providing support for the ATACC program. The library contained almost all of the information required to bid on the RFP; some limited information related to tracking capabilities was classified and not in the library. Grumman Data Systems, Inc. ("GDS"), became interested in the project. GDS was a division of Grumman Aerospace Corporation ("Grumman"). (Northrop Corporation acquired Grumman on May 18, 1994, forming Northrop Grumman Corporation ("plaintiff")). The types of documents that GDS personnel could have reviewed (or copied) at the library included the first draft Statement of Work ("SOW"), operational documents, TACC documents, military standards ("MIL-STD"), and Data Item Descriptions ("DIDs"). GDS used the Calculon library, copied a complete Marine Tactical System ("MTS") protocol and encountered no barriers to review of all the documents in the library. At approximately this time, SPAWAR held a pre-RFP industry conference for the ATACC program. Before SPAWAR released the ATACC RFP, GDS sent several representatives to SPAWAR to identify the Marine Corps's needs regarding the ATACC program.

SPAWAR issued the ATACC solicitation on April 30, 1987. Two months later the Marine Corps completed the MTS message specification.

GDS composed a proposal team that included, among others: Richard F. McLean, the ATACC Software Manager; Joseph A. Cotellessa, the Manager of the Battle Management Subsystem for the ATACC; Dr. Joseph H. Kullback, Senior Systems Architect; Harold LaWare, Vice President of Technical Operations for GDS; and William T. Bonner, Engineering Manager. Dr. Stuart A. Steele, Vice President of GDS, was responsible for technical solutions, costing, staffing, and personnel for the program.

To generate an LOC estimate, Mr. Cotellessa used the Constructive Cost Model ("COCOMO"), a widely accepted estimating tool. COCOMO is a top-down tool that generates an estimate of man-months of labor based on projected LOC. Because it is a modeling tool, COCOMO must be calibrated properly, usually by use of past results. Dr. Steele testified that Mr. Cotellessa had someone calibrate COCOMO based on three past projects. Dr. Steele believed the LOC estimate generated by COCOMO was reasonable. Mr. Cotellessa supervised the estimates of all GDS software proposed for the ATACC. Mr. Cotellessa used the ATACC specification to generate an architecture. Then, he used the lowest level requirements to determine how many LOC of existing products needed to be modified. For new software Mr. Cotellessa constructed from bottom up a structure to estimate the LOC needed for all new items by asking members of each project group within GDS what they considered their portion of the ATACC software development would require. COCOMO resulted in a more pessimistic schedule than the bottom-up model. GDS used the COCOMO estimate when it made its proposal because COCOMO was able to be segregated into skill areas.

No confidence interval was assigned to either estimate. Dr. Steele testified that he did not usually assign confidence intervals to LOC estimates.

Concurrent with the generation of its proposal, plaintiff undertook risk assessments regarding the ATACC project. Mr. LaWare personally evaluated the risk and concluded that it was very low because of the amount of non-developmental items ("NDI") that GDS proposed for the project.

On August 20, 1987, SPAWAR finalized the Source Selection Plan (the "SSP"). Four days later GDS submitted its proposal. GDS proposed an ATACC based predominantly on NDI hardware and software. The GDS NDI software had been developed earlier for other government programs, such as Commander in Chief Display Support System, Maritime Defense Zone, and the Ocean Surveillance Information System Baseline Upgrade .

After it submitted its proposal, but before submitting its best and final offer ("BAFO"), GDS, during April 1988, demonstrated its ATACC concept to the Marine Corps and SPAWAR. The RFP permitted demonstrations, and GDS seized upon this opportunity to market its concept. In attendance at the demonstrations were senior GDS personnel and ATACC team members, as well as high-ranking Marine Corps and SPAWAR personnel. GDS treated its guests to an almost complete functioning system and a videotape that demonstrated GDS's mock-up. Mr. McLean oversaw the demonstrations. Mr. LaWare testified that this demonstration was a departure point from which to tailor to the Marine Corps's needs. The live-test demonstration included NDI software and some DI software. GDS continued to demonstrate its mock-up on numerous other occasions to others in the military. For the mock-up GDS wrote the code in Fortran, which was not permissible for the finished product; however, Mr. McLean thought that GDS had three to four weeks to assemble the demonstration and knew that this was insufficient time to generate a demonstration in Ada, which was the programming language called for by the specification. GDS actually had four months to generate the mock-up, which Mr. McLean testified would have been sufficient for him to develop an Ada-based mock-up. Although GDS used a non-developmental Fortran version of Air Tasking Order ("ATO") software that would later need to be replaced by a developmental Ada software package, ATO generation was demonstrated to obtain customer feedback. Mr. McLean testified that government feedback indicated satisfaction with GDS and that GDS met the requirements. According to Mr. McLean, this feedback on the demonstration was the key to GDS's understanding of the requirements and its relationship to the Marine Corps's needs in the future.

John F. Williams, Jr., now an employee of Logicon, which is a subsidiary of plaintiff, joined Columbia Research Corporation ("CRC") in February 1988 after two-and-one-half-decades in the Marine Corps. His role with CRC was to provide support to Marine Corps Systems Command ("MARCORSYSCOM"). CRC in general was to assist the ATACC

program manager, who at various times was positioned in Marine Corps Headquarters (Lt. Col. Lou C. Consagra and Mr. George Georgeadis), Marine Corps Research, Development and Acquisition Command ("MCRDAC") (Mr. Georgeadis), and SPAWAR (Lt. Col. James T. Ware). CRC monitored cost and schedule and tracked requirements of the specification.

Mr. Williams developed a requirements traceability matrix from software that assigned a number to each requirement to track each and to assess fulfillment of each. Although not part of CRC's contract, Mr. Williams recommended use of the matrix, and the Marine Corps agreed to it. After contract award Mr. Williams provided GDS with the matrix. GDS developed a similar matrix of its own using other software.

Before contract award Mr. Williams wrote an independent verification and validation ("IV&V") plan for prospective IV&V contractors. CRC was intended to be involved in IV&V, but SPAWAR awarded an IV&V contract before MARCORSYSCOM went into operation.

On March 29, 1988, Maj. Janice P. Guy, the Developmental Project Officer for the ATACC, sent a letter to Lt. Col. Consagra discussing her assessment of the software risk. She noted that "[w]hile the processing of textual (character oriented) data is not new, the incorporation of an automated capability into a tactical system, in support of [Joint Interoperability of Tactical Command and Control Systems ("JINTACCS")] character oriented message exchange is of concern."

Before BAFO submission, GDS answered questions posed by SPAWAR. With Mr. McLean as a participant, GDS answered an Ada sample problem. Ada was required for all Computer Software Configuration Items ("CSCIs") -- software items that make up the software architecture of a program -- that were more than 25 percent new or modified. Ada is a high-order, or powerful, language, representing a consolidation of other extant languages -- Fortran, Cobalt, Pascal. GDS personnel possessed limited knowledge of Ada, and in his LOC estimate Mr. Cotellessa modeled the inefficiencies in COCOMO, penalizing GDS for its inexperience through an effort-adjustment factor for language experience.

To arrive at its own BAFO, GDS needed to "scrub" its own proposal to eliminate unnecessary costs and expenses. Mr. LaWare undertook this task. On May 31, 1988, GDS requested BAFOs from its subcontractors, like Aircraft Systems Division ("ASD"), a sister division to GDS. On June 15, 1988, ASD submitted its BAFO to GDS for the shelters for the ATACC. ASD's BAFO for the prototype was $6,079,680.00, including a 10.8 percent profit, a price well in excess of the $4,350,000.00 BAFO that GDS wanted from ASD. In addition to reductions to the shelter costs, GDS secured reductions from other subcontractors -- including, among others, Digital Equipment Corp., Genisco, and SCI -- and made

reductions to its own costs, although no documentation of these reductions was introduced into evidence.

On June 6, 1988, the Revised System Specification for the ATACC, ELEX-T-620A, and the ATACC SOW were issued. On June 9, 1988, SPAWAR requested BAFOs from bidders adjudged technically competent. BAFOs were to include formal incorporations of the May 2, 1988 answers to questions. BAFOs were not to include exceptions to the requirements, terms, or conditions of the RFP; according to the June 9, 1999 call for BAFOs, "[a]ny exception taken *may* render your offer unacceptable." (Emphasis added.) BAFOs were due to SPAWAR by June 24, 1988.

On June 24, 1988, GDS submitted its BAFO on which it performed another LOC estimate. GDS estimated that 218,000 LOC would be necessary for its proposed ATACC. In its BAFO, GDS took no exception to the RFP, the ATACC SOW, or the ATACC contract. GDS's BAFO contained a target price of $23,267,207.00 and an identical ceiling price. This target price was a $3,198,706.00 reduction from GDS's proposal price. GDS's BAFO included copies of its May 2, 1988 responses to questions regarding cost and revisions to its proposal.

In addition to GDS, LTV Sierra/Singer submitted a BAFO to be evaluated according to the SSP. The SSP called for a Contract Award Review Panel, which was divided into technical and cost evaluation boards. The SSP, dated April 20, 1987, covered the cost side. No one from any of the Marine Corps Air Wings was involved in the cost evaluation. Maj. Bedar of Marine Corps Tactical Systems Support Activity ("MCTSSA") was a member of the Cost Evaluation Board. The Technical Evaluation Board (the "TEB"), composed of Maj. Guy, Maj. Bedar, Col. Robert Speights, and Col. Louis L. Simpleman, scored and provided comments on GDS's BAFO. On June 28, 1988, the TEB issued its ATACC Final Technical Evaluation, which included revised technical scores. It concluded that GDS proposed acceptable functional and technical approaches. Two days later, on June 30, SPAWAR issued the final recommendation of award of the ATACC contract to GDS because GDS submitted "the lowest priced proposal, had the highest overall weighted score, and [its] technical approach was judged lower risk in the critical area of software engineering."

On July 6, 1988, SPAWAR awarded the contract to GDS because GDS offered a single-contractor approach as opposed to LTV Sierra/Singer's two-contractor effort, GDS's proposed ATACC could be applied to other tactical applications, and LTV Sierra/Singer's proposal had higher technical risk. A bid protest ensued. GDS was not permitted to revise its BAFO before the signing of the awarded contract, and it was not until December 14, 1988, that a contract between SPAWAR and GDS was signed. The contract called for delivery of the ATACC prototype for operational testing within 27 months.

Mr. Williams of CRC drafted a Program Management Plan ("PMP"), dated August 1, 1988, as a guide to the steps that the program should follow. Mr. Williams has no knowledge of whether the PMP was implemented, but assumes that it received at least some kind of approval. He used the Marine Corps System Acquisition Management Model ("MCSAMM"), a computer database that tracks milestones. CRC communicated monthly reports that showed the status of each deadline and milestone. Although Mr. Williams received the follow-up questions, he did not recall specifics or whether Lt. Col. Ware asked follow-up questions. The schedule generated for the ATACC was optimistic, especially because MCSAMM had forecast an overrun of a year or longer. Mr. Williams had to go back and compress dates in MCSAMM, and GDS needed to compress its own schedule to match. No hard copy of the MCSAMM report, which filled two walls, was ever filed with the Government's Program Management Office ("PMO").

In January 1989 the parties held a post-award conference. Lt. Col. Ware was SPAWAR's Program Manager for ATACC, and this conference was his first involvement with the ATACC program. While at SPAWAR, Lt. Col. Ware communicated with the contracting officer at least once per week. At this point GDS raised the issue of satisfying the hardware quality requirements of MIL-Q-9858A ("9858A"), which was not applicable to commercial off-the-shelf equipment ("COTS equipment"). During the next two months, GDS and SPAWAR engaged in a number of guidance conferences on ATACC requirements.

From award until July 1990, Mr. LaWare was the ATACC Program Manager for GDS. Two to three times per week during the first six months of the ATACC program, he met with Lt. Col. Ware to discuss schedules and progress. Formal meetings were generally large, while informal meetings were small.

Gerald E. Glinka, Director of Finance and Business Management for Logicon, GDS's current appellation, started on the ATACC program in January 1989. He held the overall responsibility for business operations. Three functional groups reported to him: contracts, subcontracts and acquisition, and program planning and control. Mr. Glinka reported to the program manager and to business operations in Grumman's Bethpage, New York, office.

Mr. McLean was appointed Software Manager. He possessed familiarity with a range of programming languages, including Fortran, Pascal, PL/1, and various assembler languages. Mr. McLean received praise from witnesses for his programming abilities, but suffered criticism regarding his management skills.

Mr. Bonner assumed the duties of Engineering Manager on the ATACC program after award until April 1990. He reported to Mr. LaWare. Messrs. Cotellessa, McLean, Richard T. Cartwright, Jr., Shelter Systems Manager, Andrew Sullivan, Communications Systems

Manager, and Lawrence Gibbey, Integrated Logistics Support ("ILS") Manager, reported to Mr. Bonner.

During January or February 1989, Capt. Charles M. Iaquinto became the Marine Corps in-plant representative, a position he held until September or October 1991. Capt. Iaquinto's duties included ensuring that deliverables were timely delivered, functioning as a sounding board for users -- the Fleet Marine Force (the "FMF") -- and serving as the operational point of contact for GDS. He reported to Lt. Col. Ware. Although Capt. Iaquinto reviewed the generic request that the Marine Corps issued to start the ATACC program, he never reviewed GDS's proposal and did not recall the exchanged questions and answers, nor did he supervise the IV&V contractor, Texel & Co. ("Texel"). As the interface between the PMO and the FMF, Capt. Iaquinto addressed such issues as the man-machine interface (the "MMI") and hardware concerns. The FMF never asked him to influence GDS, but it did express to him its preferences for the ATACC.

On March 15, 1989, Defense Contract Administrative Services ("DCAS") released its Quality Assurance Representative's ("QAR's") Contract Data Package Recommendation/Deficiency Report. In this report DCAS indicated that 9858A was not applicable to NDI. On March 20, 1989, Mr. LaWare developed briefing charts, comparing GDS's and ASD's costs for the shelter effort. They indicate that GDS took the position that it was required to deliver unnecessary data and that the Marine Corps did "not understand how to support commercial NDI." On March 24, 1989, GDS released a Cost/Schedule Status Report ("C/SSR") for January 28, 1989, to February 24, 1989. The C/SSR reflects that $4,044,000.00 had been deposited in Undistributed Budget. On that same day, GDS also submitted a Contractor's Progress, Status, and Management Report ("CPSMR") for February 10, 1989, to March 9, 1989. The CPSMR indicates that a vendor had been selected for the shelter subsystem during the time period.

On March 27, 1989, members of the FMF, prospective users of the ATACC, visited GDS for a three-day briefing and demonstration. These Marines desired additional software and some different functionalities. They also expressed conflicting opinions about the ATACC concept. Also in March, William E. Fravel, Jr., of Texel, the IV&V contractor for the ATACC program, debriefed GDS personnel about GDS's answer to the solicitation's Ada test problem. At approximately this time, GDS moved its ATACC operations to its permanent facility in Springfield, Virginia.

The Program Review, designed to keep the Marine Corps as user abreast of the progress of the ATACC program, occurred three months into performance. During the Program Review, Lt. Col. Ware approved the format and content of the Systems Requirements Review (the "SRR") The participants in the Program Review discussed the high NDI content in GDS's approach to the ATACC. SPAWAR's documentation

requirements for military quality and testing could not be satisfied by GDS's proposed approach.

Before the SRR, GDS was preparing the Software Development Plan (the "SDP"), the System/Segment Design Document (the "S/SDD"), and other documents. Mr. Bonner was satisfied with the level of staffing. If there were staff shortages, GDS brought personnel in from other parts of Grumman -- ASD, for example. GDS had not planned to write code at this time; rather, the plan was to defer code writing until the Critical Design Review (the "CDR"). GDS, according to Mr. Bonner, was not behind schedule, but was experiencing the same start-up issues as any big project -- a temporary building, temporary equipment, and addition of staff.

From April 4 to April 6, 1989, GDS and SPAWAR scheduled the SRR, a meeting at which each party could share substantive feedback on how it was actually approaching the ATACC. The SRR's purpose was to assure each party's understanding and to make needed adjustments. The SRR was scheduled early in the program, so that the program could be defined clearly to prevent ongoing refinements that are deleterious for software development. GDS did not understand this as an evolution of Contract Line Item Number 0001 ("CLIN 0001"), the prototype, but proceeded on the basis that any evolution would occur through other CLINs after the prototype was completed. In advance of the SRR, GDS provided a proposed agenda. Maj. Theodore J. Dunn, SPAWAR's ATACC Acquisition Manager, considered the agenda to be unsatisfactory because it failed to contain sufficient substance. Maj. Dunn relayed such dissatisfaction to Mr. Bonner. After some communication between Maj. Dunn and Mr. Bonner, Maj. Dunn conveyed his dissatisfaction with the SRR agenda to Lt. Col. Ware. The latter raised the issue with Mr. Bonner, who said that GDS would modify the SRR agenda.

Mr. Bonner worked on documents and briefings for the SRR. He was responsible for all but a few minutes of the technical presentation. His intention was to present the preliminary design and other requirements to a very detailed level. The SOW required the presentation of the Preliminary System/Segment Design Document (the "PS/SDD"), although it was not a deliverable at the SRR, that is, GDS was not required to supply it to the Government at this time. Mr. Cotellessa testified that Maj. Dunn cross-checked MIL-STD-1521B with GDS's planned level of detail. Maj. Dunn told Mr. Cotellessa to scale back the detail on the PS/SDD. Maj. Dunn and Mr. Cotellessa walked through the standard and the agenda together. The S/SDD was required 60 days before the System Design Review (the "SDR"), which was to occur more than two months after the SRR. The SDR for hardware was scheduled for July 17; for software, August 16. The Software Development Plan (the "SDP") was not deliverable at SRR. The Software Quality Program Plan (the "SQPP") also was not deliverable at the SRR, or so Mr. Bonner believed.

On April 20, 1989, GDS submitted its C/SSR for February 25, 1989, to March 31, 1989. The C/SSR reflects a zero balance in the Undistributed Budget and distributions of the previously undistributed funds to various cost accounts. One week later CRC transmitted comments on GDS's SPD to the Marine Corps Program Office. These comments included those of MCTSSA, Booz-Allen and Hamilton, Inc., and CRC. The Program Officer transmitted these comments to GDS on May 24, 1989. On April 28, 1989, CRC provided the PMO with comments on the C/SSR for March and supplied a Cost Appraisal System ("CAPPS") report that indicates a projected cost overrun. These monthly reports communicated to the Marine Corps those items that were late, missed, or impacted the critical path. The CAPPS report differs from the MCSAMM report. MCSAMM used all the deliverables in the SOW, while CAPPS used data from GDS's C/SSRs. Mr. Williams did not know what the PMO did with CRC's monthly CAPPS reports.

At the second SRR, from May 2 to May 4, 1989, the Marine Corps indicated a desire to change the ATACC workstation design. The Marine Corps wanted five desktop terminals ("DTTs") instead of two DTTs and three operator consoles ("OCs"). This SRR marks the birth of Engineering Change Proposal No. 1 ("ECP1"), discussed more fully below.

Cheryl A. DiMaio, a government contracting officer, twice had responsibilities for the ATACC. After contract award, the ATACC contract was assigned to her as a Contract Specialist under SPAWAR. She retained the contract until June or July of 1989. In November 1990, she assumed duties of Contracting Officer for the contract under MCRDAC. She had no pre-contract duties on the ATACC program. As Contracting Officer she reported to Floyd Donald Monaco, who was a Supervisory Contracting Officer at SPAWAR. Diane C. Thornewell, an employee at SPAWAR since 1976, became the ATACC Contracting Officer three to six months after award of the contract. She was a contracting officer on five to six projects at that time. Her immediate supervisor also was Mr. Monaco. She continued as the Contracting Officer until November 1990.

Ms. DiMaio assumed the contracting officer position when the ATACC program was transferred from SPAWAR and Ms. Thornewell to MCRDAC. Lt. Col. Ware became Assistant Program Manager of ATACC for MCRDAC. While at MCRDAC, he was responsible to the Program Manager, Col. Keith Stivers, for management of ATACC development. In June 1989 Maj. Dunn retired from the Marine Corps and left the ATACC program.

Lt. Col. Ware played his cards close to his vest. He excluded people from meetings and held government-only meetings, according to Mr. Williams, the CRC support person. However, he never prevented Mr. Williams from attending a meeting. Lt. Col. Ware was a "one-man band" to some degree. Mr. Williams had no personal knowledge of Lt. Col. Ware

barring MCTSSA from any meetings. Lt. Col. Ware threatened to cut CRC funds and hindered Mr. Williams somewhat in his duties, but Mr. Williams worked around him.

On June 22, 1989, GDS submitted its May 1989 C/SSR. This C/SSR projected a negative cost variance upon completion of the ATACC program. One day later GDS submitted a CPSMR, which shows a schedule impact because of ECP1.

On September 8, 1989, GDS submitted the SRSs for non-TADIL communications, bit-message processing, character-message processing, system control, and TADIL communications. Ten days later Modification P00011 incorporated ECP1 into the ATACC contract. GDS submitted additional SRSs for decision support and ATO generation on September 29, 1989.

From October 17 to October 19 and October 23 to October 26, 1989, GDS and the Government engaged in the System Design Review ("SDR"). In late 1989 GDS personnel met with personnel of Eagle Technologies, the government contractor assisting in the development of MTS, to discuss MTS. At this point, Joseph H. Matusic, a former Marine Captain whom GDS retained to act as a functional expert, first appreciated the problems with utilizing MTS and JINTACCS in the same system. Mr. Matusic was a particularly straightforward witness, who criticized both GDS and the Government's actions.

On February 26, 1990, GDS submitted its first version of the Software Design Documents (the "SDDs"). This submission occurred before the Marine Corps approved the SRSs. In March 1990 GDS and the Marine Corps engaged in the Preliminary Software Design Review ("PSDR") for the SDD and the Software Architecture Specification (the "SAS").

On June 12, 1990, GDS delivered its third version of the S/SDD. On July 23, 1990, GDS delivered its version 3A of the S/SDD.

On July 18, 1990, Mr. McLean wrote a memorandum to Henry Jenkins, GDS's Engineering Manager. In this memorandum, Mr. McLean laments errors in the original costing of the proposal, reductions in software engineering labor, and additional unplanned effort. During August 1990 Cyberchron, GDS's contractor for ruggedized workstations, failed to deliver those workstations in a timely manner.

During September 1990 GDS began writing software code and performing unit testing. On October 2, 1990, the Marine Corps declared that GDS deliverables, such as C/SSRs, would be handled by the PMO's in-plant representative. "As per conversation today

between Capt. Iaquinto and GDS Contracts, this is to notify your office that all SPAWAR CDRL Deliverables will be handled by the In-House Representative for distribution."

During November 1990 Mr. Cotellessa started to focus primarily on CLIN 0013, the Joint Tactical Information Distribution System ("JTIDS"). On November 13, 1990, procurement authority for the ATACC was transferred from SPAWAR to MCRDAC, and Ms. DiMaio assumed the role of Contracting Officer from Ms. Thornewell. This shift signaled the final transfer of authority from the Navy to the Marine Corps. Edward J. Stolark, Ms. DiMaio's superior, first became aware of software development problems related to the ATACC program at approximately this time.

During January 1991 GDS experienced software development delays due to Cyberchron's non-delivery of ruggedized workstations. During March 1991 Arthur Fritzson, eventually GDS's ATACC Software Manager, and other Grumman software managers from its Bethpage, New York, office visited GDS's ATACC facility for interviews and debriefings. By April 3, 1991, GDS estimated the number of code "statements" in the ATACC system as of March 8, 1991, at 310,564. On April 19, 1991, the System/Segment Design Review was held.

During May 1991 Mr. McLean left the ATACC Software Manager position. Although he attempted to portray his departure in neutral or positive terms, the undertone of GDS's dissatisfaction was revealed by other witnesses. Two months later Mr. Fritzson assumed the position as ATACC Software Manager. On July 11, 1991, Ms. DiMaio met with GDS personnel to discuss progress in software development and GDS's ability to deliver the ATACC in December 1991. As a result of this meeting, Ms. DiMaio notified Mr. Stolark, MARCORSYSCOM's Director of Contracts, by e-mail that GDS was expending its own resources to accelerate and to overcome schedule slippages.

An ASD team arrived at GDS's ATACC site on July 22, 1991, to audit the ATACC program. Nine days later GDS submitted its C/SSR for May 25 to June 28, 1991, and its CPSMR. The C/SSR recounts a $9,832,000.00 overrun. GDS declared a commitment to schedule reduction through overtime and additional resources. The Field Demonstration System (the "FDS") was rescheduled for November 1991.

In September 1991 prospective ATACC users from the FMF attended training at GDS's Springfield, Virginia, facility in preparation for the FDS to be held at Camp Pendleton, California, in November. The Marines criticized the ATO procedures, and GDS undertook to re-write the MMI for ATO mission planning procedures. The FDS was held in November, as scheduled.

Joseph Bonsignore, Jr., then a Marine Corps major, started as a software engineer for the MCRDAC on the ATACC in late 1991. He later became in-plant representative for MCRDAC. He was a software engineer until January 1994 when he was promoted to Program Manager, a position that he held until June 1994. Lt. Col. Ware and he were the only in-plant MCRDAC representatives while Mr. Bonsignore was stationed at GDS.

During February 1992 GDS held its Production Readiness Review.

On June 25, 1992, Ms. DiMaio sent an e-mail to Mr. Stolark, the Director of Contracts. She advised that GDS was meeting the specification, for the most part, but that some areas were problems, though not major problems. Mr. Stolark recalled neither this position nor the opposite being reported to him. The e-mail indicates a few areas where the specification was unachievable. Mr. Stolark did not recall this and indicated that he was not a technical person and could not evaluate such an assertion. Ms. DiMaio noted that GDS had made remarkable progress since January 1992. She recounted that Col. Stivers impressed upon GDS the need to go to Operation, Test and Evaluation ("OT&E") by December: If GDS were to fall off schedule, funds would be in jeopardy. Mr. Stolark agreed with the schedule, but had no opinion as to whether it was tight.

During July 1992 Lt. Col. Ware retired from the Marine Corps. Lt. Col. Thomas L. Dempsey assumed the role of Assistant Program Manager, succeeding Lt. Col. Ware. During August 1992 GDS shipped the ATACC for Initial Operation, Test and Evaluation ("IOT&E").

In October 1992 GDS placed Adm. Robert Owens (Ret.) in the position of ATACC program director. He reported to Al Piccarrelli in Bethpage, New York, and Mr. Piccarrelli reported to the president of GDS, Bob Meyers. It was Adm. Owens's understanding that the ATACC had not done as well as expected and that he was to provide more senior management. He was aware that the ATACC was about two years behind schedule and that there had been much labor poured in with no funding. By this time most of the ATACC personnel had moved over to the TAU TEN project, but there still were approximately 20 employees working on the ATACC. Adm. Owens's job was to keep the relationship with the Marine Corps on an even keel, and he was successful to some degree.

On November 12, 1992, the ATACC was put through Field Installation and Acceptance Testing. One week later Lt. Col. Dempsey signed the DD250 Material Inspection and Receiving Report, accepting delivery of the ATACC prototype. The DD250 indicates that the unit price for the prototype of $1,369,242.76 was "[s]ubject to adjustments for outstanding modifications."

From January to May 1993, IOT&E was conducted. The MTS message system was not tested during this time. The Marine Corps requested a Rough Order of Magnitude (a "ROM") from GDS on August 13, 1993, for the removal of MTS from the ATACC system. Adm. Owens sent an April 15, 1993 letter to the Marine Corps regarding IOT&E. The letter reflects a positive relationship with the Marine Corps.

On August 23, 1993, GDS and the Marine Corps entered Modification P00076 for Mission Support Upgrades. GDS, according to Adm. Owens, also understood that the Marine Corps expected ongoing improvements before production.

On May 18, 1994, Northrop Corporation acquired Grumman, including the GDS subsidiary. The acquisition formed plaintiff.

The ATACC did not go into production. This disappointed Mr. Williams of CRC, who could not recall the date on which he became aware of the production decision. In Mr. Williams's opinion, two factors contributed to the decision not to produce: first, the advent of CTAPS, an Air Force program that accomplished similar functions; second, the negative comments of the Second Marine Corps Air Wing Control Group, which expressed a desire not to be stationed in "buses," as the shelters were known.

Plaintiff engaged in internal discussions about whether to file a claim. Adm. Owens was involved in plaintiff's filing of its claim under the Contract Disputes Act of 1978, 41 U.S.C.A. §§ 601-613 (West 1987 & Supp. 2000). As part of plaintiff's procedure, a prospective claim would go through a series of "sign offs," a process whereby those involved could assent to or dissent from the claim. Adm. Owens formally expressed the opinion that the claim should not be filed. When he sent his dissent, plaintiff was seeking new work from the Marine Corps. His concern was not technical or legal; rather, it was a fear of making the Marine Corps upset with plaintiff. His dissent was not well received by those above him, and he experienced a softening of support for his continued services, although he left on amicable terms. Mr. Matusic, who played a role in the identifying issues for the claim, was under the impression that, before Northrop Corporation acquired Grumman, Grumman, GDS's parent corporation, had written off the claim, which he characterized as differences of opinions between the lawyers and the workers and as a great deal of hindsight by plaintiff. Mr. Matusic also testified that plaintiff was holding the claim for the production decision. On August 23, 1995, plaintiff filed its ATACC claim with the contracting officer. The instant litigation ensued.

Plaintiff's April 11, 1997 complaint, advanced eight counts for which it sought recovery. These counts include: breach of contract due to extra work, breach of contract due to delays and acceleration, breach of the duty to cooperate, breach of contract based on superior knowledge, breach of contract based on cardinal change, estoppel and waiver, illegal

contract based on appropriations restrictions, and mutual mistake. By the date of trial, plaintiff was advancing fewer claims, including breach because of extra work, breach of the duty to cooperate, superior knowledge, illegal contract type, and unilateral and mutual mistake. Other lines of argument appear to have been abandoned or were resolved before trial. Plaintiff seeks reformation, damages in the amount of $14,162,409.00 plus interest, or other relief the court deems just and proper.

DISCUSSION

I. Whether formation of the ATACC contract was flawed

1. Appropriations restrictions for FY 1990 to FY 1992

1) Liability

In Count VII plaintiff asserts that the Navy funded the contract in violation of various Department of Defense ("DoD") appropriation acts that required a risk determination for certain fixed-price contracts from FY 1988 to FY 1992. Defendant counters that the contract was not subject to a risk determination for any fiscal year.

In its December 20, 1999 order on partial summary judgment, the court ruled that section 8085 of the FY 1989 DoD appropriation act, Pub. L. No. 100-463, § 8085, 102 Stat. 2270, 2270-32 (1988), *amended by* Pub. L. No. 100-526, § 105, 102 Stat. 2623, 2625 (1988), applied only to firm fixed-price contracts. See Order filed Dec. 20, 1999, at 5. As a consequence, if an FY 1989 contract were a firm fixed-price contract, the Under Secretary of Defense for Acquisition ("USD(A)") was required to make a risk determination. The court also ruled that the contract at issue is not a firm fixed-price contract. See id. at 11. The lack of a risk determination before award therefore did not render the contract illegal. 3/ The court, however, left open the question of whether later appropriations restrictions required the USD(A) to perform risk determinations on earlier awarded, ongoing contracts.

Plaintiff argues that the Government funded the contract incrementally from FY 1990 to FY 1992 in violation of each fiscal year's appropriations legislation that required risk determinations for "fixed price-type contracts." Defendant responds that the appropriations restriction has been interpreted to exclude incremental funding of contracts entered into and initially funded in a prior fiscal year.

3/ As a predicate to this ruling, the court also held in its December 20, 1999 order that the contract at issue was an FY 1989 contract and not an FY 1988 contract. See Order filed Dec. 20, 1999, at 4.

For FY 1990 to FY 1992, Congress reiterated the requirement for risk determination by the USD(A) first inserted into FY 1988 DoD appropriations. See Pub. L. No. 100-102, 101 Stat. 1329 (1987). Specifically, the appropriations mandated, "None of the funds provided for the Department of Defense in this Act may be obligated or expended for fixed price-type contracts in excess of $10,000,000 for the development of a major system or subsystem unless the Under Secretary of Defense for Acquisition determines, in writing, that program risk has been reduced to the extent that realistic pricing can occur . . . ." Pub. L. No. 102-172, § 8037, 105 Stat. 1150, 1179 (1991); Pub. L. No. 101-511, § 8038, 104 Stat. 1856, 1882-83 (1990); Pub. L. No. 101-165, § 9048, 103 Stat. 1112, 1139 (1989). These fiscal-year appropriations, however, modified the FY 1989 appropriation's language and again used FY 1988's "fixed price-type contracts" language. Although what qualifies as "fixed price-type contracts" may be open to interpretation, the Federal Circuit has placed all fixed-price incentive contracts within the sphere of "fixed price-type contracts." See AT&T v. United States, 177 F.3d 1368, 1373 (Fed. Cir. 1999) (en banc) (holding that FY 1988 limitation on fixed price-type contracts applies to fixed-price incentive contract awarded in FY 1988).

AT&T resolves a question related that the parties ask this court to answer. The Federal Circuit rejected the Government's argument that, because not all of the funds used for the contract at issue were appropriated in FY 1988, the FY 1988 prohibition did not apply. See id. The court looked at the "starting" point of the contract and held that "[t]he multi-year funding does not excuse the Defense Department from compliance with § 8118" at the time of award. Id. In other words, the initial risk determination might suffice to cover the "out years" of a multi-year contract. This implies, although does not explicitly state, that application of the risk determination requirement should occur only attendant to award of the contract and not in each subsequent fiscal year. 4/

Chevron, U.S.A., Inc. v. Natural Resources Defense Council, Inc., 467 U.S. 837 (1984), sets forth a two-step test to be used in evaluating the lawfulness of an agency's interpretation and implementation of a statutory mandate. The first question in the Chevron analysis is "whether Congress has directly spoken to the precise question at issue." Id. at 842. "If the intent of Congress is clear, that is the end of the matter; for the court, as well

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4/ Plaintiff relies on Judge Plager's dissent in AT&T, 177 F.3d at 1378-86, for the proposition that the appropriation language conditions all obligations, not just current fiscal year contracts. First, Judge Plager was not discussing the language in terms of appropriations for contracts entered into and initially funded in previous fiscal years. He was creating the predicate to finding the contract at issue void *ab initio*. Second, that case dealt with an FY 1988 limitation on an FY 1988 contract. It did not address the different question of the application of, for example, an FY 1990 limitation to an FY 1989 contract.

as the agency, must give effect to the unambiguously expressed intent of Congress." Id. at 842-43. If, however, "the statute is silent or ambiguous with respect to the specific issue, the question for the court is whether the agency's answer is based on a permissible construction of the statute." Id. at 843 (footnote omitted).

Step two of Chevron is brought on by one of two scenarios -- statutory silence as to the "specific issue" or ambiguity. When the plain language of a statute leads to absurd consequences, see, e.g., AT&T, 177 F.3d at 1383 (Plager, J., dissenting) (criticizing majority's application of absurd-results standard as too lenient), or to results not in concert with Congress's policy, see Neptune Mut. Assoc. v. United States, 862 F.2d 1546, 1549 (Fed. Cir. 1988), the statute is deemed ambiguous. See Green v. Bock Laundry Mach. Co., 490 U.S. 504, 510-11 (1989). In order to resolve ambiguity, the court can utilize a number of resources, if available, including legislative history. See Chevron, 467 U.S. at 842-43; Princess Cruises, Inc. v. United States, 201 F.3d 1352, 1359 (Fed. Cir. 2000). Step two of Chevron admonishes the court to defer to the agency's construction of the statute as a permissible construction when it "reflects a plausible construction of the plain language of the statute and does not otherwise conflict with Congress' express intent." Rust v. Sullivan, 500 U.S. 173, 184 (1991); see also Torrington Co. v. United States, 82 F.3d 1039, 1044 (Fed. Cir. 1996).

Defendant asserts that ambiguities inhere in the legislation at issue because of both statutory silence as to its application to incremental funding and absurd consequences that plaintiff's reading would yield. On the narrow issue of whether incrementally funded contracts are covered by appropriations restrictions, the statutes are silent. If plaintiff's reading were accurate, defendant postulates that the DoD would have been required to terminate or to suspend, until risk determinations could be performed, certain fixed-price incentive contracts that were lawfully awarded during FY 1989 and received funding in the FY 1990 appropriations. Such a result, defendant argues, is inconsistent with the acts' purpose because it would have resulted in harm to the very contractors the acts were designed to protect.

Defendant would have the court move to step two of Chevron based on silence and the absurd result. Here, the legislative history is mixed. Favoring defendant's reading of the appropriations acts' restrictions are a conference report, a Senate report, and an authorization act. In its conference report accompanying the FY 1988 appropriations, which contains the risk determination prerequisite, the House conference noted: "The language requires the Under Secretary of Defense for Acquisition to make determinations in writing concerning program risk prior to awarding a fixed-price type development contract . . . ." H.R. Conf. Rep. No. 100-498, at 623 (1988). A Senate report noted that the FY 1989 restriction should not call into question "the propriety of an otherwise valid contract," S. Rep. No. 100-326,

at 105 (1988), that is, a contract that was entered validly in another year should not be made invalid merely because of the appropriations restrictions. Defendant highlights that Congress reiterated that risk assessment was pre-award in the FY 1989 authorization act. See Pub. L. No. 100-456, § 807, 102 Stat. 1918, 2011 (1988) (stating that a risk determination must be performed before contract "may be awarded").

The DoD interpreted the FY 1988 appropriations act, which included language similar in all relevant respects to those restrictions currently at issue, as applying only before the DoD awarded a contract and not requiring annual risk determinations for contracts covered by the restriction in the appropriations act. On February 11, 1988, after the passage of the FY 1988 appropriations, the USD(A), Dr. Robert Costello, charged with performing the risk determination, issued a memorandum announcing the DoD's interpretation of section 8118. Dr. Costello stated that a risk determination "is not required for incremental funding with FY 1988 monies of a development contract already awarded using funds from a previous fiscal year." The DoD reenforced this reading when it promulgated DFAR § 235.006, which also indicates a need to perform risk determinations only prior to award and not during each year of a multi-year development contract. See 48 C.F.R. (DFAR) § 235.006 (1989).

The courts charge Congress with presumptive awareness of administrative interpretations of legislation. See Lorillard v. Pons, 434 U.S. 575, 580 (1978). When Congress fails "to revise or repeal [an] agency's interpretation," its inaction provides "persuasive evidence that the interpretation is the one intended by Congress." NLRB v. Bell Aerospace Co., 416 U.S. 267, 274 (1974). Because Congress did nothing more than enact substantially identical legislation for the appropriations cycles after Dr. Costello's interpretation, this judicial presumption supports the conclusion that Congress intended these appropriations restrictions to apply only prior to the awarding of development contracts and not to incrementally funded contracts of a previous fiscal year to be funded in a given fiscal year. Indeed, although this presumption is occasionally criticized, the House Appropriations Committee and the Senate Armed Services Committee performed reviews of the DoD's policy in June 1988 and May 1988, respectively. See H.R. Rep. No. 100-681, at 147-49 (1988); S. Rep. No. 100-326, at 104-06 (1988).

Plaintiff culls documents from the legislative history and the DoD's records to argue that the statutes apply to incrementally funded contracts, and that therefore the DOD's interpretation is unreasonable. Plaintiff points to statements by government officials that support a different reading of the conference report than that offered by defendant. Plaintiff suggests that the conference report's language is not exclusive, *i.e.*, that it does not delimit the entire scope of the restriction. The conference report appears to be open to both parties' readings. Plaintiff counters defendant's reliance on section 807 of the FY 1989 authorization with the passage of the FY 1989 appropriations, Pub. L. No. 100-463, § 8085, 102 Stat. 2270,

2270-32 (1988), *amended by* Pub. L. No. 100-526, § 105, 102 Stat. 2623, 2625 (1988). Section 8085 of the FY 1989 appropriations does not contain the same apparent limitation of risk determinations to the pre-award context.

Plaintiff proffers two DoD interpretations of the scope of the risk determinations required by the appropriation acts. Prior to passage of section 8118, Deputy Secretary of Defense William H. Taft, IV, sent letters dated December 14, 1987, to the Chairmen of both the Senate and House Appropriations Committees. Each of Deputy Secretary Taft's letters included an enclosure that reads:

> [S]everal changes need to be made in this provision to render it workable. First, this provision overlooks the fact that, due to incremental funding, RDT&E funds appropriated in FY 1988 (or subsequent years) may be obligated on long-term fixed-price development contracts awarded in prior fiscal years. As the provision now reads, in such cases the Department would still be required to make a written determination for such appropriations to be obligated for contracts awarded in prior years.

After passage of the appropriations, DoD's Assistant General Counsel (Logistics) Dennis H. Trosch discussed incremental funding in a memorandum dated December 23, 1987: "Accordingly, I am providing you with this 'heads up' because of the potential impact on the Department (the language appears to cover FY 88 incremental funding of existing contracts, which may be imminent) and so you can plan for making appropriate reviews so that you can make the required determination."

The court is unwilling to accord Deputy Secretary Taft's letter the weight that plaintiff requests. Far from an official interpretation of a statute, Deputy Secretary Taft's letter is a lobbying letter. It is an effort to entice Congress to change its course. Assistant General Counsel Trosch's letter, too, is of less import than plaintiff attaches to it. Assistant General Counsel Trosch acknowledges that "[w]e do not have the final printed copies of the legislation" and only posits a "potential impact" because "the language appears to cover . . . incremental funding." By no means could Assistant General Counsel Trosch's letter be construed as the DoD's interpretation. Further, the District of Columbia Circuit Court has indicated that the duty to interpret an act rests with the official identified in the act as the one to administer the act. See California Co. v. Udall, 296 F.2d 384, 388 (D.C. Cir. 1961) ("An administrative official charged with the duty of administering a specific statute has a duty to determine as an initial and administrative matter the meanings of the terms in that statute.") Thus, Dr. Costello's interpretation transcends the two offered by plaintiff.

Finally, plaintiff argues that risk determinations that the USD(A) made regarding other incrementally funded contracts for FY 1988 demonstrate either that defendant's current interpretation of the DoD policy is erroneous or that the DoD did not have a consistent policy entitled to deference under Chevron. The DoD performed several risk determinations for contracts similar to the contract at issue in this case. No evidence was offered to indicate the magnitude of these determinations when compared to the total number of similar contracts. 5/

If the funding restrictions applicable during FY 1990 to FY 1992 that require risk determinations were ambiguous in their scope, the court would have no difficulty ruling that Dr. Costello's interpretation, recorded in his memorandum and reiterated in DFAR § 235.006, is reasonable and therefore entitled to deference. However, the court does not progress beyond step one of Chevron because no ambiguity is present. Neither of defendant's arguments on this score persuades the court. The statutes themselves are silent only in their breadth. They do not cover the specific issue of incremental funding because they cover all funding. The appropriations unambiguously read: "None of the funds provided for the Department of Defense in this Act may be obligated or expended for fixed price-type contracts in excess of $10,000,000 for the development of a major system or subsystem unless the Under Secretary of Defense for Acquisition determines, in writing, that program risk has been reduced to the extent that realistic pricing can occur . . . ."

Moreover, defendant's argument about absurd results does not withstand scrutiny. The mere enactment of the restriction would not lead to absurd results, *i.e.*, termination of contracts. The DoD could forestall termination by performing risk determinations before the appropriated money is obligated or expended on those covered contracts. The DoD apparently did perform some similar risk determinations for incrementally funded contracts without termination. Assistant General Counsel Trosch's letter, although of limited import, advances this understanding and does not predict immediate termination of contracts. Congress may have been silent in the face of an agency interpretation in contravention of an unambiguous statute, but a court does not have that luxury. See FEC v. Democratic Senatorial Campaign Committee, 454 U.S. 27, 32 (1981) ("[T]he courts are the final authorities on issues of statutory construction. They must reject administrative constructions of the statute . . . that are inconsistent with the statutory mandate . . . ."); AT&T Corp. v. Excel Communications, Inc., 172 F.3d 1352, 1355 (Fed. Cir. 1999) ("In matters of statutory

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5/ The parties offered a deposition of and a transcript of trial testimony by Eleanor Spector, former Assistant Deputy Under Secretary of Defense for Acquisition, to further elucidate this issue. The court has reviewed the deposition and transcript and determines that they fail to shed useful light on the matter at hand.

interpretation, it is [a] court's responsibility independently to determine what the law is."). By failing to make risk determinations for the incremental funding of the ATACC contract for FY 1990 to FY 1992, the DoD violated the statutory prerequisites for the funding of this fixed-price incentive contract.

2) Remedy

After determining that the contract at issue in AT&T was not void, the Federal Circuit remanded the issue of damages to the Court of Federal Claims. Although the decision on remand has not been issued, the Federal Circuit identified three possible remedies: "When a contract or a provision thereof is in violation of law but has been fully performed, the courts have variously sustained the contract, reformed it to correct the illegal term, or allowed recovery under an implied contract theory . . . ." AT&T, 177 F.3d at 1376. The Federal Circuit, however, was cautious in its remand:

> Although the parties discuss possible remedies, the issue of what relief may be available to AT & T is not before us, for the Court of Federal Claims did not consider AT & T's claims on the premise that the underlying contract was not void. We have not considered this issue, and express no view thereon.

Id. at 1377. Plaintiff utilizes AT&T as the basis for its request that the court either allow recovery under an implied contract theory or reform the contract.

i) Implied contract

Plaintiff relies upon AT&T's citation of Urban Data Systems, Inc. v. United States, 699 F.2d 1147 (Fed. Cir. 1983), for the proposition that "reimbursement on a *quantum valebant* basis for the reasonable value in the marketplace of the supplies and concomitant services." Id. at 1154 (citing Cities Serv. Gas Co. v. United States, 205 Ct. Cl. 16, 32, 500 F.2d 448, 457 (1974)). Initially, it should be noted that AT&T only used Urban Data Systems for the modest proposition that a price term contrary to law did not render a fully performed contract invalid. See AT&T, 177 F.3d at 1376. In Urban Data Systems, plaintiff appealed a determination by an agency board of contract appeals that two of plaintiff's contracts were "void *ab initio* because the price adjustment clauses" contained therein violated 41 U.S.C. § 254(b) (1976), a statutory prohibition against the use of "cost-plus-a-percentage-of-cost" provisions. 699 F.2d at 1150. The board ruled that, upon presentation to the contracting officer, plaintiff was entitled to recovery on a *quantum valebant* basis because performance had been completed. The Federal Circuit held that because "the Government bargained for, agreed to pay for, and accepted the supplies delivered by

[plaintiff]," *quantum valebant* recovery was appropriate given that the only illegality in the contract was the price term. Id. at 1154.

Plaintiff's reliance upon Urban Data Systems is misplaced. Urban Data Systems, a 17-year-old case, must be distinguished based on the grounds of recovery that are currently available in the Court of Federal Claims. 6/ In Mega Construction Co. v. United States, 29 Fed. Cl. 396 (1993), the court discussed the differences between the authority of the Federal Circuit and that of the Court of Federal Claims to issue equitable remedies. The court in Mega Construction Co. held:

> Because the Court of Appeals for the Federal Circuit is a court created under Article III of the Constitution of the United States, its exercise of equitable powers, such as in [United States v.] Amdahl[, 786 F.2d 387 (Fed. Cir. 1986)], is within its jurisdictional mandate. However, [the Court of Federal Claims] is an Article I court with specific jurisdiction granted by the Congress that must be strictly construed. See United States v. John C. Grimberg Co., 702 F.2d 1362, 1372-74 (Fed. Cir. 1983). This court is statutorily devoid of equitable jurisdiction in this area of the law and, thus may not provide redress for contracts implied-in-law. See 28 U.S.C. § 1491(a)(1); [United States v.] Mitchell, 463 U.S. [206, 218 (1983)]; Merritt [v. United States,] 267 U.S. [338, 341 (1925)].

29 Fed. Cl. at 472; see also AT&T v. United States, 124 F.3d 1471, 1479 (Fed. Cir. 1997) (noting that Court of Federal Claims generally lacks the power to grant remedies based in equity), rev'd en banc on other grounds, 177 F.3d 1368 (Fed. Cir. 1999); City of El Centro v. United States, 922 F.2d 816, 820-24 (Fed. Cir. 1990) (construing Court of Federal Claims jurisdiction over implied-in-fact contracts in contrast to implied-in-law contracts), cert. denied, 501 U.S. 1230 (1991); Wainwright Realty Co. v. United States, 28 Fed. Cl. 425, 426 (1993) (noting that Court of Federal Claims lacks jurisdiction over claims of unjust enrichment). The Federal Circuit implicitly ratified the holding in Mega Construction Co. in its decision in Trauma Service Group v. United States, 104 F.3d 1321 (Fed. Cir. 1997)

6/ Urban Data Systems also is distinguishable because the issue in Urban Data Systems was an illegal price term. An illegality in a price term is particularly egregious because the parties must agree on price in order to have a valid contract before a court would even arrive at considering the ancillary terms of that contract. *Quantum valebant* is one method by which courts attempt to assess what that price is when the price term used is otherwise not permissible. No such illegality with regard to price is present in the ATACC contract. The illegality at issue in this claim arises from the failure to perform a risk determination.

The Federal Circuit held: "[I]mplied-in-law contract scenarios are beyond the purview of the Tucker Act" and therefore not remediable in the Court of Federal Claims. Id. at 1327; see also Hercules, Inc. v. United States, 516 U.S. 417, 423 (1995) (noting that Court has "repeatedly held that [Court of Federal Claims] jurisdiction [does not extend] to claims on contracts implied in law").

An implied-in-fact contract fact also provides no ground upon which plaintiff can stake its claim for recovery. An implied-in-fact contract arises when all of the elements of an express contract are present, except a written document. See Atlas Corp. v. United States, 895 F.2d 745, 754 (Fed. Cir. 1990). "The existence of an express contract precludes the existence of an implied contract dealing with the same subject . . . ." Id. (citing ITT Fed. Support Servs. v. United States, 209 Ct. Cl. 157, 168 n.12, 532 F.2d 522, 528 n.12 (1976)). The parties to the present litigation entered an express contract on the exact subject that is the topic of this case. AT&T held that even if the contract were illegal, it would not be void *ab initio*. Thus, the ATACC contract precludes the existence of an implied-in-fact contract that merits *quantum valebant* recovery.

If the Federal Circuit were to have used the phrase "an implied contract theory" improvidently and were to have intended to impart another meaning, the court is unable to decipher what that other "implied contract theory" is. Therefore, although the Federal Circuit intimated that *quantum valebant* recovery for an implied contract may be available, such is not the case given the statutory limitations placed upon this Article I court.

ii) Reformation

Plaintiff beseeches this court to reform the contract as an alternative remedy to enforcement of an implied contract. In an oversimplification, plaintiff claims that "[g]enerally, there are only two types of government contracts: fixed-price contracts and cost-reimbursement contracts." Plf's Br. filed Dec. 2, 1999, at 20. Plaintiff argues for reformation to a cost-reimbursement contract.

The remedy of reformation is a narrow one, bringing a contract into conformity with "the true agreement of the parties on which there was a meeting of the minds." American President Lines, Ltd. v. United States, 821 F.2d 1571, 1582 (Fed. Cir. 1987). Reformation is not intended to be a means by which a court injects itself into the contracting process to create the contract that it determines is best for the situation. See Atlas, 895 F.2d at 749 (noting that courts have "no authority to write contracts, or contract clauses, for the United States by means of reformation where there has been no agreement") (citing American President Lines, 821 F.2d at 1582).

Although plaintiff cites no cases other than AT&T for its argument that reformation cures the illegality, AT&T itself provides two such cases, LaBarge Products, Inc. v. West, 46 F.3d 1547 (Fed. Cir. 1995), and Beta Systems, Inc. v. United States, 838 F.2d 1179 (Fed. Cir. 1988) -- cases upon which plaintiff relies in its argument for reformation because of violation of the FAR. See Plf's Br. filed Dec. 2, 1999, at 24.

In LaBarge the Federal Circuit denied relief to the contractor, but held that a "claim for reformation of the . . . contract [by the Armed Services Board of Contract Appeals (the "ASBCA")] is supported by a valid legal theory based on illegal government conduct." 46 F.3d at 1556. The contractor was the low bidder on an Army contract for the manufacture of pipe couplings. The Army procurement officer met with the contractor to indicate that he was going to request BAFOs. The contractor responded that it would offer a BAFO that contained a reduction from $38.50 per coupling to a price in the low $30.00 range. Someone involved in the procurement notified the contractor's main competitor for the coupling contract of the amount that the contractor intended to bid. Although the competitor's bid in its BAFO was lower for the first year, the contractor's bid was lower over the life of the contract and was accepted by the Army. The disappointed bidder filed a bid protest in which it revealed that the contractor's BAFO range had been disclosed. The contractor joined the protest. After the protest was denied, the contractor performed at its BAFO price. The contractor thereafter sought reformation of the contract by the ASBCA in order to recover the difference between its initial bid and its BAFO bid. The contractor alleged violation of the prohibition against auctioning techniques contained in FAR § 15.610(d) (1984). When the ASBCA denied recovery, the contractor appealed to the Federal Circuit.

The Federal Circuit in LaBarge relied upon two cases from the United States Court of Claims -- CRF-A Joint Venture of CEMCO, Inc. and R.F. Communications, Inc. v. United States, 224 Ct. Cl. 312, 324-26, 624 F.2d 1054, 1061-62 (1980), and Applied Devices Corp. v. United States, 219 Ct. Cl. 109, 119-20, 591 F.2d 635, 640-41 (1979) -- as binding precedent that jurisdiction was present to award reformation in the face of a contract illegality. See LaBarge, 46 F.3d at 1552. In CRF-A Joint Venture, the Court of Claims considered whether the contracting officer's unlawful demand that the contractor refurbish eight first-article radios to production quality amounted to an exercise of further production options. The contract called for the contractor to manufacture a total of 362 production units, including refurbished first-article units. In contravention of the competitive-bidding regulations, the contracting officer told the contractor that the eight refurbished units were in addition to the 362 production units. The contractor produced the extra units and received no additional compensation. The court ruled that such an order, though illegal and without authority, could be the grounds for reformation because the order of additional units harmonized with the production option that the parties had included in their contract. See CRF-A Joint Venture, 224 Ct. Cl. at 325-26, 624 F.2d at 1061-62. In Applied Devices the Court of Claims remanded to the trial division an appeal from an ASBCA ruling that denied

reformation. 7/ The Court of Claims held that the failure of the Government to meet the Armed Services Procurement Regulations (the "ASPR") requirement for a "reasonable and realistic estimate of labor learning [] and other nonrecurring costs for computation of the 'cancellation ceiling'" warranted reformation. 219, Ct. Cl. at 118, 591 F.2d at 639. Although not explicit in the court's reasoning, it can be inferred that the court granted reformation because the parties would not have entered the contract with an illegal price term, but, rather, intended to incorporate a cancellation ceiling that complied with the law, *i.e.*, one that reflected "the nonrecurring initial costs in a realistic manner as ASPR 1-322.2(d) and (e) required." Id. at 114, 591 F.2d at 637.

In Beta Systems, on appeal from a summary judgment decision, the Federal Circuit considered the parties' erroneous selection of a specific statistical index by which to adjust the contract price under an Economic Price Adjustment ("EPA") clause. To comply with contracting regulations, the parties attempted to select an index that would "'bear a logical relationship to the type of contract costs being measured,'" or approximate changes in material costs. Beta Sys., 838 F.2d at 1185 (quoting DAR § 3-404.3(c)(3)c.5 (1981)). When the material costs fluctuated and the EPA clause did not keep pace, the contractor sued. Because neither party would have intended to use an index that, from the contractor's point of view, would have frustrated its economic expectations and, from the Government's view, would have been illegal, the court ruled that "reformation is appropriate" if the facts on remand were to indicate that the contract violated the DAR and the EPA clause did not approximate the economic changes affecting the contract. Id. at 1186.

LaBarge, Applied Devices, and Beta Systems are not apposite to the case at bar. The primary distinction is that the alleged illegality in each case that gave rise to the possibility of reformation involved pricing. 8/ In LaBarge the court considered reformation that would increase the price term to that proposed by the contractor before the call for BAFOs. Such a reformation could be appropriate if the higher price were what the parties intended in the absence of the allegedly illegal behavior by the Government. In Applied Devices the court

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7/ It is significant to note that the Court of Claims recognized that the ASBCA lacked jurisdiction to grant reformation. "[The ASBCA's decision] we may accept as correct since the avenue to relief in such a case we believe is by equitable reformation, which the board was not granted jurisdiction to accord at the time of its decision." Applied Devices, 219 Ct. Cl. at 119, 591 F.2d at 640.

8/ CRF-A Joint Venture also is inapposite. The court in that case permitted reformation to cure a quantity dispute. Reformation was appropriate because it effectuated the intent of the parties that any order in excess of the 362 production units would fall under the option clause of the contract.

permitted reformation to correct the erroneous and illegal selection of a cancellation ceiling. The parties, which possessed the requisite intent to contract, would not have selected a cancellation ceiling that would have voided their contract. In Beta Systems there appeared to be an intention on the part of both parties to enter a contract different from that which they actually formed, that is, they mistakenly chose the specific EPA clause.

Reformation to a cost-reimbursement contract brings additional difficulties. First, the cost-reimbursement contract that plaintiff seeks would itself present problems of legality. Second, reformation of the contract to cure the illegality would create a most unusual contract.

As a threshold matter, federal government contracts must meet the requirements of federal law and the FAR. See FAR § 1.602-1(b) (1999) ("No contract shall be entered into unless the contracting officer ensures that all requirements of law, executive orders, regulations, and all other applicable procedures, including clearances and approvals, have been met."). Failure of a contracting officer to follow these requirements may create the predicate for a claim. For example, 10 U.S.C. § 2306(c) (1988) (repealed 1994), required that no cost-type contracts could be awarded without agency head certification that no lower cost alternatives were available. The FAR incorporated this restriction, as well. See FAR § 16.301-3(c) (1988).

In the instant case, the Secretary of Defense did not make any determination that no lower cost alternatives were available. Reformation to a cost-type contract, then, would bring about the same deficiency about which plaintiff complains in the instant action. The court is unwilling to trade one illegality for another, even when plaintiff asks for it.

Although awkwardness is not a criterion for reformation, plaintiff's plea for reformation because of the illegality during FY 1990 to FY 1992 would have an unusual effect. For FY 1989, the contract would remain a fixed-price incentive contract. For FY 1990 to FY 1992, the contract would be reformed to be a cost-type contract. For FY 1993 to completion of the contract, it would revert to a fixed-price incentive contract. This result gives the court pause. It also further suggests that this arrangement would not reflect the intent of the parties.

Reformation of the ATACC contract is not appropriate. The instant dispute does not fit the mold of a contract for which reformation is an acceptable remedy. Moreover, reformation would not solve the illegality, but rather would create a different illegality.

iii) Enforcement as written

According to AT&T, one option remains to the court: enforcement as written. Plaintiff contends that such a result would be inappropriate because the appropriations restrictions "were promulgated precisely to avoid the result in this case -- costly overruns incurred by a contractor performing high-risk development work for a fixed price." Plf's Br. filed Dec. 2, 1999, at 18.

Enforcement as written, regardless of the illegality, brings no unjust result. See, e.g., LaBarge Prods., 46 F.3d at 1556; Trilon Educ. Corp. v. United States, 217 Ct. Cl. 266, 273-74, 578 F.2d 1356, 1360 (1978) (citing cases), cited in AT&T, 177 F.3d at 1376. Although GDS was exposed to a number of risks, GDS was cognizant of the risks, as evidenced by the risk assessments that it performed before entering the contract. GDS, a sophisticated government contractor, had available to it all the information necessary to bid on the ATACC contract. Using this information, GDS determined that the risks were low.

The Marine Corps may have exacerbated the problems of performance through constructive changes, a lack of cooperation, or deficiencies within the specification and the contract; nonetheless, such problems do not go to the underlying issue of whether a risk determination was made according to the appropriations restrictions, and are better addressed on a case-by-case basis, rather than by awarding plaintiff full recovery. The full cost recovery plaintiff seeks under this theory of recovery would bring a windfall to which it is not entitled.

The Federal Circuit's caution in AT&T, that it "ha[d] not considered" "what relief may be available," 177 F.3d at 1377, raises the possibility that, of the three forms of relief that the court indicated might be available, any one actually might be unavailable. This court's authority is circumscribed in that it cannot grant the equitable relief sought because, as an Article I court, it lacks the requisite judicial power. Reformation is also unavailing because no evidence suggests that the parties intended to enter a cost-type contract. Accordingly, the court enforces the ATACC contract as written. Plaintiff is not entitled to recovery on the allegation of contract illegality related to appropriations restrictions for FY 1990 to FY 1992.

2. Regulatory restrictions on contract type

Plaintiff challenges the award of the contract as violative of the applicable regulatory requirements for the "select[ion of] a firm-fixed-price contract." Plf's Br. filed Dec. 2, 1999, at 21. For this alleged violation of the regulations, plaintiff seeks either recovery in *quantum valebant* or reformation of the contract to a cost-reimbursement contract. Defendant counters by arguing that the contract at issue is a fixed-price incentive contract. As a fixed-price incentive contract, defendant contends, the ATACC contract was not subject to the stricter requirements for the selection of a firm fixed-price contract.

In a December 20, 1999 order, the court ruled that the ATACC contract was awarded as a fixed-price incentive contract, not a firm fixed-price contract or a *de facto* firm fixed-price contract as plaintiff argues. See Order filed Dec. 20, 1999, at 10-11 (noting that "[t]he contract does not contain the essential element of a firm fixed-price contract" and "is a fixed-price incentive contract"). Plaintiff's arguments based on the regulatory requirements of firm fixed-price contracts are misplaced; however, the court considers whether the applicable regulations for fixed-price incentive contracts were satisfied by the Navy prior to selection of the contract type.

Part 16 of the FAR "prescribes policies and procedures and provides guidance for selecting a contract type appropriate to the circumstances of the acquisition." FAR § 16.000. For fixed-price incentive contracts, the FAR directs:

> (b) *Application*. A fixed-price incentive contract is appropriate when--
>
> (1) A firm-fixed-price contract is not suitable;
>
> (2) The nature of the supplies or services being acquired and other circumstances of the acquisition are such that the contractor's assumption of a degree of cost responsibility will provide a positive profit incentive for effective cost control and performance; and
>
> (3) If the contract also includes incentives on technical performance and/or delivery, the performance requirements provide a reasonable opportunity for the incentive to have a meaningful impact on the contractor's management of the work.

FAR § 16.403(b). While the application portion of the section 16.403 provides a broad range of scenarios in which a fixed-price incentive contract might be appropriate, selection of fixed-price incentive contracts is further limited.

> (c) *Limitations*. A fixed-price incentive contract may be used only when a determination and findings has been executed, in accordance with agency procedures, showing that (1) this contract type is likely to be less costly than any other type or (2) it is impractical to obtain supplies or services of the kind or quality required without the use of this contract type.

FAR § 16.403(c) (citations omitted).

FAR § 16.403-1 governs the procedures and criteria that the Navy would have had to satisfy to award the contract. It provides:

(b) *Application*. A fixed-price incentive (firm target) contract is appropriate when the parties can negotiate at the outset a firm target cost, target profit, and profit adjustment formula that will provide a fair and reasonable incentive and a ceiling that provides for the contractor to assume an appropriate share of the risk. When the contractor assumes a considerable or major share of the cost responsibility under the adjustment formula, the target profit should reflect this responsibility.

(c) *Limitations*. This contract type may be used only when--

(1) The contractor's accounting system is adequate for providing data to support negotiation of final cost and incentive price revision;

(2) Adequate cost or pricing information for establishing reasonable firm targets is available at the time of initial contract negotiation; and

(3) The determination and findings required by 16.403(c) has been signed.

The parties do not dispute the satisfaction of FAR § 16.403(b), which offers the widest range of contracts that may be appropriately let as fixed-price incentive contracts. They do not even dispute that the appropriate findings were made under FAR § 16.403(c). Although other criteria must be satisfied under FAR § 16.403-1(b) and (c), the parties focus on the availability of adequate cost or pricing information. Plaintiff also challenges whether the Government was required by the FAR to ensure a reasonable apportionment of the contract risk. In addition to directly countering these arguments, defendant makes the fallacious argument that "agency determinations and findings in support of a selection of contract type are 'final' and unreviewable by courts." Def's Br. filed Dec. 13, 1999, at 20. 9/

1) Adequate cost and pricing information

Although not expressly speaking to risk, the requirement that adequate cost and pricing information be available at the time of initial contract negotiations does implicate risk as a factor. Adequate cost and pricing information cannot mean an absence of risk, for such

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9/ Defendant supports this argument with the assertion that "[l]egal challenges to agencies' selections of contract type have never succeeded," Def's Br. filed Dec. 13, 1999, at 20, and only cites two Comptroller General Decisions as legal authority for that position. However, both decisions cited hold that review of the selection of contract type is based on a reasonableness standard. See Delco Elecs. Corp., B-244559, 91-2 C.P.D. ¶ 391, at 2-3 (1991); United Food Servs., Inc., B-220367, 86-1 C.P.D. ¶ 177, at 5-6 (1986).

is an impossibility. All contracts contain some element of risk. The existence of risk cannot preclude the existence of adequate cost and pricing information. Risk is but one component of adequate cost and pricing information, *i.e.*, cost and price are functions of risk. The greater the risk of an endeavor, the greater the price charged for undertaking that endeavor. Therefore, even high-risk contracts may contain adequate cost and pricing information to permit the contractor and the Government to arrive at firm targets.

Before settling on the fixed-price incentive contract, according to Mr. Monaco, Director of Contracts at SPAWAR, all contract types were considered. Calculon performed a risk analysis, concluding that the risks were "moderate and manageable." SPAWAR prepared the Acquisition Plan, which contains the rationale for the selection of a fixed-price incentive contract. The Acquisition Plan lists three factors for contract choice, including "[u]se of non-developmental hardware," "[e]xistence of data link software which will be provided as GFI to the ATACC developer," and "[s]oftware to be developed is primarily an information management type subsystem." Mr. Monaco did not recall other assumptions that entered into the contract selection rationale.

Mr. Monaco, who played a significant role in drafting the Acquisition Plan, testified that SPAWAR approved the Acquisition Plan on July 11, 1986. At that time Col. Robert J. Speights was the Program Manager; Adm. Clark, Commander of SPAWAR. Through his conversation with Robert Meyers, branch head in the PMO, Mr. Monaco believed that the ATACC program would integrate already existent components.

The use of NDI was a basic assumption of the Acquisition Plan. In its description of the program, the Acquisition Plan indicates: "Hardware development will be eliminated and a replacement for the present system fielded by, to the maximum extent possible, integrating military specification or militarized items of hardware already in service use. In order to facilitate this acquisition strategy, the maximum possible use will be made of applicable existing software." If there were a substantial pull-back in the amount of NDI, Mr. Monaco would have reconsidered the fixed-price contract type.

On August 24, 1987, GDS submitted its ATACC proposal, which contained a risk assessment as directed by the solicitation. In paragraph 3.2.1.9.2, the proposal reads, in part, "The preliminary risk assessment for ATACC has been performed during the proposal preparation phase. Each of the preliminary risks have [sic] been identified and categorized according to the requirements dictated in the proposal preparation instructions." In figure 3-52, "Preliminary Risk Assessment," GDS identified the risks for system performance, hardware, shelter weight, LSD projector mount, and software -- *including* Ada experience and the integration of NDI and new Ada software -- as "low." GDS rated as low-to-medium the risk associated with stress tests and the availability of resources. GDS provided a

rationale for each of its assessments. Mr. Bonner reviewed this assessment before it was submitted to the Government. Dr. Evans characterized this risk assessment as "not formal."

On March 29, 1988, Maj. Guy submitted to Lt. Col. Consagra a risk assessment for the ATACC program as of that date. The letter indicates low risk in the following software areas: operating system, data reduction, training support, and development support. It further recounts moderate risks in the following software areas: tactical data link program, data base management system, decision support system, graphics display, and test support. The overall software risk is labeled moderate. Maj. Guy testified that high-risk programs are not likely to be contracted as fixed-price type. For moderate risk projects, the Government would provide assistance if asked. In this case the Government hired an IV&V contractor and engaged in software support activity through MCTSSA.

Before submitting its BAFO on June 24, 1988, GDS made no changes to its risk assessment.

On June 30, 1988, the Contract Award Review Panel recommended award of the ATACC contract to GDS because it "submitted the lowest priced proposal, had the highest overall weighted score, and their [sic] technical approach was judged lower risk in the critical area of software engineering." The final decision to award contract to GDS occurred on July 6, 1988. Mr. Monaco could not recall whether the Government did a cost analysis. He considered the Business Clearance Memorandum, dated November 29, 1988, all the findings that he needed to make. Mr. Monaco testified that there was no need to make any of the determinations required for a firm fixed-price contract.

Dr. Rowland G. Evans, plaintiff's computer software expert, testified principally by videotaped deposition at length about the deficiencies in the evaluation of the ATACC and the subsequent additions to the ATACC program. According to Dr. Evans, Calculon only analyzed a small part of the software functions contained in the specification. Those parts that were not assessed were high or very high risk software development efforts. In addition, four major changes were made to the specification between Calculon's analysis and award of the contract, as the requirements evolved from June 1986 to April 1987.

First, MTS was added to the ATACC prototype. The Acquisition Plan did not include MTS. When performing its risk assessment, Calculon had considered the possible downstream addition of MTS after the prototype phase. In actuality, MTS was added on August 8, 1986, to the specification without a risk assessment, and no evidence exists that the Calculon risk assessment was updated. Because CLIN 007 covered the MTS message test, the inference can be made, as Dr. Evans surmised, that MTS could not have been fully implemented previously because GDS was developing the test software.

Second, according to Dr. Evans, automatic processing and automatic/automated generation were added after Calculon's risk assessment. These elements involve a more complex software process and are higher risk. Dr. Evans described the Acquisition Plan as providing a semi-automated, man-in-the-loop system, whereas the specification called for a fully automatic system. The data exchange changed from computer assisted to fully automatic. ATO generation changed from computer assisted to fully automatic.

Third, the deletion of the required use of AN/UYK-14/43/44, a standard military specification computer used by the Navy, increased program risk. Commercial hardware that was available at the time rendered the AN/UYK-14/43/44 no longer competitive, so the bidders were better off from a hardware perspective using non-standard computers. This, however, made the software more problematic because none of the commercial computers available was able to support a standard Navy compiler, CMS-2. Pre-existing TACC TADIL code could not be re-used. Thus, although GDS could not re-use CMS-2 code, the Calculon evaluation included the re-use of code. Re-use of code reduces risk proportionally. Dr. Evans testified that the Government amended the procurement to allow a bid that included NDI in areas other than the old TACC NDI. This change occurred in August 1987.

Fourth, the addition of the Ada requirement increased the risk associated with the ATACC contract. The decision to use Ada was made in March 1987. The advantages of Ada are that the software produced is more easily read by programmers and the coding process is less error prone. Ada, however, raises translation issues for existing software. No translator existed that could capture the Ada structure, so a software programmer would have been required to do a full top-down development. GDS would have had to develop new software for TADIL A and B, NATO Link1, TRACK database; would have had to use real-time language responses; and would have used a bit-oriented as opposed to character-oriented language that stores information in a binary system of ones and zeros which is not readable by humans.

While the two changes affecting TADIL were substantial, GDS lowered its price after the addition of TADIL. To ascertain whether GDS considered the impact, Dr. Evans suggested that one needed to look to the LOC estimates and man-months labor estimates. Dr. Evans added man-months through COCOMO to his estimate. GDS, which used COCOMO as well, did not add more time for the TADIL effort. Dr. Evans concluded then that GDS did not have a chance to evaluate TADIL software.

Dr. Evans took issue with Maj. Guy's March 1988 software risk assessment, also testifying that he found no evidence that this report was ever considered in the approval process. His main objection was with Maj. Guy's averaging of risk to generate one single valuation of risk. According to Dr. Evans, averaging is notorious for hiding risk. He would

have expected the Government's risk analysis to be segregated by risk element: Instead of an average of the program risk factoring all elements together, Dr. Evans's ideal report would declare that the program was one without high risk.

Although all four changes highlighted by Dr. Evans did occur after the Calculon risk assessment, it does not necessarily follow that adequate cost and pricing information was unavailable. Indeed, no argument is made that GDS was unaware of the requirements brought about by the changes. Dr. Evans did testify that the TADIL software issue brought about by the removal of the requirement to use AN/UYK-14/43/44 and the addition of the Ada computer language occurred too close to submission of BAFO for GDS to evaluate its impact; nonetheless, GDS still was aware of the change before its BAFO submission.

Contrary to plaintiff's implication that the adequate cost or pricing information for establishing reasonable firm targets must be available at the time of the selection of contract type, the regulation only requires that this information be "available at the time of initial contract negotiation." FAR § 16.403-1(c). The regulations recognize that the processes of developing a program, selecting a contract type, and awarding a contract are fluid. Although a process of negotiation, in the traditional sense, is not present here, BAFOs serve the role of negotiations because they are the mechanism by which the Government and contractors arrive at a price more acceptable to both than the initial proposal.

By the BAFO submission date, GDS was aware of all of the elements that were required in the contract, the SOW, and the specification. GDS generated its cost and pricing based on the information available to it. No testimony or other evidence presented demonstrated that at the time of BAFO, or any other time prior to commencement of the contract, GDS was even the slightest bit concerned about whether it possessed adequate cost and pricing information. Indeed, between its proposal and BAFO, GDS was afforded the opportunity to adjust its price, in part, based on the modifications to the program that occurred since the solicitation. GDS chose to lower its price. Adequate cost and pricing information may not have been available for what the ATACC ultimately developed into based on putative constructive changes, but those damages are best left resolved on a case-by-case basis and not through *quantum valebant* or reformation.

2) <u>Reasonable apportionment of the risks</u>

Although the regulations appear to be oriented toward protecting the public fisc, by requiring "the contractor to assume an appropriate share of the risk," FAR § 16.403-1(b), they also require "reasonable contractor risk," FAR § 16.103(a), which focuses on the level of the risk from the perspective of the contractor. The court therefore rejects defendant's argument that the FAR should be viewed solely from the Government's perspective.

As its terms indicate, "appropriate share of the risk," more than the existence of adequate cost and pricing information, turns on whether the parties assessed and shared the risks. Throughout the development of the ATACC program, at least three risk assessments were performed. Prior to the completion of the Acquisition Plan, Calculon examined the risks associated with the program and determined that overall risk was "moderate and manageable." GDS itself, knowing the full scope of the program, informed the Government that its evaluation showed low and low-to-medium risk. Before contract award, Maj. Guy undertook a risk assessment and concluded that the overall software risk was moderate. Based on what each party perceived at the time, the fixed-price incentive contract selected apportioned this risk appropriately.

An incentive contract, even one in which the ceiling price and target price are identical as in the ATACC contract, apportions risk. FAR § 16.403-1(a) reads: "When the contractor completes performance, the parties negotiate the final cost, and the final price is established by applying the [profit adjustment] formula. When the final cost is less than the target cost, application of the formula results in a final profit greater than the target profit . . . ." The profit adjustment formula the parties selected was a 50/50 formula. GDS bore the risk of costs exceeding the ceiling price. GDS, however, also could have reaped benefits greater than the target profit. The contract type placed the Government in the position of possibly having to pay GDS a greater profit than it had expected to pay. In other words, there is "not a profit ceiling or floor" in a fixed-price incentive contract. FAR § 16.403-1(a). This profit flexibility demonstrates a reasonable apportionment of the risks associated with the contract. If, as all parties concurred before performance, the risks were low to moderate, GDS could have been well positioned to reap profits in excess of the target profit. The Government, too, because of the fixed-price incentive contract, was well positioned to have a ceiling on its potential liability.

Based on these risk assessments prior to award, the court determines that risk to GDS was reasonable and appropriate at the time of award based on the contract type and the nature of the program. After award, the program may have evolved such that risk levels fluctuated, but the inquiry into risk ends with the award of the contract.

Plaintiff failed to prove that at the time of contracting the parties did not possess adequate cost and pricing information or that the risk was not reasonably apportioned. Even if the court were to find a violation of the applicable FAR sections, the remedies of *quantum valebant* and, to a degree, reformation carry the same infirmities as previous discussed. The court's jurisdiction does not extend to granting *quantum valebant* recovery. The court could not reform the contract as in LaBarge, Beta Systems, and Applied Devices to have it reflect the actual agreement of the parties at the time of contracting.

3) FAR Part 35 and DoD Directive 5000.1

Plaintiff raises two additional arguments based on procurement regulations. First, plaintiff asserts that FAR § 35.006 applies to the contract selection and was violated by the DoD. Second, plaintiff alleges that DoD Directive 5000.1 was violated by selection of a fixed-price incentive contract.

On April 13, 1988, the Secretary of the Navy issued SECNAV Instruction 4210.6A, outlining acquisition policy for the Navy and Marine Corps. In paragraph 5.b, SECNAV Instruction 4210.6A explains, "Contracting officers shall adhere to the principles on choice of contract type expressed in Part 35 of the FAR." At trial Mr. Monaco, SPAWAR's Director of Contracts, testified:

> Q: Let me ask you more specifically. Was it your understanding at the time that the SECNAV instructions were applicable to the ATACC procurement?
>
> A: Well, it would be applicable to all procurements, yes.
>
> Q: So whatever provisions would be otherwise applicable under the SECNAV would apply to the ATACC contracts?
>
> A: Yes.
>
> Q: Without being specific about those instructions. And the answer is yes to that?
>
> A: Yes.

Based on the SECNAV Instruction and Mr. Monaco's testimony, plaintiff asks the court to consider selection of contract type under FAR Part 35.

FAR § 35.006 (1988), provides:

> (a) In [research and development ("R&D")] acquisitions, the precise specifications necessary for sealed bidding are generally not available, thus making negotiation necessary. However, the use of negotiation in R&D contracting does not change the obligation to comply with Part 6.

(b) Selecting the appropriate contract type is the responsibility of the contracting officer. However, because of the importance of technical considerations in R&D, the choice of contract type should be made after obtaining the recommendations of technical personnel. Although the Government ordinarily prefers fixed-price arrangements in contracting, this preference applies in R&D contracting only to the extent that goals, objectives, specifications, and cost estimates are sufficient to permit such a preference. The precision with which the goals, performance objectives, and specifications for the work can be defined will largely determine the type of contract employed. The contract type must be selected to fit the work required.

(c) Because the absence of precise specifications and difficulties in estimating costs with accuracy (resulting in a lack of confidence in cost estimates) normally precludes using fixed-price contracting for R&D, the use of cost-reimbursement contracts is usually appropriate (see Subpart 16.3). The nature of development work often requires a cost-reimbursement completion arrangement (see 16.306(d)). When the use of cost and performance incentives is desirable and practicable, fixed-price incentive and cost-plus-incentive-fee contracts should be considered in that order of preference.

(d) When levels of effort *can* be specified in advance, a short-duration fixed-price contract *may* be useful for developing system design concepts, resolving potential problems, and reducing Government risks. Fixed-price contracting may also be used in minor projects when the objectives of the research are well defined and there is sufficient confidence in the cost estimate for price negotiations. (See 16.207.)

(e) Projects having production requirements as a follow-on to R&D efforts normally should progress from cost-reimbursement contracts to fixed-price contracts as designs become more firmly established, risks are reduced, and production tooling, equipment, and processes are developed and proven. When possible, a final commitment to undertake specific product development and testing should be avoided until (1) preliminary exploration and studies have indicated a high degree of probability that development is feasible and (2) the Government has determined both its minimum requirements and desired objectives for product performance and schedule completion.

Although listed as an issue for trial, see Joint Statement of Issues of Fact and Law, filed Dec. 15, 1999, at 3, plaintiff offered no evidence at trial or in its briefs before trial that

SECNAV Instruction 4210.6A applied to the ATACC program, that the DoD violated FAR § 35.006, or even that FAR § 35.006 applies to the ATACC contract. SECNAV Instruction 4210.6A "applies to all programs that will result in a Full Scale Engineering Development (FSED) acquisition phase and which are expected to transition to production." Nor did plaintiff develop a record on what FSED acquisition signifies, let alone evidence that the ATACC program fits such a description. 10/ In fact, plaintiff's counsel asked Mr. Monaco to answer the question about applicability "[w]ithout being specific about those instructions."

In addition, plaintiff has not demonstrated that the ATACC program falls within the ambit of Part 35.

> The primary purpose of contracted R&D programs is to advance scientific and technical knowledge and apply that knowledge to the extent necessary to achieve agency and national goals. Unlike contracts for supplies and services, most R&D contracts are directed toward objectives for which the work or methods cannot be precisely described in advance.

FAR § 35.002. The language of FAR § 35.006(c) is not mandatory: Fixed-price contracts are "normally preclude[d];" "the use of cost-reimbursement contracts is usually appropriate;" and "[w]hen the use of cost and performance incentives is desirable and practicable, fixed-price incentive . . . contracts should be considered." For these reasons plaintiff has failed to satisfy its burden on this claim.

DoD Directive 5000.1, effective between September 23, 1987 and February 23, 1991, provides, in pertinent part:

> [T]he following are to be considered in developing appropriate strategies tailored to meet the unique circumstances of individual programs.
>
> a. During the initial phases of development, studies shall be conducted to identify trade-offs between cost and performance requirements, assess

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10/ Paragraph 5.a of SECNAV Instruction 4210.6A is not consistent with the applicability of the Instruction in the instant matter. "The development cycle of each program will begin with a minimum of two contractors/contractor teams performing concurrent, but separate development up to FSED at which time it will normally be narrowed to two contractors developing a system to one design." In this case such a process did not occur, suggesting that the ATACC program was not a FSED acquisition.

> technological risk, and identify the cost drivers and producibility factors associated with using new or immature technologies.
>
> b. Commensurate with risk, such approaches as developing separate alternatives in high-risk areas; using early funding to design-in reliability and support characteristics; reducing lead time through concurrency; using competitive prototyping of critical components; combining acquisition phases and making use of evolutionary acquisition procedures; and combining developmental and operational test and evaluation shall be considered and adopted when appropriate. . . .
>
> . . . .
>
> f. Whenever possible and appropriate, consideration should be given to maximizing the use of "off-the-shelf" commercial products and the streamlining of military specifications so that only those military specifications that are directly relevant to the item(s) being produced are applied.
>
> g. Contract type shall be consistent with all program characteristics including risk. Fixed price contracts are normally not appropriate for research and development phases. For such efforts, a cost-reimbursable contract is preferable because it permits an equitable and sensible allocation of program risk between the contracting parties.

DoD Directive 5000.1, at 5-6 (Sept. 1, 1987)

The only evidence adduced at trial on the issue of DoD Directive 5000.1 includes the following exchange between plaintiff's counsel and Mr. Monaco.

> Q: Are you also familiar with DOD directives?
>
> A: Yes.
>
> Q: Are you familiar with DOD directive 500[0].1?
>
> A: Yes, I am.
>
> Q: And again, just basically, do you recall what the substance of that directive is?

A: It was -- 5000.1 and 5000.2 were DOD procedures regarding major systems acquisitions and the process thereof. It spelled out the whole program process.

Q: During the time that you were the sole selection authority on the ATACC program, was it your understanding that you were required to follow DOD directive 5000.1 in relation to the ATACC contract?

A: I guess I don't know the answer to that because 5000.1 and 5000.2 were for major systems. And there was -- again, there is a definition of what a major system was. And I don't know at this time or even back then if we really called ATACC a major system, or whether it met those thresholds. And often, when you do have major systems, too, for whatever reason, you may not follow that exact process. You may take another path. There is exceptions to everything.

Q: Well, whether or not ATACC fell within one of the exceptions, was 5000.1, 5000.2 otherwise applicable? In other words, what I am saying is --

A: I think the answer is no.

Q: -- in applying it, your point is that the ATACC contract may not have met all of the criteria for 5000.1, 5000.2. But my question is, putting that concern aside, are those directives otherwise applicable? In other words, do you have to go through the analysis to determine whether or not the ATACC contract falls within one of the exceptions?

A: Yes. I think you need to make a determination whether it applies or doesn't apply. It is very complicated. It requires effort from lots of people with different functions.

DOD Directive 5000.1 only requires "consider[ation]" of certain factors "in developing appropriate strategies tailored to meet the unique circumstances of individual programs." When asked if he went through the analysis required in DoD Directive 5000.1, Mr. Monaco answered, "Yes." Plaintiff undertook no direct inquiry of the factors that were to be "considered" when developing the procurement strategy. The testimony of Mr. Monaco does not suffice to establish that DoD Directive 5000.1 was violated in the selection of a fixed-price incentive contract for the ATACC program. In addition, that the factors are to be considered does not elevate those factors to the level of government obligation. The obligation under DoD Directive 5000.1 was to consider the factors, not necessarily to adopt

them as part of the procurement strategy. Plaintiff is not entitled to recover on this claim because of its failure to meet its burden of proof.

Plaintiff has failed to satisfy its burden with regard to its allegations that the Government violated regulatory provisions -- FAR Part 16, FAR Part 35, and DoD Directive 5000.1 -- that may govern the award of fixed-price incentive contracts.

3. Superior knowledge

Plaintiff asserts that the Government possessed superior knowledge, and did not disclose, that the contract would require significant development and was unsuited for the contract type. Because the court has determined that the selection of the contract type was appropriate, plaintiff's superior knowledge claim related to contract type cannot succeed and will not be considered further. Plaintiff's claim of superior knowledge relating to the compatibility of MTS and JINTACCS are addressed in a later section.

To be entitled to recover under a claim of superior knowledge, plaintiff must demonstrate that

> (1) [it] undert[ook] to perform without vital knowledge of a fact that affect[ed] performance costs or duration, (2) the government was aware the contractor had no knowledge of and had no reason to obtain such information, (3) any contract specification supplied misled the contractor, or did not put it on notice to inquire, and (4) the government failed to provide the relevant information.

American Ship Bldg. Co. v. United States, 228 Ct. Cl. 220, 225, 654 F.2d 75, 78 (1981); see also Helene Curtis Indus., Inc. v. United States, 160 Ct. Cl. 437, 442, 312 F.2d 774, 777 (1963).

Plaintiff's allegations of superior knowledge about the amount of development necessary to complete the ATACC fail to satisfy the criteria for a superior knowledge claim. First, GDS did not undertake performance without vital knowledge as to a fact that affected performance duration or cost. The potential level of effort required by GDS's solution is not a fact. GDS's proposal contained business and technical projections that are far from "facts." Even if the potential amount of development were a fact, GDS did not perform without this vital knowledge. GDS was granted full access to the Calculon library, engaged in a number of meetings with Navy and Marine Corps personnel about the ATACC program, and engaged in significant effort to identify how it could satisfy the contract requirements.

Second, the Government did not know, nor should it have known, that GDS was lacking information as to the nature of the contract. GDS was judged technically competent prior to being selected as the ATACC contractor and demonstrated an understanding of the requirements for the ATACC. GDS personnel, like Mr. McLean, even believed that the ATACC contract was within GDS's ken. When a sophisticated contractor's concept is adjudged technically competent and that contractor projects an air of competency with regard to what was required for performance, the Government cannot be held accountable for constructive knowledge of a lack of information about the nature of the contract.

Third, the Government did not fail to provide relevant information about the degree of development that the contract would require. Although plaintiff contends, and demonstrated, that the Government was slow to respond to some Action Items, no record was made of the Government's failure to provide information about the contract before performance. Indeed, the Government provided a panoply of documents to assist potential bidders in determining whether they possessed the wherewithal to develop the ATACC. Each prospective bidder was able to develop its own approach to the performance specification for the ATACC. It was each prospective bidder's choice to determine the degree of development that it wanted to do within the framework of the greatest extent of NDI.

Plaintiff has failed to prove its allegation of superior knowledge as to the developmental nature of the contract.

4. Mutual mistake

A party alleging mutual mistake must prove that 1) both parties were mistaken in their belief regarding a fact existing at the time of contracting; 2) the mistaken belief must have constituted a basic assumption on which the contract was made; 3) the mistake must have had a material effect on the bargain; and 4) the contract must not have placed the risk of mistake on the party that is seeking relief. See Atlas Corp., 895 F.2d at 750. Defendant only challenges the first and fourth elements of plaintiff's burden. The court therefore considers only whether the parties were mistaken in their belief regarding a fact existing at the time of contract and whether the contract placed the risk of mistake on GDS.

1) Belief regarding a fact

Relying on Gould, Inc. v. United States, 935 F.2d 1271 (Fed. Cir. 1991), and National Presto Industries, Inc. v. United States, 167 Ct. Cl. 749, 338 F.2d 99 (1964), cert. denied, 380 U.S. 962 (1965), plaintiff asserts that the non-developmental nature of the contract was a

fact. Defendant counters that the amount of development needed to complete the contract was not a fact, but implicated business or technical judgment.

In Gould the contractor sought relief from added expenses by way of reformation of a contract to manufacture tactical radios for the Navy. Unable to perform on the contract without completely redesigning the radios, the contractor alleged that the significant additional expenses incurred in redesigning the radios were due to a mutual mistake as to the amount of design and development that the contract would require. The trial court dismissed the contractor's claim, reasoning that a settlement agreement between the parties precluded the contractor from pursuing its reformation claim, and that, in the alternative, the contractor had failed to state a claim. See Gould, Inc. v. United States, 19 Cl. Ct. 257, 263-64, 269 (1990), vacated and remanded on other grounds, 935 F.2d 1271 (Fed. Cir. 1991). Without discussion as to the merits of the contractor's claim, the Federal Circuit assessed only the Claims Court's ruling on which party bore the risk of the mistake, when it held that the conclusory mistake allegations survive a motion to dismiss. See Gould, 935 F.2d at 1276.

The procedural posture and the context of Gould mitigate the weight that plaintiff places on it. Not only did the Federal Circuit not consider the merits, but in assessing the ability of the allegation to survive a motion to dismiss, the Federal Circuit only evaluated the Claims Court's ruling that the contractor had failed to state a claim because of assumption of the risk.

Plaintiff cites National Presto Industries for the proposition that a mistake of fact may exist where neither party was aware of additional steps needed to complete the contract. That case involved a contract for the production of munitions shells by two distinct hot forging methods. The parties contemplated the use a particular machine, which had been employed in the less sophisticated of the two methods, to be used in the newer, more efficient method. Due to the newer method's greater efficiency, the Government deemed use of one of the machines unnecessary. The contractor soon discovered that such an additional step in the manufacturing process was necessary and brought suit to recover damages for additional expenses incurred under a mutual mistake theory. The Court of Claims found mutual mistake when neither party to the contract was aware that an additional step in the manufacturing process, use of turning equipment, was needed to generate the finished product. See 167 Ct. Cl. at 761, 338 F.2d at 107.

Since the Court of Claims decision in National Presto Industries, the holding has undergone a clarification and narrowing. Just three years after National Presto Industries, the Court of Claims distinguished the decision on the grounds that the parties "*mutually* agreed to the exclusion of certain equipment later found to be indispensable." Natus Corp. v. United States,178 Ct. Cl. 1, 13, 371 F.2d 450, 458 (1967). Seizing on the concept of "joint

enterprise," the Court of Claims reiterated the narrower reading of National Presto Industries. Foster Wheeler Corp. v. United States, 206 Ct. Cl. 533, 557-58, 513 F.2d 588, 601-02 (1975) ("The chief consideration which led the court to find mutual mistake in National Presto Industries . . . was a 'mutual agreement' of the parties prior to award of the contract, such that the court viewed the project as a 'joint enterprise.'")

In Dairyland Power Cooperative v. United States, 16 F.3d 1197 (Fed. Cir. 1994), the Federal Circuit held that the parties' erroneous belief as to future business climate cannot constitute an existing fact at the time of contracting. Dairyland Power involved the construction of a nuclear power plant by the Atomic Energy Commission (the "AEC"), the operation of which would be contracted to Dairyland Power, a public utility. Pursuant to the parties' contract for such services, the AEC offered to sell the power plant to Dairyland Power after several years of performance on the contract. The parties agreed to a transfer of the property for the nominal sum of one dollar. Due to changes in the laws governing disposal of nuclear waste, Dairyland Power incurred $97 million in expenses to store the waste. Dairyland Power later sought recission of the contract of sale because of the lack of availability of commercial processing for nuclear waste. In ruling that Dairyland Power was not able to satisfy the first element of mutual mistake, the court noted that the party seeking reformation must demonstrate that the parties held an erroneous belief as to an existing fact. See id. at 1202. The change in business climate, which neither party could foresee, did not amount to a fact at the time of contracting. "'A party's prediction or judgment as to events to occur in the future, even if erroneous, is not a "mistake" as that word is defined [under the doctrine of mutual mistake of fact].'" Id. at 1203 (quoting Restatement (Second) of Contracts, § 151 cmt. A (1981)). 11/

Although Dairyland Power is not exactly on point, it is sufficiently analogous to support a conclusion that a projection about the non-developmental nature of the contract is not an "existing fact." Dairyland Power cites a number of federal circuit court cases, including United States v. Southwestern Electric Cooperative, Inc., 869 F.2d 310 (7th Cir. 1989), and United States v. Garland, 122 F.2d 118 (4th Cir.), cert. denied, 314 U.S. 685 (1941), for the proposition that predictions and judgments do not qualify as existing facts for a claim of mutual mistake. The court in Southwestern Electric Cooperative held that "mistake[s] about future costs of construction" pose a "fatal difficulty" for a claim of mutual

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11/ It is noteworthy that Bowen-McLaughlin-York Co. v. United States, 813 F.2d 1221 (Fed. Cir. 1987), which plaintiff relies on to advance its argument on risk bearing, see infra at 44-45, takes a position detrimental to plaintiff on the issue of mistake. "Reformation is not allowed for a mistake in business judgment." Bowen-McLaughlin-York, 813 F.2d at 1222 n.1 (citing cases).

mistake because "the doctrine of mutual mistake does not cover an erroneous 'prediction or judgment as to events to occur in the future.'" 869 F.2d at 314 (quoting Restatement (Second) of Contracts § 151a) In Garland the court prescribed:

> In determining whether there has been a mutual mistake of fact, we must examine the facts as they existed at the time of the agreement for the cash-surrender of the policy. A mutual mistake in prophecy or opinion may not be taken as a ground for rescission where such mistake becomes evident through the passage of time. What is today only a conjecture, an opinion, or a guess, might by tomorrow, through the exercise of hind-sight, be regarded then as an absolute fact.

122 F.2d at 122 (citation omitted). Plaintiff's claim for mutual mistake suffers the difficulties highlighted in Southwestern Electric Cooperative and Garland.

The Government did not warrant that GDS could perform the ATACC contract based on 70% NDI -- that is, it did not engage in a joint enterprise with GDS by expressly excluding or including NDI. The projection was a business and technical judgment held solely by GDS. Indeed, GDS made a number of predictions about the amount of NDI it would use if awarded the ATACC contract. These predictions -- as evidenced by, among other evidence, GDS's demonstration video (more than 65%), GDS's proposal ("approximately 60%"), and Mr. LaWare's testimony (60-70%) -- ranged from 60-70%. That GDS had less than a firm idea of the extent of development necessary to manufacture its vision of the ATACC suggests that the developmental nature of the contract is not an "existing fact," as much as it is a prediction. Because the performance specification allowed GDS to choose its design to satisfy the specification and because the amount of effort or development that would be needed to complete that design was a projection, and not a fact existing at the time of contracting, plaintiff cannot sustain a claim for mutual mistake with regard to the non-developmental nature of the contract. Accordingly, recovery based on mutual mistake is not appropriate.

2) Risk bearing

Although mistake readily may be apparent with respect to the second and third elements, the fourth element, assumption of the risk, thwarts plaintiff's claim. A party bears the risk of mistake when 1) the risk is allocated to it by agreement of the parties; 2) it is aware, at the time the contract is made, that it has only limited knowledge with respect to the facts to which the mistake relates, but treats its limited knowledge as sufficient; or 3) the risk is allocated to it by the court on the ground that it is reasonable in the circumstances to do so.

In the instant matter, the risk of mistake was allocated to GDS through the selection of a fixed-price incentive contract.

Plaintiff relies upon four cases -- Gould; Bowen-McLaughlin-York Co. v. United States, 813 F.2d 1221 (Fed. Cir. 1987); National Presto Industries; and Walsh v. United States, 102 F. Supp. 589 (Ct. Cl. 1952) -- for the proposition that "[i]t is well settled that the mere fact that a contract was 'fixed price' does not shift the risk of all cost overruns to the contractor." Plf's Br. filed Dec. 2, 1999, at 33. Defendant counters with four cases -- Yankee Atomic Electric Co. v. United States, 112 F.3d 1569 (Fed. Cir. 1997); United States v. Spearin, 248 U.S. 132 (1918); Dalton v. Cessna Aircraft Co., 98 F.3d 1298 (Fed. Cir. 1996); and Cleveland Telecommunications Corp. v. United States, 39 Fed. Cl. 649 (1997) -- that advance its position that "a fixed price contract, by its nature, assigns the risks of unexpected performance costs to the contractor." Def's Br. filed Dec. 13, 1999, at 36. This seemingly intractable conflict is resolved by a review of the individual cases.

In Bowen-McLaughlin-York, the Claims Court held that the contract was a fixed-price contract in which the contractor bore its own risk, disposing of the claim of mutual mistake. See Bowen-McLaughlin-York Co. v. United States, 10 Cl. Ct. 223, 226 (1986). Relying on Southwest Welding & Manufacturing Co. v. United States, 179 Ct. Cl. 39, 52, 373 F.2d 982, 989-91 (1967), the Federal Circuit rejected this characterization:

> [T]he *Southwest Welding* court founded its ruling on the underlying fact that both the Government and the contractor intended that the latter be compensated on the basis of its actual costs. . . .
>
> The case is the same here. When the original letter contract was turned into a price redeterminable agreement it became a cost-reimbursable contract.

Bowen-McLaughlin-York, 813 F.2d at 1222.

In National Presto Industries, the Court of Claims examined mutual mistake related to a fixed-price contract under which the Government paid for the machinery that the contractor used in the manufacture of the munitions shells for which the contract set a fixed price. When faced with a question "[t]he answer [to which was] not easy," the court ruled that the contractor did not bear the consequences of the mutual mistake. National Presto Indus., 167 Ct. Cl. at 764, 338 F.2d at 109. The answer was not easy because of the nature of the contract.

> Plaintiff's acceptance of a fixed-price contract, instead of some form of cost-plus arrangement or research-and-development contract could suggest the allocation to it of all uncovered risks. But in this case that solution would be

> too facile for a risk connected so directly with the equipment to be used. Since the Government was to pay for the machines, in the area of equipment the agreement was at least as close to a cost contract as to a fixed-price one. . . . It should not be said, in all the circumstances, that the agreed fixed-price included the full risk that the contract could not be effectively performed without turning equipment. Our best judgment is that the specific risk as to the cost of proving that fact was not distributed, explicitly or implicitly, by the arrangement the parties made.

Id. at 765-66, 338 F.2d at 109-10 (footnote omitted).

In Walsh the court found mutual mistake as to the labor rates that would be applicable during contract performance of a fixed-price contract. Without a discussion of assumption of the risk, the court ruled, "because of their mutual ignorance of a material existing fact, they made a writing which they would not have made but for that ignorance; that if they had been aware of the actual fact, they would have negotiated and contracted on that basis." Walsh, 102 F. Supp. at 591. A survey of the 20 Court of Claims cases on mutual mistake issued from 1945 to the end of 1952 fails to reveal whether assumption of the risk was an element of mutual mistake at the time of Walsh. Indeed, a perusal of federal cases between 1945 and the end of 1952 provides only one case that discusses assumption of the risk with regard to mutual mistake of fact. In Ricketts v. Pennsylvania Railroad Co., 153 F.2d 757 (2d Cir. 1946), Judge Frank, concurring, wrote:

> Two approaches have been suggested which diverge from that of Williston and the Restatement but which perhaps come closer to the realities of business experience. (1) The first utilizes the concept of an "assumption of risk": The parties to a contract, it is said, are presumed to undertake the risk that the facts upon the basis of which they entered into the contract might, within a certain margin, prove to be non-existent; accordingly, one who is mistaken about any such fact should not, absent a deliberate assumption by him of that risk, be held for more than the actual expenses caused by his conduct. Otherwise, the other party will receive a windfall to which he is not entitled.

Id. at 766-67 (Frank, J., concurring) (footnote omitted). This concurrence implies, if not states, that assumption of the risk may not have been an element of mutual mistake at the time of the Walsh decision.

In Gould the Federal Circuit considered the Claims Court's dismissal of the complaint for failure to state a claim. As discussed above, a fixed-price contract was let for the construction of tactical radios for the Navy. The development of the tactical radios allegedly

involved more design work than the parties had anticipated. The Federal Circuit rejected the Claims Court's rationale that plaintiff failed to state a mutual mistake claim because a fixed-price contract places the risk on the contractor. See Gould, 935 F.2d at 1276. Based on the wording of the complaint, the Federal Circuit concluded only that "a claim of mutual mistake was adequately pled." Id. (citations omitted). The Federal Circuit did not consider the merits of the position that a fixed-price contract does not automatically place the risk on the contractor.

Plaintiff's well-settled rule appears to be not so well settled. Bowen-McLaughlin-York and National Presto Industries contain fixed-price contracts more akin to cost-reimbursement contracts; this apparently was determinative in each case. Walsh was decided under a different legal standard, one that did not include an element that evaluated assumption of the risk. Gould's procedural posture prevents illumination of the merits of the claim that fixed-price contracts do not shift the risk to the contractor.

By contrast, defendant offers several recent cases that support its position on fixed-price contracts and assumption of the risk. In Yankee Atomic Electric, the Federal Circuit, while discussing the unmistakability doctrine, noted that both the Supreme Court and the Court of Claims had adopted the position that fixed-price contracts shift the risk to the contractor. See 112 F.3d at 1578-79. In Spearin the Court held, "Where one agrees to do, for a fixed sum, a thing possible to be performed, he will not be excused or become entitled to additional compensation, because unforeseen difficulties are encountered." 248 U.S. at 136. In ITT Arctic Services, Inc. v. United States, 207 Ct. Cl. 743, 524 F.2d 680 (1975), the Court of Claims allocated the risk thusly: "[T]he contractor in a fixed-price contract assumes the risk of unexpected costs. In firm fixed-price contracts, risks fall on the contractor, and the contractor takes account of this through his prices." Id. at 763, 524 F.2d at 691 (quoting McNamara Construction of Manitoba, Ltd. v. United States, 206 Ct. Cl. 1, 8, 509 F.2d 1166, 1169-70 (1975)) (citations omitted). The Federal Circuit, in Cessna Aircraft Co., stated: "Because fixed-price contracts do not contain a method for varying the price of the contract in the event of unforeseen circumstances, they assign the risk to the contractor that the actual cost of performance will be higher than the price of the contract." 98 F.3d at 1305. Although resolving summary judgment related to a firm fixed-price contract on different grounds, the court in Cleveland Telecommunications noted that "[a]lthough few recent cases have dealt with claims for recompense under fixed-price contracts, the United States Court of Claims has 'consistently held that the contractor in a fixed-price contract assumes the risk of unexpected costs.'" 39 Fed. Cl. at 653 (quoting ITT Arctic Servs., 207 Ct. Cl. at 763, 524 F.2d at 691).

The analysis of the risk bearing is the same, even though the contracts at issue in the cases cited by defendant are fixed-price, as opposed to fixed-price incentive. In Cessna

Aircraft, the Federal Circuit noted that fixed-price contracts contain no method for varying the price. While the same is not true in a fixed-price incentive contract because the price can be below the ceiling in the event of efficient performance, fixed-price incentive contracts do place a maximum limit on government liability. The maximum limit on government liability is the variance about which the court in Cessna Aircraft was writing. The risk placed on the Government through a fixed-price incentive contract is that the contractor will perform below the target cost and the Government will have to pay a higher profit to the contractor.

By agreement GDS bore the risk of additional development costs and effort. The contract was a fixed-price incentive contract that capped the Government's liability. In such circumstances reformation is not warranted because such would not bring the agreement in accord with the parties' intentions, which in the instant case were that GDS would bear the risks of cost overruns.

4. Appropriate remedy

Because plaintiff is not entitled to relief for regulatory violations due to the selection of a fixed-price incentive contract, for superior knowledge as to the developmental nature of the contract, or for mutual mistake as to the developmental nature of the contract, the court need not consider the appropriate remedy. The court found liability for failure to adhere to appropriations restrictions and ruled that the appropriate remedy was enforcement of the contract as written.

II. Whether Engineering Change Proposal No. 1 is limited to $2 million

The Marine Corps's desire for greater capability and more requirements after the SRRs of April and May 1989 gave rise to ECP1, a significant change to the ATACC. On July 10, 1989, SPAWAR issued Modification P0007, Task Directive No. 1, to GDS, requesting that GDS prepare an initial version of ECP1. Messrs. Michael A. Tomasulo, Glinka, and Steven J. Hanlon, GDS's Deputy Director of Business Operations, GDS's Business Manager, and GDS's Senior Contracts Administrator, respectively, agreed that GDS should get interim funding to get the job started, and then quote the exact price. On July 25, 1989, GDS submitted Task 13A, the technical proposal for the workstation improvement. The Marine Corps rejected this proposal because of its $8-million price. GDS continued to develop its ECP1 proposal.

At its most basic, ECP1's purpose was to upgrade the computers in the ATACC and to enhance the software. The proposal called for the replacement of three OCs manufactured by Genisco with three DTTs, for a total of five DTTs. DTTs are more powerful and versatile than OCs. With five DTTs the system had to be connected with a LAN/Ethernet, the

decision support processor had to be replaced, and NDI technology had to be upgraded for the support of multiple, concurrently updated windows. This upgrade required the addition of GDS-developed DSX, a multiple-window environment, which also would perform some decision support. GDS was required to develop a new distribution architecture in which each DTT did its own individual work, as opposed to the OCs, which relied on another computer to perform the bulk of their work. CSCI changes also were made.

On August 17, 1989, GDS submitted a revised proposal for ECP1. This proposal reduced the price by increasing the threshold for percentage of NDI code modification that would trigger the requirement to re-write code in Ada, by downscoping the functionality that would be added by the changes in ECP1, and by reducing the hours required and recalculating the labor rates. Concurrently, GDS provided a ROM, which provided less detail than an informal proposal, estimating that ECP1 would cost approximately $2.5 million. At this time, according to Mr. Glinka, GDS and Lt. Col. Ware agreed that the best way to proceed was to secure funding for ECP1 to commence and to negotiate and definitize the price at a later time. Lt. Col. Ware wanted to move quickly and indicated that GDS could accept a verbal confirmation from the contracting officer so long as the contracting officer followed up in writing.

SPAWAR Contracting Officer Thornewell authorized GDS to undertake Technical Directive 03 and to design an approach for ECP1. To expedite ECP1, Lt. Col. Ware wrote an August 23, 1989 memorandum to SPAWAR detailing his Request for Urgent Procurement. The urgency stemmed from the need to avoid a cost impact on the ATACC prototype caused by developing software for the OCs that were to be replaced. Lt. Col. Ware requested SPAWAR to authorize GDS to proceed immediately. He indicated a price up to $2 million and the determination of a fair and reasonable price would be her decision. Box 22 of Ware's memorandum records $2 million as the estimated net total cost, which is a cost and not a price amount. The second page of the attached modification contains the limitation of government liability, which is a price figure based on the first paragraph on page two of the attached modification. Two days later GDS sent a letter to Ms. Thornewell to confirm a telephone call directing GDS to commence with ECP1. The August 25, 1989 letter indicates that the modification to be drafted by SPAWAR was to be "a proceed and quote" with a not-to-exceed ("NTE") of $2 million. Ms. Thornewell acknowledged receipt of this letter by signature and struck through "unilateral" and replaced it with "bilateral." GDS commenced work based on the letter from Ms. Thornewell. Ms. Thornewell testified that

when she signed the acknowledgment she did not know what "proceed and quote" meant. 12/

On September 8, 1989, Ms. Thornewell issued a *post facto* authorization for performance of Technical Directive 03 for the modifications to the ATACC workstations. The authorization indicates that "[q]uestion of a technical nature may be directed to LtCol James Ware." Ten days later, SPAWAR issued the ECP1 modification, Modification P00011. As of the drafting of ECP1, Ms. Thornewell had not received a proposal from GDS and assumed that GDS included profit when it gave an NTE price. Mr. Tomasulo signed Modification P00011 on September 13, 1989.

Modification P00011 projected a definitization date of November 30, 1989, based on adequate submissions by GDS. Modification P00011 contains an incorrect changes clause, which applies to cost reimbursement contracts, of which the ATACC contract is not one, and which is of no moment in the instant litigation.

On September 25, 1989, the Government acknowledged that the ECP1 redirection had adversely impacted the schedule. Lt. Col. Ware agreed to relief from a C/SSR.

On January 17, 1990, the contracting officer sent a letter to GDS to notify it that subcontractor termination costs caused by ECP1 would be part of costs for definitization of ECP1. GDS reasonably took this notice to mean that definitization would exceed $2 million. On February 5, 1990, GDS submitted its first ECP1 cost proposal, prepared by Mr. Tomasulo. The cost proposal contains a target cost increase of $2,571,438.00, a target price increase of $3,179,119.00, and a ceiling price increase of $3,589,898.00. Termination costs were not contained in the February 1990 proposal because GDS had yet to discuss termination with subcontractors and obtain proposals from them. Mr. Glinka expected that total costs would be at least $2.5 million, plus termination costs. GDS personnel were of the opinion that GDS had an agreement to submit its vendor termination costs under a separate cover at a later date. At this point in time, Ms. Thornewell believed that GDS could not be paid more than $2 million. She did not recall whether she notified GDS of her position when

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12/ On November 8, 1999, the court granted defendant's motion *in limine* seeking to limit the interpretation of Modification P00011 to an NTE price of $2 million. See Order filed Nov. 8, 1999. At trial the court took evidence on the meaning of Modification P00011 when it became apparent that the earlier order did not fully address the issues raised by the terms of Modification P00011. Pursuant to RCFC 54(b), the court's order "is subject to revision at any time before the entry of the judgment adjudicating all the claims and the rights and liabilities of all parties," and the court reconsidered its November 8, 1999 order.

she received the February 1990 proposal in excess of $2 million. Ms. Thornewell gave no weight to the notion that GDS's estimate of more than $2 million in costs signified that GDS would be paid any excess more than $2 million.

On July 30, 1990, GDS sent a letter to Ms. Thornewell giving notice that GDS will have expended 85% of the funding for ECP1 by the end of August 1990. GDS requested additional funding in the amount of $1,589,898.00 to complete ECP1. Ms. Thornewell telephoned Mr. Hanlon to tell him that Modification P00011 was NTE $2 million. GDS thus received its first notice that the Government believed that Modification P00011 contained an absolute maximum of $2 million. It was not Mr. Tomasulo's understanding that the modification had a maximum price. Mr. Tomasulo, who had worked for the Defense Contract Audit Agency (the "DCAA") previously, testified that DCAA had used "proceed and quote" in the manner that GDS had interpreted the term.

Mr. Glinka sent a copy of GDS's request for additional funding to Mr. Tomasulo, which they discussed. Mr. Glinka first worked with Ms. Thornewell to resolve the differences. He was unsuccessful, so Mr. Tomasulo met with Ann Johnson, Ms. Thornewell's superior. GDS was rebuffed at this meeting, as well, although the Government did request an updated proposal at this time. Ms. Thornewell also took the position that an audit was required. She viewed it as her affirmative responsibility to find that GDS spent the $2 million. If GDS's costs actually had exceeded $2 million, she intended to settle at $2 million.

To ascertain whether GDS spent $2 million, Ms. Thornewell requested that Defense Contract Administrative Services ("DCAS") audit the proposal. Ms. Thornewell testified that it was typical to receive proposals in excess of an NTE because contractors want the Government to settle exactly at NTE prices. Ms. Thornewell had to request the audit at least three times due to DCAS non-responsiveness to her requests.

On October 1, 1990, Mr. Tomasulo met with Ms. Thornewell and Lt. Col. Ware to discuss GDS's position that ECP1 was "proceed and quote." Mr. Tomasulo documented this meeting with an October 22, 1990 letter to Ms. Johnson. Ms. Johnson responded that there appeared to be misunderstanding on both sides, that the parties should look at contract mistakes under the FAR, and that the contract was to be transferred to MCRDAC, where Mr. Stolark, MARCORSYSCOM Director of Contracts, might be able to offer changes through mistakes in contract. Mr. Tomasulo's letter also discussed DCAA's rejection of the February 1990 information from GDS as not in conformity with the FAR.

Ms. DiMaio, who assumed contracting officer duties from Ms. Thornewell when the contract was reassigned to MCRDAC, responded to Mr. Tomasulo on January 31, 1991. She

notes that she reviewed the ECP1 issue, restates what she believes GDS's position to be, and indicates that no definitization has yet occurred. 13/ She submitted the letter to the legal department for review. The letter requests a re-submission of a revised cost proposal because others submitted to date had not been qualifying proposals. As of the date of the letter, Ms. DiMaio was aware that in July 1990 GDS indicated that it was nearing the $2 million NTE. Ms. DiMaio's letter had the purpose of notifying GDS that the $2 million was an absolute ceiling. She testified that the Government did not agree to a cost proposal that exceeded $2 million. SPAWAR and MCRDAC attorneys had indicated to her that the NTE price was an absolute ceiling.

Some time after the issuance of her January 31, 1991 letter, Ms. DiMaio made handwritten notes on it about Modification P00011. These notes reflect "lessons learned." These include greater clarity of the 50% limitation of liability, more specificity indicating that the modification is for changed work only, a requirement for segregation of costs, the use of the correct changes clause, greater specificity for the NTE clause, and a desire for a proposal more suitable to negotiations. Ms. DiMaio maintained that these deficiencies did not undermine the validity of the modification, but only suggest that it could have been drafted better. Nonetheless, in her characteristically straightforward fashion, Ms. DiMaio identified exactly the vulnerabilities in the government-drafted modification.

On March 22, 1991, GDS submitted a revised ECP1 proposal in four volumes and a subcontractor termination proposal. The ECP1 proposal contained an SF1411 that requests a target cost increase of $3, 251,379.00, a target price increase of $3,910,431.00, and a ceiling price increase of $4,550,166.00. The proposal also included estimated actual costs for labor and materials. GDS was able to segregate material costs and track them as actual costs. GDS presented its methodology for calculating estimated actual costs and its cost rationale. The proposal also contained an SF1435 settlement proposal for vendor termination costs in the amount of $509,470.00. This submission marks the first time that GDS raised vendor termination cost with the Government. GDS indicated that ECP1 and the vendor termination proposal could be reviewed and negotiated independently of each other. GDS received no response to the vendor termination proposal. In April 1991, GDS submitted additional documentation to the Government. No negotiation schedule was set.

On January 29, 1992, Mr. Glinka prepared and sent to Ms. DiMaio estimated actual costs for ECP1 in response to Ms. DiMaio's request for actual costs. Mr. Glinka used the same methodology to generate these numbers as the earlier GDS numbers. No objection was

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13/ Ms. DiMaio testified that she had never heard the term "proceed and quote" in government contracting before it appeared in Mr. Hanlon's August 25, 1989 letter.

made to the submission. Ms. DiMaio requested actual hours for ECP1 and ECP3. On February 21, 1992, GDS submitted estimated actual hours incurred for ECP1 to Ms. DiMaio. For actual costs GDS restated the proposal numbers.

On July 30, 1992, Ms. DiMaio completed the Business Clearance for Definitization of ECP1. She noted "the recommendation received from the ATACC program office (C2AC) basically consisted of total concurrence with the ECP costs, without exception." Although Ms. DiMaio was unable to recollect the source of her information, the Business Clearance acknowledged that GDS was in an overrun position by approximately $14 million, and that "a fair amount of this overrun could be attributed to the massive design change imposed by ECP #1." Ms. DiMaio described the change as "massive," not based on the technical nature of the change, but on its dollar value. The Business Clearance notes that the GDS's position of $3,910,431.00 is above the NTE price in Modification P00011. She viewed any amount beyond the $2 million as irrelevant. It was possible, according to Ms. DiMaio, that GDS actually was entitled to less than $2 million. Price data were needed to show that GDS at least was entitled to the $2-million ceiling price. Ms. DiMaio recounted her multiple efforts to obtain an audit of ECP1. Finally, she recommended that the Government reopen negotiations if GDS filed a successful claim.

The third paragraph on page 14 of the Business Clearance projects the need for better numbers should GDS file and succeed on a claim. The Government would need a basis for its negotiating position. Ms. DiMaio was unsure how the Government would arrive at a negotiating position given the fact that the numbers she arrived at in the Business Clearance were "somewhat arbitrary." This was the best number she could derive based on the data available to her. Ms. DiMaio requested actuals from GDS.

On November 19, 1992, Lt. Col. Thomas L. Dempsey, Assistant Program Manager for Aviation Command and Control Systems, accepted delivery of the ATACC prototype, CLIN 0001, by signing a DD250, Material Inspection and Receiving Report. The DD250 indicated acceptance "[s]ubject to adjustments for outstanding modifications." According to Mr. Glinka's testimony, GDS claimed its adjustments related to "costs for ECP-1 and any additional other outstanding costs." Lt. Col. Dempsey was not familiar with ECP1, but believed it was still dragging on as of November 19, 1992.

On February 3, 1993, GDS -- through a letter from Robert G. Nyberg, GDS's Director of Contracts, to Ms. DiMaio -- acknowledged receipt of, and took exception to signing, a draft modification for ECP1. In this letter GDS requested a meeting to discuss ECP1-related issues. No meeting took place.

Negotiation and definitization never occurred for ECP1. The Government unilaterally definitized Modification P00011 for ECP1 at $2 million.

In its November 8, 1999 order granting defendant's motion *in limine*, the court ruled that Modification P00011 has a stated NTE of $2 million, the final amount of which was to be definitized, but that plaintiff would be allowed to introduce evidence that the parties' subsequent actions and writings bore a different interpretation. The court noted that even if Modification P00011 unambiguously were to state that the price for ECP1 was NTE $2 million, the documents appended to plaintiff's opposition called into question whether the Government treated Modification P00011 consistently, *i.e.*, by entertaining a claim in a greater amount, by auditing it, and so forth.

From the parties' briefing on the motion *in limine*, the court's attention was focused on the use of "proceed and quote" and "NTE" in the Modification. During trial the court's attention was focused more carefully on the incorporation of a limitation of liability clause that indicated that the NTE amount was not in excess of 50% of the total liability for the modification.

Modification P00011 contains FAR § 52.216-24, "Limitation of Government Liability," and it indicates a ceiling of $2 million. Although this would seem to end the inquiry, FAR § 16.603-2, covering letter contracts explicates the use of FAR § 52.216-24 in letter contracts, like Modification P00011. FAR § 16.603-2 provides:

> (a) A letter contract may be used when (1) the Government's interests demand that the contractor be given a binding commitment so that work can start immediately and (2) negotiating a definitive contract is not possible in sufficient time to meet the requirement. However, a letter contract should be as complete and definite as feasible under the circumstances.
>
> . . . .
>
> (d) The maximum liability of the Government inserted in the clause at 52.216-24, Limitation of Government Liability, shall be the estimated amount necessary to cover the contractor's requirements for funds before definitization. However, it shall not exceed 50 percent of the estimated cost of the definitive contract unless approved in advance by the official that authorized the letter contract.

The FAR envisions a process by which the contractor receives a sum of money that can carry the contractor through definitization, at which time additional funds would become

available based on that definitization. The advanced money cannot exceed half of the projected total cost of the definitive contract. A letter contract containing FAR § 52.216-24 and advancing $2 million, therefore, accepts the possibility of, and may even require, a final definitive contract in excess of $4 million.

Defendant asserts that plaintiff is entitled to no more than the $2 million already paid to GDS for ECP1. First, defendant argues that the facial limitation, the NTE amount, restricts GDS's entitlement to $2 million. Second, defendant contends that GDS knew that it was not receiving incremental funds because of its Corporate Work Authorization dated September 19, 1989, which indicates "N/A" for incremental funding. This latter argument is unpersuasive. The Corporate Work Authorization indicates "N/A" at the end of a line that reads, "INCREMENTAL FUNDING LIMIT THRU." This reflects that the N/A applies to timing for use of the incremental funding, not whether the funding itself was actually incremental. Mr. Tomasulo and Mr. Bonner testified to as much.

Militating against defendant's arguments is the language of Modification P00011, which indicates that the money advanced is projected to be less than half of the total amount needed for the contract modification. Even if the Modification were ambiguous, applying the general rule of *contra proferentem*, its terms would be construed against the drafter. See Metric Constructors, Inc. v. NASA, 169 F.3d 747, 751 (Fed. Cir. 1999). The court sees no reason to give the modification a reading other than that provided by its plain meaning. 14/ The Marine Corps's unilateral definitization of the contract at $2 million was in error. Defendant is liable to plaintiff for the failure properly to definitize Modification P00011.

III. Constructive changes

For many of GDS's shortcomings in performance on the contract, plaintiff points to government changes to either contract requirements or GDS's planned performance. Plaintiff cast JINTACCS/MTS impossibility as the core government-caused change that increased the cost of performance beyond that set in the contract. In addition to the JINTACCS/MTS impossibility issue, plaintiff seeks to demonstrate liability for changes regarding 1) redocumentation of NDI software, 2) retesting of NDI software, 3) software design changes through CDRL reviews, 4) changes to ATO software, 5) TADIL changes, 6) changes directed through Action Items, 7) extra CDRL revisions, 8) defective reliability

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14/ Based on the foregoing, the court need not consider plaintiff's other arguments -- post-execution conduct, mutual assent, mutual mistake, and unilateral mistake -- that may support a finding that the NTE was an interim amount.

requirements, and 9) MIL-Q-9858A conflicts. Defendant offers manifold theories to deny plaintiff recovery on these changes.

As a threshold matter, to succeed on a constructive change claim, a contractor must demonstrate that it notified the Government that it perceived a given order as a change of the contract's terms and that the person who ordered the change possessed the requisite authority. As a substantive matter, the contractor also must prove that the putative change is actually a change of the terms of the agreement and not merely a direction that a given deliverable fails to satisfy the requirement set forth in the performance specification.

Section I of the contract incorporates the Notification of Changes Clause, FAR § 52.243-7 (Apr. 1984). Within 10 days of any government action that GDS considered to be a contract change, GDS was required to provide written notice to the contracting officer of

> (1) The date, nature, and circumstances of the conduct regarded as a change;
>
> (2) The name, function, and activity of each Government individual and Contractor official or employee involved in or knowledgeable about such conduct;
>
> (3) The identification of any documents and the substance of any oral communication involved in such conduct;
>
> (4) In the instance of alleged acceleration of scheduled performance or delivery, the basis upon which it arose;
>
> (5) The particular elements of contract performance for which the Contractor may seek an equitable adjustment under this clause, including --
>
> (i) What contract line items have been or many be affected by the alleged change;
>
> (ii) What labor or materials or both have been or may be added, deleted, or wasted by the alleged change;
>
> (iii) To the extent practicable, what delay and disruption in the manner and sequence of performance and effect on continued performance have been or may be caused by the alleged change;
>
> (iv) What adjustments to contract price, delivery schedule, and other provisions affected by the alleged change are estimated; and
>
> (6) The Contractor's estimate of the time by which the Government must respond to the Contractor's notice to minimize cost, delay or disruption of performance.

FAR § 52.243-7(b). Although defendant argues for a strict application of the notice requirement, courts have been willing to excuse the failure to give notice under such a

provision. See, e.g., Hoel-Steffen Constr. Co. v. United States, 197 Ct. Cl. 561, 573, 456 F.2d 760, 767 (1972); Mega Constr., 29 Fed. Cl. at 444. "The case law makes clear that while two distinct lines of authority exist, there is but one overriding legal principle: Written notice as to constructive changes must be supplied by the contractor before such time that the Government would suffer if not apprised of the facts." Calfon Constr. Inc. v. United States, 18 Cl. Ct. 426, 438 (1989), aff'd, 923 F.2d 872 (Fed. Cir. 1990). "In some instances immediate notice from the contractor is of minimal benefit, and the Government suffers no prejudice from not having had written notice at the time the constructive change occurs." Id. "On other facts lack of immediate notice seriously can prejudice government interests." Id. at 439.

A contractor must demonstrate that the work that was beyond the scope of the contract "was not volunteered and was ordered by a government officer having the requisite authority." Barrow Utils. & Elec. Coop., Inc. v. United States, 20 Cl. Ct. 113, 120 (1990) (citing Calfon Constr., 18 Cl. Ct. at 434). The Government is only liable for changes ordered by officials possessing actual authority. "[A] person with no actual authority may not gain actual authority through the court-made rule of implied actual authority." California Sand & Gravel, Inc. v. United States, 22 Cl. Ct. 19, 27 (1990), aff'd, 937 F.2d 624 (Fed. Cir. 1991). However, "in some circumstances, a person with some limited actual authority impliedly may have broader authority." Id. The Federal Circuit has held such implied actual authority may arise when such authority is an "'integral part of the duties assigned to a [g]overnment employee.'" H. Landau & Co. v. United States, 886 F.2d 322, 324 (Fed. Cir. 1989) (quoting J. Cibinic & R. Nash, Formation of Government Contracts 43 (1982)). In California Sand & Gravel, the court held that "modifying a contract in no way can be considered an integral part of the duty of reviewing contractor compliance." 22 Cl. Ct. at 27. Further, implied actual authority may not inhere in a government employee when regulations preclude that employee from exercising contracting authority. See Roy v. United States, 38 Fed. Cl. 184, 189-91 (discussing Cruz-Pagan v. United States, 35 Fed. Cl. 59 (1996)), dismissed by 124 F.3d 224 (Fed. Cir. 1997). Government program managers are precluded from directing additional work.

> (a) Only contracting officers acting within the scope of their authority are empowered to execute contract modifications on behalf of the Government. Other Government personnel shall not --
>
> (1) Execute contract modifications;
>
> (2) Act in such a manner as to cause the contractor to believe that they have authority to bind the Government; or
>
> (3) Direct or encourage the contractor to perform work that should be the subject of a contract modification.

FAR § 43.102 (1988).

Before examining plaintiff's individual constructive change claims, the court considers defendant's blanket challenges to plaintiff's claims. First, defendant contends that plaintiff failed to notify the contracting officer of alleged changes. Second, defendant asserts that those persons who were alleged to have directed changes -- Lt. Col. Ware and members of the FMF -- did not possess the requisite authority.

1. Notice

GDS, a sophisticated government contractor, was well aware of its contractual obligation to provide notice of changes to the contracting officer. Ray Helinski, a contract administrator with GDS, notified Messrs. Glinka, Bonner, and LaWare, GDS's Business Manager, Engineering Manager, and Vice President of Technical Operations, respectively, of the "obligat[ion]" to put the Government on notice of constructive changes. In a letter dated February 15, 1989, Mr. Helinski indicated that GDS should consider giving notice for the SRS issue. Lt. Col. Ware in person and in numerous letters attached to CDRL comments also indicated that GDS should provide notice to the contracting officer in the event that GDS perceived a change in the contract. Nevertheless, defendant's argument that the lack of formal notice for each alleged change prevents recovery on each change claim is unpersuasive. Hoel-Steffen cautions courts not to apply notice provisions "too technically and illiberally," especially when the Government is charged with notice. 197 Ct. Cl. at 573, 456 F.2d at 768. Courts look to the amount of prejudice that failure to follow the procedure has inflicted upon the Government. As was noted in Calfon Construction, the two distinct lines of cases are harmonized only by considering the amount of prejudice suffered by the Government. See 18 Cl. Ct. at 438-39. The prejudice inquiry requires an individualized, factual inquiry that is not best disposed of through the omnibus argument advanced by defendant. The court considers the prejudice caused by the failure to give formal notice in the discussion of each of the asserted constructive changes.

2. Authority

When Lt. Col. Ware joined SPAWAR and the ATACC program, Col. Simpleman instructed him not to change the ATACC contract or specification. From testimony and exhibits, it appears that Lt. Col. Ware attempted to alert others of his lack of authority. Lt. Col. Ware, who had a poor recollection of much of his activities as Program Manager, suffered no lapse of memory when he testified that he never represented that he had authority to change the contract. He thought he was very clear at meetings that he did not have authority. He recalled that, at the commencement of meetings, he would state that he lacked authority to change the contract. Lt. Col. Ware would announce that, if GDS perceived that

he directed a change, it should contact the contracting officer. Maj. Dunn testified that Lt. Col. Ware never represented that he possessed the authority to change the contract. Mr. Matusic's testimony was substantially similar to Lt. Col. Ware, *i.e.*, that Lt. Col. Ware began every formal meeting with a routine speech about how only the contracting officer could change the contract. Mr. Bonner testified that Lt. Col. Ware always announced at meetings that whatever occurred would not change the contract. Mr. Bonner, GDS's Engineering Manager, further testified that Lt. Col. Ware may have told GDS to contact the contracting officer about putative changes. Numerous letters entered into evidence indicated that nothing represented in the letters should be construed as a change to the contract or the specification and that, if GDS were to believe otherwise, it should contact the contracting officer.

As the Program Manager, Lt. Col. Ware did not have contract authority. According to Maj. Dunn, Lt. Col. Ware's authority was operational, that is, the "how" and not the "what" of performance. Lt. Col. Ware had a similar view, and Contracting Officer DiMaio believed that responsibility for the budget rested with Lt. Col. Ware.

Lt. Col. Ware provided the contracting officer technical advice as to the specification requirements, but he was not the contracting officer's technical representative (the "COTR"). No COTR was appointed by the contracting office, and GDS took its technical issues to Lt. Col. Ware.

From the perspective of the two contracting officers, Lt. Col. Ware's responsibilities were to review technical changes and decide whether they met the Marine Corps's requirements from a technical perspective. Contracting Officers Thornewell and DiMaio believed that Lt. Col. Ware, as Program Manager, had the responsibility of managing the day-to-day technical side of the ATACC project. Ms. DiMaio described him as the head of the ATACC program for all practical purposes. Both relied upon him for technical matters. He advised Ms. Thornewell whether submissions met the requirements. Ms. Thornewell always followed Lt. Col. Ware's advice. Ms. DiMaio could not recall declining a request of Lt. Col. Ware. Both Ms. Thornewell and Ms. DiMaio relied upon him to review C/SSRs and other scheduling issues.

Ms. Thornewell relied upon Lt. Col. Ware to resolve conflicts within the specification, so long as he did not effect a change to the contract specification. If the resolution resulted in a change in the specification, the matter had to go through Ms. Thornewell's office. If GDS took the position that it met a specification and Lt. Col. Ware thought otherwise, she would defer to Lt. Col. Ware. If GDS were to raise an issue with her, she would resolve it among Lt. Col. Ware, the legal department of MARCORSYSCOM, and herself.

Although Lt. Col. Ware provided technical input, the evidence does not support a finding that he was responsible for approving changes, nor that he exercised approval authority despite his limited mandate, save for a few isolated incidents. In an October 25, 1990 letter, Lt. Col. Ware, although he did not recall it, indicated to GDS that a "proposed specification change" was "acceptable." The letter then requested that GDS submit an ECP to the Government. His office routinely reviewed technical issues and provided input. If acceptable to the PMO, the contracting officer would routinely approve.

According to Ms. Thornewell, Lt. Col. Ware could not grant schedule relief without obtaining consideration. He could grant informal relief as to a specific task, but not as to final delivery schedule. However, on at least one occasion, in a September 25, 1989 memorandum from Capt. Iaquinto in response to a September 21, 1989 letter from GDS, Lt. Col. Ware did grant relief from a C/SSR. Ms. Thornewell testified that she had not seen the grant of relief in this memorandum.

In a January 6, 1993 letter to Ms. DiMaio, GDS indicated that it was "fully aware that the Contracting Officer is responsible and the only authority to direct the performance of additional out of scope work," and that it "did in fact proceed at [its own] risk" when performing out-of-scope work without contracting officer approval. Ms. DiMaio had registered her displeasure with GDS when it told her that Lt. Col. Ware authorized certain changes. Two or three times Ms. DiMaio registered her displeasure, and according to Mr. Glinka, GDS knew that it accepted the risk for some changes. On cross-examination Mr. Glinka testified:

> Q: Now, this letter of yours from January of '93 appears to refer to some software changes. Looking at the letter, do you have a general recollection of what this is all about?
>
> A: Yes. The second paragraph on the first page says, "GDS and the government were in the final stages of DT&E when the need for the software change was discovered." And they were -- the system was out at site. DT&E is developmental test and evaluation.
>
> And I got the phone call that, "There is a problem out here. We need to fix this. You know, the government is with us." You know, and on and on and on. I took the risk myself. And I told them, "All right, fix it", because we needed to get out of DT&E. "Fix it and, you know, I will talk to [Ms. DiMaio]. Is Jim Ware there with you?" "Yes." "All right. Everything is fine out there?" "Yes." "Okay, fine. Fix it", which they did.

And then I notified Cheryl who was upset about it. And this is my response back to her about that issue.

Q: Okay. And just to finish the -- not finish, but the third sentence of the first paragraph says, "As you also point out, authorization was not given by you. And, therefore, GDS did, in fact, proceed at risk."

A: Yes.

Q: And that is your understanding --

A: Correct.

Q: I'm sorry. I've just got to finish my sentence. That is your understanding of what you just described?

A Yes. And to follow if I may, if Cheryl came back and said, "No, I'm not paying you for it", I would have said, "Okay, fine." I mean, I normally did this. But I believe as it turns out, we did negotiate payment.

Unlike Ms. Thornewell, Ms. DiMaio had concerns about whether Lt. Col. Ware was keeping her fully informed. Ms. DiMaio did ratify at least one unauthorized commitment made by Lt. Col. Ware. The "Request for Authority to Ratify and Unauthorized Commitment ATACC Contract (N00039-89-C-0134)," dated August 3, 1993, seeks permission to ratify some mission support upgrades that Lt. Col. Ware directed before he left the ATACC project. GDS wanted these upgrades covered by the contract, and Ms. DiMaio obliged. She requested a cost proposal from GDS. The August 3, 1993 Request for Authority is the paperwork that authorized Modification P00076. On August 23, 1993, Maj. Gen. James A. Brabham, Jr., signed "Determination and Findings" dated August 2, 1993. This document was triggered by a memorandum titled "Statement of Unauthorized Commitment" by Roger L. Lively, ATACC Project Officer. When reviewing paperwork for trial preparation, Ms. DiMaio identified another possible example of ratifying an unauthorized commitment. According to Ms. DiMaio, she only worked on these two unauthorized commitments. No other unauthorized commitments were brought to her attention by GDS. She testified that if they were to have been brought to her attention, she would have followed the FAR process for ratification.

Although he lacked formal contract authority, *i.e.*, was not a contracting officer or a delegee thereof, Lt. Col. Ware possessed a great deal of responsibility with regard to GDS's satisfactory performance of the ATACC contract. He oversaw all the technical aspects of

GDS's performance. Two different contracting officers relied upon him completely for determinations as to whether GDS was meeting the technical requirements of the contract.15/

On at least one occasion, the actual personnel from the FMF who would be using the ATACC traveled to GDS to test or to train on the ATACC. These personnel provided some negative feedback to GDS about the ATACC's ATO generation. After receiving this feedback, GDS undertook to revamp the ATO generation software. Mr. Glinka testified that the users knew what they wanted the system to do, and GDS made changes accordingly.

Plaintiff has failed to demonstrate that the members of the FMF who tested and provided feedback about the ATACC and its ATO message generation possessed the requisite authority for their comments to be considered the basis for constructive changes. They possessed no actual authority. No implied actual authority could be found by the court, because modifying the ATACC contract could not be considered, under almost any scenario, as an integral part of these Marines' duties. Their duties included the operation of TACCs, the predecessor to the ATACC. Testing the ATACC was not integral to their command and control obligations as "fraggers," those field personnel in the TACC who generated ATOs.

A further threshold matter is the baseline by which to measure the alleged changes. Plaintiff argues that GDS's pre-contract interpretation of the specification and ATACC SOW, as evidenced in its proposal, BAFO, pre-award communications with the Government, pre-award demonstrations, and immediately post-award communications with the Government constitute the baseline by which to judge whether constructive changes were ordered. Defendant relies upon the elegantly simple argument that GDS neither incorporated its pre-award communications into the contract nor took exceptions to the contract. Although the court has excluded GDS's pre-contract communications related to ECP1 as an evidentiary matter, see Order filed Nov. 8, 1999, at 1-2, the court has not considered the substantive weight of these communications with respect to constructive changes.

Plaintiff predominantly relies upon the well-settled doctrine that when a government specification does not require a certain method of performance, the contractor is entitled to

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15/ Maj. Bonsignore testified that he never directed GDS how to perform its work while he was Program Manager; however, he was concerned that others prior to him had directed GDS. He thought that Capt. Dan Ellrick and Lt. Col. Ware had given GDS constructive changes that were not approved by a contracting officer. He did not recall specific examples. He never raised this concern with GDS or mentioned it to his Marine Corps superiors.

perform by its chosen manner or method. See North Star Alaska Housing Corp. v. United States, 30 Fed. Cl. 259, 285 (1993).

> "[W]hen a contract prescribes the desired end but not the means of accomplishing that end, it is within the contractor's discretion to select the method by which the contract will be performed. A Government order rejecting the proposed method and requiring the contractor to perform in some other specified manner denies the contractor the opportunity to exercise a valid option as to the method of performance and changes the contract, justifying an equitable adjustment for additional costs incurred thereby."

Id. (quoting Appeal of John Murphy Constr. Co., AGBCA 418, 79-1 BCA 13836 (1979)). Plaintiff further argues that when a party to a contract fails to object to the other party's pre-contract interpretation, that party is bound by the latter's interpretation. For this proposition plaintiff relies primarily upon M.A. Mortenson Co. v. United States, 29 Fed. Cl. 82, 96-97 (1993); E.I. Du Pont De Nemours & Co. v. United States, 24 Cl. Ct. 635, 640 (1991), aff'd, 980 F.2d 1440 (Fed. Cir. 1992); Big Chief Drilling Co. v. United States, 15 Cl. Ct. 295, 301 (1988); and Cresswell v. United States, 146 Ct. Cl. 119, 127, 173 F. Supp. 805, 811 (1959). Finally, plaintiff, citing Omni Corp. v. United States, 41 Fed. Cl. 585, 593 (1998), and Gorn Corp. v. United States, 191 Ct. Cl. 560, 566, 424 F.2d 588, 592 (1970), asserts that even when the Government accepts a proposal that does not comply with the specifications, the Government may not later require the contractor to perform to a standard different than that proposed.

Although defendant does not challenge plaintiff's first proposition, it strikes at the heart of plaintiff's latter two positions. Contrary to plaintiff's reading, in Omni Corp. the court rejected the Government's argument that the contractor was required to perform to a standard in the contractor's proposal, rather than a lower standard set forth in the contract itself. See 41 Fed. Cl. at 594-95; see also Design & Prod., Inc. v. United States, 18 Cl. Ct. 168, 198-200 (1989). In addition, plaintiff's reliance on M.A. Mortenson Co., Big Chief Drilling, and Gorn is misplaced. These cases deal with pre-contract interpretations in situations of contract ambiguity. Although plaintiff alleges ambiguity with regard to some of the changes, a blanket application of the law from ambiguity cases to a constructive change case is unwarranted. Further, even disregarding that M.A. Mortenson Co., Big Chief Drilling, and Gorn appear to be focused on ambiguity, these cases, as well as E.I. Du Pont and Cresswell, can be distinguished in that they address the meaning of words in contracts and not the proposed manner of performance of a specification. The difference is significant. To render a valid analogy, plaintiff would be seeking to introduce pre-contract communications that inform the meaning of the specification, not pre-contract communications that identify how GDS intended to satisfy that meaning.

The ATACC specification is indisputably a performance specification. GDS was entitled to complete the contract using whatever manner or method of performance it wished, so long as the various intermediate deliverables and the finished product satisfied the criteria set forth in the specification. However, disagreements over whether GDS satisfied the criteria of the performance specification, and further direction to work on those non-conforming elements, do not necessarily amount to constructive changes. Only when GDS performed to the specification and later was instructed to amend its approach would a constructive change occur.

GDS, in its pre-award communications, signified one possible method of performance. Plaintiff would like to graft its constructive change claims on these pre-award communications because it asserts that such communications demonstrated "its interpretation and intended method of performing the Government's design and performance criteria." Plf's Br. filed Dec. 2, 1999, at 67. This argument is factually flawed and legally unpersuasive. First, as a factual matter, GDS was aware that some of its pre-award communications were not within the requirements of the specification. For example, Mr. McLean developed the ATACC demonstration using Fortran, a non-conforming code language. It is incongruous for plaintiff now to argue that its demonstration should be the baseline by which to judge constructive changes, which would render GDS eligible to receive additional compensation for programming in Ada rather than Fortran, even though the contract required Ada.

In addition, GDS personnel knew -- indeed, expected -- that their proposed performance was not the baseline by which to judge their actual performance. Mr. Bonner, GDS's Engineering Manager, testified that the SRR's purpose was to assure each party's understanding and to make needed adjustments. Such an understanding of the SRR is incompatible with the position that pre-contract interpretations demarcate the method of performance. Mr. Glinka, Business Manager, testified that when speaking of contract performance the critical documents were the contract, the SOW, and the specification and any attachments thereto. If the Government were to request a change from GDS's proposal, a change would not result because the proposal was not incorporated into the contract. Anything in the contract documents to which GDS did not take exception was a requirement of the contract, according to Mr. Glinka.

As a legal matter, defendant's position on the case law on pre-contract communications and constructive changes is more persuasive. When a contractor does not to incorporate any pre-contract communications into the contract and the performance specification, the contractor has not indicated its method of performance. The proposed method that the Government found to be technically superior to that of other offerors no

longer controls, and the contractor has agreed to perform to the specification without exception.

GDS's communications about its potential method of performance do not operate as the baseline by which to identify constructive changes. The contract, the specification, and the SOW establish the performance baseline. A constructive change could have arisen, then, in one of two scenarios: First, authorized government personnel directed GDS to perform to some criterion beyond that set forth, or in addition to those criteria set forth in the contract documents; second, GDS performed to a criterion or some criteria of the contract documents and authorized government personnel directed GDS to perform using some other manner or method.

3. Redocumentation of NDI software

Both the contract and the SOW incorporate DoD-STD-2167A by reference. 16/ 2167A describes software documentation requirements. Paragraph 3.22 defines non-developmental software ("NDS") as "[d]eliverable software that is not developed under the contract but is provided by the contractor, the Government, or a third party." For the full documentation requirement, which both parties concede is contained in 2167A, they point to paragraph 4.2.4: "The contractor shall consider incorporating [NDS] into the deliverable software. The contractor shall document plans for using NDS. NDS may be incorporated by the contractor without contracting agency approval only if the NDS is fully documented in accordance with the requirements of this standard."

In both its proposal and responses to questions about its proposal, GDS indicated that it would not provide full 2167A documentation -- that is, that it would tailor its approach to 2167A. In its proposal GDS stated that it would supply only existing documentation for NDI that conformed to less rigorous military standards, MIL-STD-7935 and MIL-STD-1679. In its May 2, 1988 "Questions/Responses," GDS responded to Question 59:

16/ Although 2167A is incorporated into the contract, the Government initially planned on using DoD-STD-2167 ("2167"). 2167, which, according to Maj. Dunn, permitted the use of extant documentation to the greatest extent possible, was amended, thereby creating 2167A. Documentation requirements of 2167A ultimately were what the parties agreed to follow. Messrs. Cotellessa and Bonner agreed with GDS's assessment in its May 2, 1988 answers to questions that the change from 2167 to 2167A would not significantly impact GDS's documentation approach. Mr. Cotellessa testified that the change caused a slight difference in the CDRLs, a shift in the software requirements, and a corresponding increase in emphasis on testing.

> For all NDI software, [GDS] will follow the DOD-STD-2167 documentation structure. . . .
>
> . . . .
>
> Therefore, the NDI documentation updates will maintain a true description of the NDI portion of the ATACC system. They will be written using DOD-STD-2167 documentation procedures. This approach will result in a significant cost savings to the Government by not requiring entirely new documentation.

According to Mr. Cotellessa, GDS based its labor estimates on its tailored approach of adding change pages for previously documented NDI software that GDS modified for the ATACC program.

During performance GDS provided some NDI software to the Navy without documentation. The Navy accepted some of this NDI software without the documentation required by 2167A, but did require full 2167A documentation of other NDI software.

GDS notified the Government during performance, in particular in its SDP and possibly during the SRR, according to Mr. Glinka, that it did not intend to document unmodified NDI. After a series of demands by the Government that GDS document unmodified NDI, GDS sent a September 12, 1990 letter by Mr. Hanlon, GDS's Senior Contracts Administrator, to Lt. Col. Ware. The letter appears to signal GDS's capitulation on the issue, although Mr. McLean testified that GDS took exception to the Government's directive.

Plaintiff relies upon the following language of paragraph 4.2.4 of 2167A: "NDS may be incorporated by the contractor *without contracting agency approval* only if the NDS is fully documented in accordance with the requirements of this standard." (Emphasis added.) Reading this language to mean that GDS need not document NDS is not reading it plainly. This portion of 2167A expressly deals with the incorporation of NDS, not the documentation of NDS. This provision permits a contractor to use NDS without approval when that NDS is fully documented. It does not mean that a contractor may use NDS that is not fully documented. Plaintiff pointed to nothing else in 2167A that allowed it to tailor its approach to documentation, so, the court assumes that, because plaintiff is presumed to put its best case forward such permission has not been granted elsewhere in 2167A.

Although 2167A may have had shortcomings, as testified to by the IV&V contractor's Mr. Fravel, and may have seemed incongruous with the emphasis on NDI software, the

contract documents clearly called out 2167A as the documentation standard, and GDS, according to its own Mr. Glinka, was obligated to follow 2167A. Plaintiff took no exception to this standard. That the Government required compliance with 2167A during performance of the ATACC contract does not amount to a constructive change, because plaintiff was unable to satisfy the substantive requirement that the government-directed action was actually a change from that which the contract required.

4. Retesting of NDI software

Plaintiff contends that GDS was directed to perform testing of NDI software in excess of that called for in the contract documents. GDS had no plan to unit test NDI software that it did not modify; it intended to test DI and modified NDI. Defendant appears to agree with this position in its pretrial brief: "[T]he ATACC specification required full 2167A testing of all such 'modified' NDI software." Def's Br. filed Dec. 13, 1999, at 57 n.24. The inquiry, then, turns on whether that which GDS was asked to test was modified NDI or unmodified NDI.

The ATACC SOW discusses testing of NDI software in two different provisions. In section 3.3.3 titled "Testing," the SOW indicates that "[f]or CSCIs developed in the prototype phase and modified during this phase, the contractor shall perform testing in accordance with approved, revised test plans. The contractor shall comply with the contractual requirements of section 3.2.4.2.3 of this SOW for new CSCIs and modified, previously developed CSCIs." In section 3.3.3.2 titled "Unit, CSC and CSCI Informal Testing," the SOW directs: "The contractor shall continue to comply with the contractual requirements of section 3.2.4.2.3.2 of this SOW for newly developed code and for modified, previously developed code." In section 3.2.4.2.3.2 titled "Unit, CSC and CSCI Informal Testing," the SOW requires:

> 3.2.4.2.3.2.1 Unit Testing. The contractor shall prepare for, perform and document computer software unit testing in accordance with paragraph 4.1.1, 5.4.2.5, 5.4.4 and section 5.5 of DOD-STD-2167A. The contractor's testing activities shall include stress testing the software to the limits of its specified requirements and its design, and beyond in order to endure that degradation at the point of saturation is not catastrophic.
>
> 3.2.4.2.3.2.2 Computer Software Component (CSC) Integration and Testing. The contractor shall prepare for, conduct and document computer software component integration and testing in accordance with paragraph 4.1.1, 5.3.2.4, 5.4.2.4, 5.4.4, 5.5.2.4, 5.5.4, section 5.6, and figure 9 of DOD-STD-2167A. The contractor's testing activities shall include stress testing the

software to the limits of its specified requirements and its design, and beyond in order to endure that degradation at the point of saturation is not catastrophic.

The ATACC specification requires software testing, as well. For software CSCs and CSCIs, "[t]he testing of software shall be in accordance with DOD-STD-2167A and the Statement of Work." Paragraph 4.4 of the ATACC specification explains: "Any modified or developed item of equipment or software shall be tested to ensure compliance with the requirements of Section 3 of this specification. Testing shall satisfy, as a minimum, paragraphs 3.2.4, 3.2.6, and all subparagraphs of 3.3." The specific sections identified in paragraph 4.4 deal with hardware and other testing and bear only a tangential relation to software.

The specification and SOW delineate testing for DI and modified NDI. As demonstrated graphically in Figure 4.1 of the specification, NDI was not subject to "Formal Test with Test Plan and Procedures." Any government-directed effort beyond testing of DI and modified NDI would be a constructive change for which the Government would bear liability. 17/

GDS and the Government consistently disagreed about what was to be unit tested. GDS took the position that only DI and modified NDI needed to be unit tested. The Government thought that all software needed to be unit tested. GDS eventually capitulated and tested unmodified NDI.

Plaintiff has demonstrated that the Government directed a change to the testing requirements of the contract. This change constitutes a constructive change for which the Government is liable.

5. Software design changes through CDRL reviews

Plaintiff asserts, in sweeping language, that the Government directed software design changes through the manifold CRDL reviews.

The ATACC contract documents required GDS to generate software requirements specifications ("SRSs") for each CSCI of the ATACC -- ATO generation, decision support, non-TADIL communications, bit-message processing, character-message processing, systems

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17/ Any seeming incongruity between the specification and the SOW would be resolved by the order of precedence clause. This clause gives precedence to the specification over the SOW.

communications, and TADIL communications. An SRS is the definition and specification of the approach to defining a CSCI. Under Mr. McLean's supervision, GDS developed SRSs for each CSCI except the commercial NDI CSCI.

Mr McLean testified that comments to SRSs resulted in many different types of changes: Functionality changed because of increased automation support; detail within subsequent SRSs increased; and additional documentation and appendices were required. GDS took exception to many of the CDRL comments. In its standard cover letter to CDRL comments, for example, the November 15, 1989 letter for the ATO CDRL, the Government required integration of the comments into the next CDRL revision, but also indicated that the comments were not changes and that, if it believed otherwise, GDS should contact the contracting officer. For a number of changes, GDS protested incorporation. Some of the very same comments to which GDS had objected and excepted reappeared in later rounds of comments. GDS did not refuse to incorporate the comments, *i.e.*, stop the program, because no further activity could occur on the ATACC program without finalized SRSs. So, GDS made some concessions.

Bar none, the CDRL most discussed by plaintiff was for the ATO CSCI. According to Mr. Matusic, the Government never told GDS how to generate an ATO. He was of the opinion that GDS decided to put something in place and see how the Government responded. By the comments on the CDRLs the Government had concerns about whether GDS's ATO CDRL met the specification standard. Comments were voluminous.

Mr. McLean traced through a number of these comments, a sample of which are addressed by the court. Comment 92 in the November 15, 1989 Review of CDRL D005 addressed the absence of wind velocity and direction from the algorithm for calculating fuel consumption. The comment, which had not appeared in the prior round of comments on this CDRL, indicated that these items needed to be included in the ATO SRS. Comments 89 and 91 request that the fuel reserve level and the mission altitude, respectively, be included in the fuel consumption algorithm. GDS contended that these elements were not part of the specification and took exception. Comment 65 indicated a desire for a restructured document along the lines of "tradition[al] manual planning procedures."

On cross-examination, Mr. McLean conceded that certain elements of the specification could encompass the comments in this CDRL. Altitude, wind velocity and direction, and reserve fuel level may be material factors in fuel consumption. Although section 3.1.6.12.3 of the specification does not call out the nature of fuel consumption, it seems readily apparent that the comments to the CDRL may be an attempt to adjust GDS's efforts to satisfy the specification. As Mr. Bonner testified about the proposal, the first round of CDRLs may have been a starting point from which further changes needed to be made to

satisfy the specification. Mr. McLean testified that above section of the specification could have covered many issues that arose in the CDRL comments.

For the most part, plaintiff's evidence related to constructive changes directed through comments to CDRLs was imprecise. Several of plaintiff's witnesses testified that GDS accepted some of the comments of the Government and took exceptions to others. On later iterations GDS would make some of the changes to the software to which it had earlier taken exception. Without reviewing every CDRL, every version thereof, every comment to every CDRL and version thereof, every response by GDS, and every other related piece of evidence and testimony and comparing putative changes to the contract documents -- a process that the court warned plaintiff that it would not undertake 18/ -- the court is left in no position to assess whether certain comments amounted to changes, whether later acceptance of comments to which there had been prior exception was mere acquiescence and therefore a change or an agreement that the Government's interpretation was correct. Further, at least one witness, Mr. McLean, conceded that some of the items to which GDS took exception, and which now presumably form the basis for plaintiff's constructive change claims, may have been covered by the broad language of the performance specification. No clear picture develops out of the testimony save for the specific issues addressed elsewhere in this opinion. Plaintiff failed to prove liability with sufficient specificity to warrant holding the Government accountable for constructive changes arising from comments to CDRLs.

6. Changes to ATO software

Plaintiff contends that a "Government test team" ordered GDS to modify the ATO MMI. The Government counters this argument by contending that those who directed the changes to the ATO MMI did not possess the requisite authority and that an accord and satisfaction was entered extinguishing any claim of constructive change.

In September 1991 Marine Corps personnel, who would have been the actual operators of the ATACC had it been fielded, attended a training session at GDS's facility. Its purpose was to familiarize these users with the ATACC system so that the Marines could operate it during the FDS that was to occur later in the fall. Marine Corps personnel operated all of the ATACC equipment. These Marines expressed reservations about the ATO generation features of the ATACC. GDS undertook to modify its ATO MMI.

18/ Such an effort would more properly be plaintiff's. In reviewing evidence and making findings, the court cannot "make" plaintiff's case.

At a November 25, 1991 ATACC Program Management Review, Mr. Fritzson, GDS's Software Manager, presented information indicating that GDS "[o]ptimized MMI for Mission Planning" "in Response to User Comments." According to this agenda, Lt. Col. Ware attended the meeting, although it is unclear whether other government personnel were in attendance. Mr. Glinka testified to the presentation of the slides that included the information about the optimized MMI.

GDS sent the prototype to Camp Pendleton for FDS. According to Mr. Matusic, the Marines who tested the ATACC "came back and said this is a piece of crap." As a result of FDS, GDS embarked on its third attempt at ATO generation.

At a January 6, 1992 briefing of Brig. Gen. C. Mutter and her staff, Mr. Jenkins, GDS's Engineering Manager, and Mr. Matusic discussed mission planning. One issue they covered was the "[r]edesign resulting from user feedback during FDS." Mr. Glinka confirmed that GDS briefed the Government about this redesign at this time.

On April 9, 1992, GDS requested a modification for Technical Directive 10 to perform mission support upgrades ("MSUs"). This request resulted from representations that Lt. Col. Ware made before his retirement from the Marine Corps. The cover letter and technical directive, Mr. Matusic stated, were issued for the modification of the mission function through a DSX pull-down menu. Mr. Matusic further testified that Technical Directive 10 was an enhancement of ATO rewrites that had already occurred, and not the totality of ATO rewrites, that is, Technical Directive 10 did not cover the changes directed by the field Marines.

On February 10, 1993, Mr. Lively, ATACC Project Officer, ratified the unauthorized commitment of Lt. Col. Ware for the MSUs. The ratification was for actual incurred costs of $91,525.00, according to Maj. Gen. Brabham's "Determination and Findings" completed on August 23, 1993. On September 21, 1993, Mr. Nyberg of GDS and Contracting Officer DiMaio executed Modification P00076, incorporating the MSUs set forth in Technical Directive 10. Modification P00076 does not contain a reservation clause.

As discussed above, under no theory of implied actual authority would the members of a test team, the actual field Marines who would have operated the ATACC had it been fielded, possess the requisite authority to direct a constructive change. Moreover, the Marines who tested the ATACC during the FDS at Camp Pendleton did not possess the authority to direct a constructive change. Plaintiff failed to demonstrate that anyone other than the field Marines indicated dissatisfaction and suggested changes. Some of these changes may have been the same ones for which Lt. Col. Ware made an unauthorized commitment. Although Lt. Col. Ware may have made unauthorized commitments to one or

more similar changes, he did not purport to authorize all the changes suggested by the field Marines. In any event, his commitment occurred some months later. That GDS briefed the Marine Corps about these proposed modifications of the ATO MMI would only go to the notice element of a constructive change claim, and not to the authority element. Plaintiff therefore has failed to carry its burden with respect to its constructive change claim for the ATO MMI changes it made as a result of the pre-FDS training and the actual FDS.

Even if the field Marines possessed the authority to direct a change, plaintiff is not entitled to recover because an accord and satisfaction extinguished any constructive change claim for the ATO MMI. A claim is barred by the doctrine of accord and satisfaction when four elements are present -- "proper subject matter, competent parties, meeting of the minds . . . and consideration." Mil-Spec Contractors, Inc. v. United States, 835 F.2d 865, 867 (Fed. Cir. 1987). "Generally, an executed bilateral contract modification that contains no reservation of rights constitutes an accord and satisfaction." Valcon II, Inc. v. United States, 26 Cl. Ct. 393, 397 (1992) (citing cases).

The court is not persuaded by Mr. Matusic's testimony on this score. Although he testified that Technical Directive 10 covered only some more recent commitment by Lt. Col. Ware, it clearly references "feedback from the users." All of the subsequent documents that lead up to Modification P00076 reference the Technical Directive. Mr. McLean testified that he supposed that it was true that the changes could be traced to this source. Although a long history weaves from Technical Directive 10 to Modification P00076, a definite linkage of the subject matter is evident. All four elements of accord and satisfaction are present in Modification P00076. On this basis the court determines that, even if GDS were entitled to recover for constructive changes related to the ATO MMI, GDS settled this claim through Modification P00076, an accord and satisfaction.

7. TADIL changes

Joint Chiefs of Staff Publications ("JCS Pubs") detail the elements of joint operations, including communications interoperability. Because the ATACC was planned for service that would involve joint operations, some elements of the specification required specific JCS Pubs. JCS Pub 10, which describes the datalink protocol for TADIL, was called for in paragraph 3.1.5.1.5 of the ATACC specification. It requires:

> ATACC implementation of the M-series S-series and J-Series messages exchanged over TADIL-A, TADIL-B, NATO Link-1 and TADIL-J ([i]f and to the extent this option is exercised), are contained in Table 3-3, Table 3-4 and Table 3-7 respectively. Each ATACC suite shall be capable of forwarding

> information as received from TADIL-A to TADIL-B and from TADIL-B to TADIL-A in accordance with JCS Pub 10 . . . .

Plaintiff charges that two changes occurred with regard to JCS Pub 10: First, plaintiff contends that the Government directed a change from JCS Pub 10 to JCS Pub 6 without compensating GDS for the change; second, plaintiff argues that JCS Pub 10 and the ATACC specification itself do not contain the same directions with regard to what is required for certain messages.

1) JCS Pub 10 and JCS Pub 6

Terrance M. Ware worked as a software engineer on the ATACC program and as GDS's TADIL communications CSCI leader from March 1989 until 1994. Mr. Ware had several technical interchanges with the Government about the JCS Pub 10 issue, including John Reynosio and an unidentified woman, both from MCTSSA. They discussed how the existing system worked and helped him understand TADIL.

JCS Pub 10 was superceded by JCS Pub 6 in late 1989 or early 1990. Mr. Ware was given official direction from the management of GDS to use JCS Pub 6, but was not advised to stop work when GDS learned that JCS Pub 10 had been superceded. It was his understanding that GDS would have received direction from the Government to make this change; however, he provided no direct testimony of any government direction. Mr. McLean, however, pointed to a comment in the March 29, 1990 comments on the TADIL Communications CSCI SRS. Comment 66 indicated that the TADIL Communications CSCI SRS contained several "refer[ences] to JCS Pub 10" that GDS should "[c]orrect to JCS Pub 6-01.1."

As it was classified, GDS was not in possession of JCS Pub 6 when Mr. Ware was told to switch to it. GDS requested a copy in late 1989, or so Mr. Ware believes. At least one Action Item, due on August 11, 1989, requested JCS Pub 6. The minutes of the software PDR reflect another request, AI 900037, with a due date of June 1, 1990. GDS finally received a current version of JCS Pub 6 on October 23, 1990. It took approximately 16 months to receive a current version.

Mr. Ware was of the opinion that if GDS were not to have changed to JCS Pub 6, JTAO certification, which is confirmation of joint interoperability, would not be obtained, because the protocol in JCS Pub 6 was necessary to pass JTAO. If the protocol were not from JCS Pub 6, the ATACC would not be interoperable in the datalink community, *i.e.*, it would not be able to exchange information properly.

Although the court could derive from the record a reasonable rationale for why GDS switched from JCS Pub 10 to JCS Pub 6 without government direction -- for example, the desire to code for JCS Pub 6 with the expectation that the Government would exercise the production option and GDS would be saved from later, more costly re-coding -- the record reflects government direction. This direction to substitute JCS Pub 6 for JCS Pub 10 amounts to a constructive change.

2) JCS Pub 10 and the ATACC specification

Mr. Ware testified to a number of other changes involving TADIL and conflicts between the certification requirements, the specification, and the directions GDS was given with regard to TADIL.

Table 3-3 contains the "implementation of the M-series[,] S-series and J-series messages exchanged over TADIL-A, TADIL-B, NATO Link-1 and TADIL-J." The list of messages in Table 3-3 is a subset of a much larger universe of TADIL messages. For certification, according to Mr. Ware, the ATACC needed to be fully capable of supporting all messages. If GDS were to have followed Table 3-3, the ATACC would not have been certified because Table 3-3 did not match the requirements for what the system must support to be certified. 19/

The minutes of a September 27, 1989 meeting reflect a discussion of Table 3-3 in the specification. Attached to these minutes is a revised version of Table 3-3. The revised version of the Table 3-3, "provided for information only," adds TADIL functionality with regard to forwarding to those specific messages in the original Table 3-3. The minutes reflect government awareness of GDS's need to incorporate more TADIL messages into the ATACC than set forth in the specification.

Messrs. Ware and McLean expounded upon the impacts of the JCS issues. The software had to be revamped because the ATACC was designed to one set of requirements, and those requirements changed. GDS had to retest the software module that it had already coded before the changes because it had to rewrite TADIL code. The changes caused undescribed other collateral impacts on cost and schedule. Mr. Ware testified that the impact

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19/ Even if GDS were to have followed JCS Pub 6, Mr. Ware indicated that he did not believe that the ATACC could be certified. With respect to the M-series messages, conflicts existed between the specification and JCS Pub 6.

would have been enormous if GDS were to have built to JCS Pub 10 and later switched to JCS Pub 6. 20/

Mr. Ware demonstrated that to achieve interoperability certification, GDS was required to add TADIL messages in addition to those in the specification. The additional messages amount to a constructive change. The additions s were government-directed, and the Government was aware of them. On the very limited issue of the revision of Table 3-3, no liability attached because, unlike the TADIL comments which carried a greater indicia of government-direction, the revised Table 3-3 was not a government direction for additional work. Accordingly, defendant is liable for a constructive change with regard to the additional messages that GDS needed to incorporate into the ATACC to achieve certification. 21/

8. Unreasonable use of action items

In its pretrial brief, plaintiff argued that the manner in which the Government used action items ("AIs") amounted to a constructive change. See Plf's Br. filed Dec. 2, 1999, at 73-74 ("[Plaintiff] Is Entitled To An Equitable Adjustment For The Government's Unreasonable Use Of "Action Items" To Resolve Ambiguities Of The Contract Specification.") Defendant counters by arguing that the Government was completely within its rights under the contract to use AIs.

It was undisputed at trial that each party had the right to use AIs to assign the other party questions or issues for resolution. Indeed, Messrs. Bonner and Cotellessa testified that AIs were to be used as the method by which questions and issues would be assigned, tracked, and resolved. GDS kept a log of these AIs. Over the course of performance, some five years, the parties undoubtedly generated many AIs. Trial did not establish the exact number of AIs and to which party they were assigned. Only a glimpse of the universe of AIs was revealed to the court.

20/ The Government issued Interoperability Change Proposals ("ICPs") when it changed the TADIL protocols. GDS did not receive these ICPs. It received a list that would have required programming changes. Mr. Ware did not recollect whether GDS received complete ICPs and implemented them. Adding the ICPs to JCS Pub 6 would have increased the amount of work required to be performed by GDS, although Mr. Ware could not recall if GDS actually did the work.

21/ These changes, though, were for naught because the ATACC did not undergo certification testing.

To the extent that plaintiff's allegations go to the substance of AIs, those alleged constructive changes are discussed elsewhere or were presented in such a manner as to prevent the court from determining whether the AIs actually rise to the level of constructive changes. For example, Mr. McLean testified to a summary exhibit, "Summary of Sample (P-404) Changes and Impacts from Action Items and Vague, Ambiguous Requirements in ELEX-T-620A." He testified that the sampling was representative of what occurred with AIs throughout the ATACC program. He indicated that 18 AI responses were late relative to need or request; that three were late in the program, *i.e.*, the lack of information occurred late in the program; and that 45 responses to AIs led to changes. Of these 45 changes through AIs, for example, eight relate to the TADIL communications issue (A890066 and A900037, for example), three deal with ECP1 changes (A890040, for example), and seven deal with the MTS/JINTACCS issue (A900089 and A900091, for example). All of these issues are addressed substantively elsewhere in this opinion. Of these 45 changes, the court heard no other testimony or received no other evidence on issues such as whether alerts were required for Top Secret messages (A900096), whether a stereographic algorithm was required or included in the specification (A900035), or whether the choice of colors to represent all categories of tracks and other symbology on display screens was dictated by the contract documents (A900050). As is the vulnerability of any summary, detail can be sacrificed. The cost of the lost detail is the court's inability to render findings as to whether various AIs presented in summary form amount to constructive changes.

Plaintiff is not entitled to recover for the unreasonable use of AIs. AIs were one legitimate method of assigning and resolving issues that arose during contract performance. No evidence was offered to indicate that GDS complained about the volume of AIs or otherwise gave notice of a change due to the volume of AIs used during the ATACC program. Their use does not amount to a constructive change. Although excessive use might amount to abuse and a breach of the duty to cooperate, plaintiff neither pleaded nor proved such. The evidence concerning the AIs presented in a summary or cursory fashion does not enable the court to determine whether plaintiff carried its burden to demonstrate that someone with authority directed the change, that the Government had notice of the additional work, and that the change was actually a change. Plaintiff therefore cannot recover for the substantive changes that may have been directed through AIs, unless those AIs were presented more fully and thus are discussed elsewhere in this opinion.

9. Extra CDRL revisions

Plaintiff maintains that the Government directed it to deliver software CDRLs in excess of that provided for in the ATACC contract. Defendant responds that GDS produced the number of CDRL versions that it expected and, in addition, that GDS was responsible for any extra CDRL revisions.

Plaintiff pointed to a document titled "Contract Data Requirements List" as evidence that it was required to furnish only three versions of SRS CDRLs. About this document Mr. Bonner testified:

> A: Yes. This is CDRL list or a contracts requirements list, what documents need to be provided.
>
> Q: Okay. Does the government or GDS originate the CDRLs, that is to say the substance of the CDRLs, the requirements themselves?
>
> A: The government does.

GDS submitted as many as four versions of certain CDRLs. Plaintiff offered no testimony that these CDRLs actually satisfied the requirements of the CDRL standard. The record reflects that GDS took exception to some requests for revisions and agreed to make other revisions. Some testimony reflects that GDS excepted to some revisions, but later made them after the Government reviewed the next iteration of a given CDRL.

Lt. Col. Ware testified that on most occasions he had to ask GDS to implement comments and resubmit the CDRLs because of insufficiencies and inadequacies. His staff checked the CDRLs received against the CDRL standard and found the CDRLs to be incomplete. Mr. Matusic, a consultant to, and later an employee of, GDS, also reviewed the CDRLs. He testified that he had a hard time understanding a number of them because they were in pseudo-code; non-software people had a hard time understanding the SRSs.

Based on the evidence presented, plaintiff has not satisfied its burden with regard to the additional versions of CDRLs. The only baseline by which to judge whether GDS was required to submit three or four versions was the Contract Data Requirements List. The court is unable to assess the significance of this document vis-a-vis the contract documents. Even accepting the testimony that GDS was required to submit excess versions of CDRLs, Lt. Col. Ware and Mr. Matusic each testified to problems related to CDRL submissions. Because the Government is entitled to receive CDRLs that comply with the CDRL standard and because GDS did not demonstrate that its rejected CDRLs met that standard, *i.e.*, that GDS was asked to perform in excess of a standard that it had satisfied, GDS cannot recover costs associated with the CDRL revisions. Even if it were entitled to recovery, plaintiff would not recover damages for the cost of making the physical changes to the CDRLs. Mr. McLean testified that it was possible to look back and collect the costs for the physical changes to the CDRLs that resulted from extra rounds of revisions, but impossible to trace the costs for the functional changes. Because plaintiff chose not to present evidence of these actual, traceable

costs and because the court has rejected the total cost theory and modified total cost theory, see infra at 100-01, plaintiff has failed to prove these damages with sufficient specificity.

10. Defective reliability requirements

On February 4, 2000, the parties entered a stipulation as to the facts regarding plaintiff's claim for defective reliability requirements.

The formula, provided in Appendix D to the ATACC specification, for the calculation of the reliability of the system was mathematically incorrect to a material degree. The formula contains no ambiguity, and the incorrectness is reasonably apparent on the face of the ATACC specification to a reasonable, similarly situated offeror. Prior to contract award, GDS did not inquire of the Government about the erroneous formula.

The Reliability Math Model and the Reliability Predictions Report, GDS's first reliability CDRLs submitted during May 1989, utilized a different, but correct, formula for calculation of reliability. The Government rejected GDS's formula in these first CDRLs. Not until the fourth version of the CDRLs, submitted in November 1991, did the Government agree with GDS's reliability formula. GDS's reliability formula had not changed from the first iteration to the fourth iteration of the CDRLs.

Between May 1989 and November 1991, GDS expended effort to educate and to convince the Government of the correctness of the reliability formula it set forth in its May 1989 CDRL. Drs. Joseph H. Kullback and Stan Siegal undertook this effort for GDS. The cost of the effort amounts to $101,446.00 -- $65,386.00 for Dr. Kullback and $36,060.00 for Dr. Siegal.

As the result of error or delay, GDS expended resources on the reliability formula for the ATACC that it otherwise would not have spent. The Government is liable to GDS for these resources, totaling $101,446.00.

11. MIL-Q-9858A conflict

The ATACC specification called out MIL-Q-9858A ("9858A"), which provides for quality inspection of hardware only. Unlike reliance on brand name or independent laboratory testing, 9858A is the mechanism by which the military assures itself that it is buying quality goods. 9858A requires rigid adherence to quality standards for each individual piece of any given hardware item. Although GDS noted an intent to comply with 9858A in is proposal, it also proposed a tailored approach to 9858A. GDS took no exception to the contract, the SOW, or the specifications. GDS did not incorporate its proposal. With

no exception taken to the contract, the Government demanded compliance with 9858A for NDI hardware.

At the post-award conference in January 1989, the parties discussed two 9858A issues -- Government inspection of the deliverable ATACC prototype 22/ and the application of 9858A to NDI hardware. The 9858A issues were tabled.

On February 8, 1989, Blaine W. Young, Jr., a DCAS Quality Assurance Representative, issued his Contract Data Package Recommendation/Deficiency Report in which he states that 9858A is not applicable to NDI hardware. It reads: "As Indicated By The Contractor At The Post Award Conf., 90% Of The Hardware is to be Commercial Off The Shelf Items. -- Higher level Quality REQ's – 52.246-11 (mil-Q-9858) is Called Out In Contract. This CANNOT BE EXECUTED UNDER These Circumstances. Recommend 52.246-11 BE RESCINDED & 52.246-2 ONLY BE IMPOSED." On March 15, 1989, June E. Biller, a DCAS Quality Assurance Assistant, signed the report to indicate that she had reviewed it. On March 30, 1989, the ATACC administrative contract officer "concur[red] with the above recommendation." The administrative contract officer wrote, "Please advise this office when a Mod will be issued to correct the deficiency." According to Lt. Col. Ware, although the DCAS QAR thought 9858A was not implementable because of NDI, MCTSSA and MCRDAC thought it was implementable.

During July 1989 GDS offered to comply with 9858A for DI and to engage in other quality assurance measures for NDI. According to an August 18, 1989 letter from Mr. Hanlon, GDS's Senior Contracts Administrator, to Contracting Officer Thornewell, DCAS rejected partial application of 9858A, resulting in GDS needing to apply 9858A fully.

Although some government personnel appeared ready to dispatch with the 9858A problems in March 1989, GDS was required to engage in further action on the issue some

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22/ Limited evidence was adduced on this issue at trial -- mainly, it appears, because the 9858A conflicts were resolved before delivery of the ATACC prototype. The conflict over the inspection location for the finished ATACC could be resolved through the Order of Precedence clause of the ATACC contract, which GDS was entitled to rely to clarify an inconsistency in the contract documents. See Hensel Phelps Constr. Co. v. United States, 886 F.2d 1296, 1298-99 (Fed. Cir. 1989). Although 9858A required inspection of the ATACC at the production sight, the Order of Precedence clause would allow GDS to rely upon the contract's requirement that the inspection of the prototype occur upon delivery. Because of the ability to rely upon the Order of Precedence clause, plaintiff failed to prove liability on the first of the two 9858A issues.

five months later. On August 18, 1989, GDS sent a letter to Ms. Thornewell regarding the application of 9858A to NDI hardware. This letter responded to the Government's rejection of GDS's quality program. It asserted that it was impossible to apply 9858A to NDI hardware and that the Government failed to relax a requirement with which it knew GDS could not comply. GDS also reiterated the conflict regarding inspection of the ATACC prototype. The letter requested that the contracting officer act to remedy these two conflicts.

On November 29, 1989, SPAWAR sought a technical proposal for the tailoring of 9858A. The request from Ms. Thornewell also indicated that GDS should "submit [an] offer of consideration to the Government for implementing these changes to the current contract requirements." On January 26, 1990, GDS submitted its "Technical Proposal for Implementing a Tailoring of Quality Program Requirements for the [ATACC]."

On February 23, 1990, Capt. Iaquinto notified GDS that its Quality Assurance Program Plan was not acceptable to DCAS. GDS was directed to revise its generic procedures to make them ATACC-specific.

Although no evidence was introduced that the Government changed its position on 9858A, the parties state that "the Government eventually accepted [GDS's] interpretation," Plf's Br. filed Dec. 2, 1999, at 82, and that "[i]t is undisputed that the Government agreed . . . that MIL-STD-9858A would not apply to commercial items," Def's Br. filed Dec. 13, 1999, at 61. Throughout this process, according to Richard T. Cartwright, Jr., GDS's Shelter Subsystem Manager beginning in May 1989, GDS searched for vendors that met 9858A in their product assembly.

Because the Government is entitled to compliance by a contractor with a contract requirement, plaintiff has not proved a constructive change with regard to 9858A. Certainly, the Government could have waived or modified 9858A, but it was not required to do so. That DCAS was of the view that 9858A could not be implemented further supports the implication that tailoring, which ultimately was accepted, was the better course. However, others in the Government considered 9858A to be capable of implementation, as did GDS to a degree, or else GDS would not have even searched for 9858A-compliant vendors. Accordingly, no compensable change occurred in the contract with regard to 9858A.

IV. Breach of the duty to cooperate

Plaintiff contends that the Government failed to cooperate with GDS, thereby hindering GDS's performance of the ATACC contract. As particular breaches of the Government's duty to cooperate, plaintiff cites 1) IV&V interference with software

development, 2) extra meetings and briefings, 3) late GFI and AI, and 4) failure to manage and control document review.

"It is black letter law that every contract with the government contains an implied obligation that neither party will do anything to prevent, hinder, or delay performance." Sterling Millwrights, Inc. v. United States, 26 Cl. Ct. 49, 67 (1992) (citing Lewis-Nicholson, Inc. v. United States, 213 Ct. Cl. 192, 204, 550 F.2d 26, 32 (1977)); see also C. Sanchez & Son, Inc. v. United States, 6 F.3d 1539, 1542 (Fed. Cir. 1993) (noting that Government must avoid actions that unreasonably delay or hinder contract performance); Malone v. United States, 849 F.2d 1441, 1445 (Fed. Cir.) (ruling that contracting officer breached duty to cooperate because evasiveness caused contractor to perform majority of work to workmanship standard that contracting officer found unacceptable), modified by 857 F.2d 787 (Fed. Cir. 1988); SIPCO Servs. & Marine Inc. v. United States, 41 Fed. Cl. 196, 217 (1998) (holding that excessive supervision or control of contractor could constitute breach of duty to cooperate). The Government has been held to have breached the duty to cooperate when it has failed to timely respond to a contractor's request for information. See Hardie-Tynes Mfg. Co., ASBCA No. 20,582, 76-2 BCA ¶ 11,972, at 57,379 (1976). A failure to provide assistance at the request of a contractor has amounted to a breach of the duty to cooperate. See Hardrives, Inc., IBCA 2319, 94-1 BCA ¶ 26,267, at 130,682 (1994). However, "the Government may, without liability, merely direct the contractor to perform in accordance with the terms of the contract." Lathan Co. v. United States, 20 Cl. Ct. 122, 128 (1990) (citing H.L.C. & Assoc. v. United States, 176 Ct. Cl. 285, 307, 367 F.2d 586, 599 (1966)).

1. IV&V interference with software development

Plaintiff levels three complaints against performance of the IV&V on the ATACC contract: First, Texel, the principal IV&V contractor, through Mr. Fravel, unduly interfered with software programming; second, Texel forced GDS to undertake object-oriented design ("OOD") for the ATACC software; and third, the voluminous and largely disorganized IV&V comments on GDS's submissions amounted to a constructive change.

The ATACC SOW called for at least one IV&V agent for the Government. Section 3.2.4.2.1.1.6 provides:

> The contractor shall interface with the Government-appointed software IV&V agent(s). At a minimum, this interface shall provide for delivery of materials to be evaluated by the software IV&V agent(s), receipt of software IV&V results on those materials, coordination of the status of discrepancies detected by the software IV&V agent(s), and participation in technical interchange

> meetings with the software IV&V agent(s) as directed by the Procuring Agency. In addition, the contractor shall provide administrative and technical support for the software IV&V agent(s).

The SOW's IV&V provision sets a minimum standard for the contractor's interaction with the Government's IV&V contractors. GDS was required to participate in a process of exchanging software materials with the IV&V contractors, coordinating with those contractors when software problems arose, and engaging in technical meetings with IV&V contractors. GDS also was to provide administrative support to the IV&V contractors.

In response to the ATACC SOW, GDS indicated to the Government that it had experience with IV&V contractors on prior government programs. The Test Instrumentation System, for example,

> was subjected to an extremely intensive IV&V program by the Air Force contractor. Under this program, every document and every line of code underwent zealous and aggressive review. As a result of these reviews, the IV&V team generated thousands of Engineering Review Comments (ERC's). These ERC's covered typographical errors, grammar, and sentence structure and addresses [sic] relatively few substantive matters.

Mr. Bonner explained that this aggressive review was a review of how GDS did what it did, not a review of what GDS did. GDS also noted that on another project "[t]he IV&V contractor reviewed on a regular basis, the status of [GDS's] software Unit Development Files," which are programmers' notes about why they coded software in a certain way. When GDS had acted as an "internal" IV&V provider for other Grumman contracts, it "[r]eviewed design specifications vs standards[,] [r]eviewed test plan methodology[,] [r]ecommended library control system procedures and documentation[, and] [r]ecommended test procedure methodology." As an IV&V contractor for other government contractors, GDS did not interfere with contractor performance of software development activities; it never directed software performance, according to Mr. Bonner.

Much testimony was directed to the nature of IV&V work. Mr. Cotellessa testified that in IV&V, verification meant whether the work was performed correctly, and validation meant whether the product was the right product for the customer. Although Mr. Cotellessa conceded that verification and validation were not clearly defined in the ATACC program, he was familiar with the industry standard as of contract award. His experience with IV&V contractors taught Mr. Cotellessa that they assess whether the product is right and whether it is the right product, but normally do not assess how the contractor develops the product, except to the extent of whether "how" is in accordance with how the contractor obligated

itself to perform. Mr. Bonner expected the IV&V contractor to observe; to review reports, documents, and products; to critique GDS's work product; and to report to the customer.

Mr. Fravel understood his role as IV&V contractor to be one of monitoring the development from an independent position. For verification he sought to assure that what had been completed was sufficient for GDS to go to the next phase. For validation his job was to make sure the product was right with regard to the specifications. He testified that the concept of IV&V was evolving at the time of the ATACC program. The Institute of Electrical and Electronics Engineers (the "IEEE") understanding of IV&V provided the baseline from which Mr. Fravel worked. IV&V was changing from product-oriented to process-oriented, and was driven by the Software Engineering Institute's view of process and product.

DoD-STD-2167A, incorporated into the ATACC contract, defines verification and validation. "Verification. The process of evaluating the products of a given software development activity to determine correctness and consistency with respect to the products and standards provided as input to that activity." "Validation. The process of evaluating software to determine compliance with specified requirements."

The Government selected Texel as the lead IV&V contractor for the ATACC program. 23/ This program was Mr. Fravel's and Texel's first time as IV&V for the Government. Mr. Fravel, currently a Lockheed Martin employee, first became involved with the ATACC program in February 1989. Texel itself was involved in the ATACC project earlier because, during the source selection, it produced an Ada test question to assess bidder's knowledge of Ada. In February 1989 Mr. Fravel held a get-acquainted meeting with government and GDS personnel. He scheduled a debriefing for GDS covering the Ada test problem, during which Mr. Fravel and apparently others from Texel told Messrs. McLean and Vincent DeVito of GDS that there were some areas where GDS did not understand the pluses and minuses of Ada. Ada is a strongly "typed" language, *i.e.*, components have to be consistent across programming units. GDS's response was that the source of its deficiencies was the insufficient time allotted to perform the test.

Mr. Fravel took up residence at GDS's ATACC offices. Initially, he was on site a couple of days per week, but later, when GDS moved to new facilities in Springfield, Virginia, he was present full time.

23/ Booz-Allen & Hamilton, and other contractors, performed IV&V work for the Government on the ATACC project.

Mr. Fravel had not written an IV&V plan when he began his work. He later was instructed to generate a plan, so he followed the IEEE standard for IV&V structure, and the content was based on the content in the specification. His draft plan never became finalized, but was commented upon by MCTSSA, MCRDAC, and the PMO. The plan called for "total access to the software engineering process" and computer-based access, near real-time access to facilities. Mr. Fravel pushed for as much access as possible.

As for IV&V, on a day-to-day basis, Mr. Fravel was working on Data Item Descriptions for each document required by the contract; he was reviewing documents and trying to solve problems where possible. He indicated that he would go to government personnel first when a problem was a major issue; otherwise he might go to GDS personnel. As the ATACC program progressed, Texel added more IV&V personnel. Mr. Fravel remained on the ATACC project doing IV&V work until June 1992.

1) Object-oriented design

The level of GDS's familiarity with Ada created a source of tension in the IV&V relationship. After the Ada test question, Mr. Fravel believed that GDS did not understand all of the benefits of Ada, so he undertook to explain its benefits and pitfalls. He also engaged in conversations with GDS personnel about OOD.

Mr. McLean testified that Mr. Fravel insisted that OOD was the only method of performance that was acceptable for use with Ada. GDS resisted the change from structured design to OOD because GDS did not possess a mature Ada toolset and OOD had not been used for a large program. GDS had expressed similar sentiments in its ATACC proposal in answer to a question about OOD, which the ATACC specification did not require. An immature method and an unsupported toolset pose risks in dealing with the inability to complete and to document on time.

According to Mr. McLean, Texel and the Government were pushing OOD. GDS had planned to use some OOD for translation of structured design to the Ada program design language. Texel, however, according to Mr. Cotellessa, insisted on OOD, which was new in 1989 and which he thought was less appropriate for a project at that time.

At trial Mr. Fravel countered Messrs. McLean and Cotellessa's characterization of his role in changing to OOD. He testified that he expressed no preference for the method of software design to GDS. He did indicate that OOD usually worked better with Ada. He mentioned this view, cited some papers, and engaged in a dialogue. He suggested that software engineers would benefit from training. Because Texel was one possible vendor, the Marine Corps said that the proposed training would be a conflict, so Mr. Fravel dropped it.

Mr. Cotellessa disagreed with Mr. Fravel about need to train in OOD. Although he possessed no personal knowledge of any Ada training by GDS personnel, Mr. Cotellessa was of the view that, if one knew how to program, one could easily could learn to program competently in Ada in two weeks.

Before the Preliminary Design Review in May 1990, Mr. Fravel met with the Government and was told to stop discussing Ada and OOD and to work with whatever GDS delivered. Mr. Fravel stopped discussing the OOD issue. He thought this exchange over OOD had no impact at all on GDS.

Before completion of the ATACC, GDS changed from structured analysis to OOD. The effects of this change included a reduction in productivity, the costs associated with a two-week Ada and OOD training course for GDS personnel, the costs of developing a toolset, and the rework of the Software Development Plan. During a January 10, 1990 Program Management Review, GDS reported that it was behind schedule because the lack of methods and tools for thorough documentation.

2) General interference

In broad terms, according to Mr. Bonner, GDS objected to Texel's having and expressing its gratuitous opinions, its insertion of itself into the software-development process, its aggressive -- rather than passive -- role, and its attempts to shape the program and put more staff on it. IV&V access to code was a point of contention. GDS personnel cited IV&V access as causing interference and incorrect judgments because the code that Mr. Fravel and the Texel personnel were reviewing was not a finished product. The problem reached a crescendo in late 1989 or early 1990 and lasted until mid-1990. Mr. McLean initially tried to calm GDS personnel. Eventually, he asked Texel personnel to come to him or go to GDS's quality assurance ("QA") personnel when they had questions or wished to raise concerns about the software. According to Mr. Bonner, Texel told Lt. Col. Ware that GDS needed 10 more people in QA.

GDS, through Mr. McLean, discussed the issue of IV&V interference with the Marine Corps -- represented by Capt. Iaquinto and Lt. Col. Ware. Mr. McLean expressed a desire to reduce the *ad hoc* approach. From this meeting a more formal process arose. GDS was permitted to deny access and to provide Texel with weekly deliveries of magnetic tape that contained the prior week's work. The Marine Corps purchased a Microvax for Texel to review code on the magnetic tapes, which were generated after normal, periodic back ups.

Mr. Fravel took issue with the characterization of his interactions with GDS personnel as interference. He testified that he spoke directly with those people writing code, but that

this was a very small amount of time taken from the code writers. He generally asked permission of the CSCI lead before he would go to programmers, and tried to solve problems informally. If a task leader were to direct him to a programmer, Mr. Fravel would go to a programmer, but otherwise generally would not interfere with programmers.

Lt. Col. Ware and others appeared to confirm Mr. Fravel's assessment. Lt. Col. Ware observed the IV&V contractor's work firsthand. He was very satisfied with Mr. Fravel's work. Other than a complaint about Texel's access to the programming area of the ATACC facility, Lt. Col. Ware did not recall significant or numerous complaints by GDS about Texel's work. When Lt. Col. Ware asked Texel to back off, it complied. Maj. Dunn testified that Texel liked to ask him to ask GDS questions, rather than asking them directly of GDS personnel. While Maj. Bonsignore was in-plant representative, he never received any complaints about IV&V or even hear any secondhand complaints. He recollected that the IV&V team was a good team.

The evidence on this issue was anecdotal and imprecise, and it does not support a finding that Mr. Fravel interfered with or slowed GDS's programming efforts to the extent that plaintiff claims.

3. Voluminous, redundant, and conflicting critiques

GDS asserts that the ATACC contract was constructively changed because of the comments it received from IV&V contractors. These contractors, according to Mr. Bonner, provided stacks of comments by unidentified sources without winnowing unnecessary, redundant, or conflicting comments. In addition to Texel, MCTSSA, Booz-Allen & Hamilton, CRC, and Eagle Technologies also served as support contractors involved in document review. Early on, these entities failed to coordinate their comments, according to Mr. Fravel. After GDS raised the issue, the Government tried to fix the problem, which lasted during the first six months of the program.

The contract documents placed the burden of IV&V coordination and administrative support on GDS. See infra at 89. Although there was a coordination problem that the Government surely could have addressed, and did address, its failure to do so more quickly and more decisively did not amount to a breach of the duty to cooperate.

2. Extra meetings and briefings

Plaintiff charges that the Marine Corps failed to cooperate with GDS because GDS was required "to spend inordinate amounts of time educating Government personnel" about any number of issues and because the Marine Corps forced GDS to engage in a second SRR

after the agenda for the first SRR was approved. Plf's Br. filed Dec. 2, 1999, at 85. Defendant responds that no minimum or maximum number of meetings is set forth in the contract and that the number of meetings was reasonable or the result of GDS's contract performance.

The ATACC SOW addresses reviews, audits, and baselines in section 3.2.4.2.1.4. This provision establishes the requirements for more formalized reviews, but the relevant portion of the SOW does not preclude additional meetings of various types. Although not functioning as the baseline for its performance, GDS's proposal acknowledged that there would be meetings in excess of that set forth in section 3.2.4.2.1.4. GDS's proposal notes: "Meetings, similar to reviews, occur throughout the program. They are generally less formal than reviews."

Before the first SRR, Mr. Bonner discussed his presentation with Maj. Dunn. Maj. Dunn, according to Mr. Bonner, thought it too detailed for a three-day presentation. Mr. Bonner testified that the written agenda was shown to Lt. Col. Ware, and he approved it. Lt. Col. Ware did not recall the agenda's contents, but thought that the depth was insufficient for what was to be covered. GDS preformed a dry run of the SRR, which Maj. Dunn attended. The minutes of the SRR, dated April 18, 1989, reflect that 27 government personnel, 11 persons from government contractors, and 24 GDS personnel were in attendance at the SRR. The contracting officer was not among the attendees.

The first day of the SRR began at 8:00 a.m. All presentations ran smoothly until 11:00 a.m. when Lt. Col. Ware suspended the SRR and the Government went into a private session. Everyone reconvened at 12:30 p.m. Lt. Col. Ware indicated that GDS failed to meet the requirements because of insufficient detail in the presentations. According to Mr. Bonner, termination of the SRR at this point could not have afforded Lt. Col. Ware the opportunity to assess what was to be presented over the remaining scheduled time. It was suggested that the parties meet again the next day when they would review the requirements one by one and discuss GDS's understanding of the requirements and how GDS was going to meet them. This meeting generated a list of action items. The Government was still not satisfied, and the SRR was rescheduled for May.

Mr. Matusic, GDS's former Marine consultant, attended the SRR. Later, Mr. Matusic met with Capt. Iaquinto, Maj. Dunn, and Mr. Bonner. There was serious disagreement between the parties as to the purpose of the SRR. Mr. Matusic testified that preliminary design was the big issue, and that each side had its interpretation of what needed to be discussed at the SRR. Mr. Matusic believes that the SRR was terminated as a power play, a way to get GDS's attention. Capt. Iaquinto explained to GDS why the first SRR was suspended. According to Mr. Bonner, Capt. Iaquinto said that Lt. Col. Ware decided that he was going to terminate the first SRR at 11:00 a.m. to show GDS who was the boss. On this

point Lt. Col. Ware testified that the person from MCRDAC who was responsible for the SRSs complained about the lack of detail in GDS's plan for meeting the specification. Lt. Col. Ware testified that he requested an off-line meeting with GDS, suggested that he was satisfied with the coverage, and asked GDS to continue with the review. He did not recall terminating the meeting. The court finds this testimony of Lt. Col. Ware not credible based on the wealth of other testimony about his role in the cancellation of the first SRR.

Based on the testimony of Messrs. Matusic and Bonner, the court is convinced that Lt. Col. Ware terminated the SRR for less-than-pure motives. The termination did not occur because GDS had presented insufficient detail as of 11:00 a.m. the first morning of a three-day meeting. Termination occurred as a show of power by Lt. Col. Ware. Because the termination was not for legitimate purposes, GDS is entitled to recover for the damages it sustained as a result.

Although plaintiff identifies the problems associated with the SRR as "[t]ypical," Plf's Br. filed Dec. 2, 1999, at 85, extrapolation from this one example to any other meetings and briefings is not within the court's province. Beyond the second SRR, plaintiff entered no evidence or testimony at trial that identified or quantified that GDS was directed to engage in meetings or briefings beyond the scope of the contract. The nebulous or sweeping testimony adduced is insufficient proof. Plaintiff therefore is entitled to recover only those costs associated with the second SRR.

3. Late government-furnished information and action items

Plaintiff provides a veritable laundry list of late GFI and AIs that it contends reflects a breach of the Government's duty to cooperate. Defendant responds by asserting that the response time to AIs for each party was approximately the same.

Mr. Cotellessa testified about a number of incidents involving GFI that hindered performance. According to Mr. Cotellessa, the Government was to furnish a "worst case scenario" for stress testing the ATACC. He testified that this information was furnished late and that the Government failed to deliver radiation- and biohazard-proof doors. ECP3 addressed the Government's failure to deliver GFI. Mr. McLean testified about the Joint Munitions Effectiveness Manual data (the "JMEM data"). At the first SRR, GDS requested certain JMEM data, which would be GFI. An AI was issued; a delay ensued; a new AI was issued; and GDS eventually received the JMEM data.

On June 7, 1993, GDS printed a list of AIs, which are presented in greater detail in the individual AIs that GDS printed. Mr. McLean and others testified to a litany of AIs for

which plaintiff contends untimely responses were made. The individual nature of each late response is insignificant at this point.

Mr. Fravel, who led the IV&V effort for Texel, testified that problems meeting AI deadlines existed on both sides. Texel was required to respond to AIs within one week, although he offered no testimony about GDS's or the Government's required response time. Mr. Fravel testified that untimely receipt of materials or issues addressed in AIs can slow the development process.

Doubtless, the Government was slow to respond to AIs and requests for GFI. Less clear is whether the slow responses to AIs and requests for GFI amount to breach of the duty to cooperate. In order to answer this question, the court must assess whether the slow response to an AI or the untimely provision of GFI hindered the contractor's performance. Each incident of tardiness must be assessed individually for causation and then for damages.

The record does not permit the court, with any level of confidence, to determine whether, and which, GFI and AI issues rise to the level of a breach of the duty to cooperate. Moreover, Mr. Cotellessa testified that both GDS and the Government were routinely granted extensions. As extensions were granted, dates in GDS's AI tracking system were changed. The result of these changes is to reduce the transparency. The court can no longer ascertain when responses to AIs initially were due. In footnote 1 of PX 755, "Summary of Sample (P-404) Changes and Impacts from Action Items and Vague, Ambiguous Requirements in ELEX-T-620A," plaintiff notes: "The 'Due Date' on the Action Item forms in Exhibit P-404 is the last such date assigned for that item, rather than the initial date, and thus not a reference point from which to measure timeliness."

For example, A890008 dealt with the definitions of two acronyms -- LRU and LRI. 24/ The Government was to supply these to GDS. GDS asserts that the supplied definitions were untimely. The court only knows that, from GDS's perspective, the Government was tardy. The court has no way of knowing whether the lateness of these definitions hindered GDS's performance and, if so, how much of a negative impact this caused GDS. A890008's final due date was June 15, 1989. The government response that GDS accepted was provided on June 12, 1989. Although this AI response does not appear late, plaintiff lists this AI for common definitions of acronyms LRU and LRI for the ATACC program as "Late1," meaning that it was "late[] relative to request/need of GDS." From the evidence at trial, the court cannot determine an initial due date or whether GDS freely and willingly extended the due date, thereby undercutting plaintiff's position that tardiness

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24/ LRU stands for lowest replaceable unit; LRI, lowest repairable item.

hindered performance. The court was provided no guidance, other than reliance on the witnesses' varying memories about individual AIs that were issued more than a decade ago, as to how to determine actual lateness of GFI and AIs.

Further, GDS's use of the term "late" raises concern about the court's ability to assess the timeliness of the Government's response to AIs. Mr. McLean testified that PX 755 was representative of what occurred with AIs throughout the ATACC program. He indicated that 18 AI responses were late relative to need; that three were late in the program, *i.e.*, the lack of information occurred late in the program; and that 45 responses to AIs led to changes. The use of two different meanings of "late" gives the court pause when assessing claims of lateness testified to by others -- Mr. Cotellessa, for example. When Mr. Cotellessa testified that GFI or an AI response was late, did he mean "lateness relative to request/need of GDS" or "late relative to stage of contract performance?" In addition, the first use of the word late is problematic because the court would assess lateness relative to "need" for performance -- that is, whether the need for the response to the AI hindered performance -- not to the "request."

Plaintiff has failed to carry its burden of proof with regard to the duty to cooperate in the production of GFI and the resolution of AIs. Accordingly, recovery is not warranted.

4. Failure to manage and to control document review

Plaintiff alleges that "[t]he Government seriously mismanaged document reviews . . . in . . . violation of the Government's implied obligations to cooperate and not hinder [GDS's] performance." Plf's Br. filed Dec. 2, 1999, at 91. 25/ Plaintiff bemoans the "anarchic approach" to CDRL comments, by which comments of various government organizations and government contractors were supplied to GDS without any editorial control by the Government. Defendant responds that the contract placed the burden for managing document review on GDS.

25/ In a footnote plaintiff makes the argument that "[t]his aggressive schedule constituted a Government representation that the ATACC system was so well defined and straightforward that the design could be documented, in compliance with the stringent requirements of DOD-STD-2167A and DI-MCCR-80030A, a full three months prior to the presentation of that design." Plf's Br. filed Dec. 2, 1999, at 91 n.21. Plaintiff supplies no support for this claim. Case law appears to espouse the opposite view when performance specifications are at issue. See Fru-Con Constr. Corp. v. United States, 42 Fed. Cl. 94, 95-96 (1998) (citing cases).

In section 3.2.4.2.1.1.6, the SOW provides:

> The contractor shall interface with the Government-appointed software IV&V agent(s). *At a minimum*, this interface shall provide for delivery of materials to be evaluated by the software IV&V agent(s), receipt of software IV&V results on those materials, *coordination on the status of discrepancies detected by the software IV&V agent(s)*, and participation in technical interchange meetings with the software IV&V agent(s) as directed by the Procuring Agency. In addition, *the contractor shall provide administrative and technical support* for the software IV&V agent(s).

(Emphasis added.) The contract documents also place a burden on the Government to respond to GDS's submissions within a given time period.

Although it would have been advisable to require the Government to vet the comments for redundancies and inconsistencies, to limit their scope and duration, and to track changes based on prior comments, the contract placed the burden for these efforts on GDS. Therefore, although not the most efficient system, the management and control of document review does not rise to the level of a failure to cooperate. Plaintiff is not entitled to recovery on this ground. However, placing the coordination efforts on GDS does not excuse the Government from its burden to reply to GDS's submissions within the allotted time. For this failure to cooperate, the Government is liable to GDS.

V. <u>Efforts associated with the MTS and JINTACCS message formats</u>

A significant portion of the ATACC effort, although less than plaintiff would have the court believe, revolved around the integration of two message protocols -- MTS and JINTACCS. The ATACC had to operate with both protocols because they, like TADIL and NATO Link-1, served different purposes. MTS, a bit-oriented system, was a Marine-specific communications protocol. This relatively new communications protocol was to be the standard for all Marine-only communications. When Marines using an ATACC needed to communicate with other services in the military, JINTACCS, a long-used character-oriented protocol, was the standard.

The ATACC specification required that the ATACC operate with a degree of automation so that the system could handle incoming and outgoing MTS and JINTACCS messages, such as ATOs, with limited human involvement. GDS set about designing a system that was fully automatic, *i.e.*, a system in which an incoming MTS message could be

parsed, stored, and sent out in JINTACCS without human involvement. This task proved very difficult, if not impossible, for GDS. After struggling mightily, but complaining little, GDS declared to the Government on or about May, 24, 1990, that the task before it was impossible.

Following some back and forth on the issue, the Government decided that the most appropriate course was to limit the number, scope, and content of messages to those contained in the MTS format. This more limited task still proved difficult under GDS's proposed method of performance. MTS was discarded completely, and GDS was asked to deliver an ATACC containing only JINTACCS messages. Although plaintiff complains about these events to some degree, especially the first choice to program to MTS and the later discarding of MTS, it appears that the process of winnowing the message sets provides no basis for a constructive change or other claim.

Plaintiff contends that the messages contained within MTS and JINTACCS were incompatible, that the Government possessed knowledge of the incompatibility and did not share that knowledge, that the Government and GDS suffered a mutual mistake as to compatibility, and that, if not mutual mistake, GDS suffered unilateral mistake as to compatibility. Defendant responds that sufficient means exist to harmonize the two message sets within the requirements of the specification, and that compatibility of two communications protocols is not a "fact" of the nature needed to prove a mutual mistake of fact. Plaintiff failed to satisfy its proof burdens on these issues because adequate means of making the communications protocols compatible exist within the protocols -- and therefore do not amount to a constructive change -- and because compatibility of two communications protocols that had not been used together in a system like the ATACC is not a "fact" as used in the legal standard for mistake of fact.

1. Impossibility

Plaintiff contends that the automatic functionality and the database management requirements of the ATACC specification for MTS and JINTACCS message formats were impossible or commercially impracticable to perform. When a contract specification is impossible to perform, a contractor is entitled to recover its cost of performance while attempting to satisfy the specification. See Hol-Gar Mfg. Corp. v. United States, 175 Ct. Cl. 518, 525, 360 F.2d 634, 638 (1966); see also Blount Bros. v. United States, 872 F.2d 1003, 1007 (1989) (discussing impossible and commercial impracticable performance). Impossibility extends to performance of a contract specification that is commercially impracticable. See id.

In section 3.1.6.12.3, the ATACC specification provides:

ATO, Message and Report Generation. The computer program shall provide for the automatic generation of JINTACCS and MTS ATOs and messages and the generation of reports to include the following:

. . . .

b. Display initial data to be included into reports and messages, when generated, for operator action/modification, with prompts or notices as applicable to indicate missing, incomplete or possibly out of date information. The system will provide the operator a selection of acceptable default values or entries for all ATO elements which are not in or cannot be derived from information in the data base to reduce and eliminate operator action.

c. Upon completion of operator action, format the approved data as necessary for transmission or output as the designated message or report.

d. In order to automatically generate the ATO, the system shall review the data base to:

(1) Determine Mission needs, as submitted by higher, adjacent, and subordinate agencies as well as operator inputs.

(2) Determine suitability of available resources to achieve optimal fulfillment of mission needs. This optimization shall be based on rules inputted at initialization or subsequent modification.

(3) Apply resource allocation criteria/rules which include but are not limited to the following: aircraft suitability and availability, environmental factors, crew availability, ordnance availability, fuel availability, and others such as coordination or timing.

(4) Revise and revalidate the ATO file based on operator inputs and/or modifications. All of the resulting changes will be ID'd for confirmation by the operator.

(5) Provide the capability for operators to trial or test the effect of altering selected parameters of resource allocation contained in (3) above.

Section 3.1.6.12.4 provides:

Textual Data Management. The computer program shall provide textual data management to include:

a. Control and management of textual database resources in a multi-file configuration.

b. Provide operator display aides such as menus, prompts, notices and summaries.

c. Accept operator entries necessary for data file entry, recall, and modification.

d. Enable the generation, recall, modification, and statistical data output based on file content. This shall include provision for:

(1) User database creation by specification of file name, content and structure. (See figure 3-3).

(2) File data entry from operator input and/or JINTACCS (MTF) and MTS message data provided by digital data communications.

(3) Operator edit and data file manipulation capability to include insert, delete, protect fields, cut and paste, search, and replace.

(4) Record selection for data display and update through user-specified programmable fixed-function keys. A maximum of one primary and one secondary key shall be provided.

(5) Operator definition of electronic status boards. This shall include: title, structure, columnar and/or marginal headings, and linear divisions.

. . . .

(8) Support of simultaneous operator activities relative to display and data entry of electronic status board information, JINTACCS (MTF) and MTS message preparation, file queries, and report generation.

. . . .

(12) Retention, display, and automatic generation of preformatted JINTACCS (MTF) and MTS messages for operator validation. These messages shall be provided to digital data communications management for transmission.

1) Automatic functionality

Plaintiff complains about the requirement for automatic, initial population of all data fields in outgoing messages and ATOs with data in or derived from the database.

The specification allows for human involvement, a "Marine in the loop," for the generation of messages and ATOs. GDS demonstrated an understanding that a Marine in the loop was acceptable in its promotional video touting its demonstration model's capabilities. The video showed the development of an outgoing message. The computer did not generate the message without human involvement. Rather, an operator developed an outgoing message based on a number of prompts that may or may not have offered the operator options. Although not incorporated into the contract documents as offering a baseline, this pre-award demonstration reflects an understanding that the Marine in the loop was an option for the ATACC design.

Plaintiff complains about the updating of status boards with data from the database in both JINTACCS and MTS formats. Populating data fields of outgoing messages from data in the database and updating status boards from data in the database were functions that permitted human involvement, a Marine in the loop. Because the specification permits a Marine in the loop, GDS was not required to develop an ATACC based on fully automatic functionality for these two features. Plaintiff did not prove that this Marine-in-the-loop approach was impossible or commercially impracticable. In addition, as discussed below, the database management requirements permitted separate physical databases. Such separate physical databases would obviate the impossibility that GDS appears to have encountered.

2) Database management

The database management specification was a performance specification, not a design specification. 26/ The specification outlined broad details about the database and focused

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26/ Plaintiff correctly states that the ATACC specification "included certain rigorous design specifications." Plf's Br. filed Dec. 2, 1999, at 55. However, plaintiff's characterization of receipt, processing, and storage of data as a design specification is not

on database functionality, rather than form. For such specifications a contractor is entitled to perform in any manner that satisfies the performance criteria set forth in the specification. See North Star Alaska Housing, 30 Fed. Cl. at 285 (citing cases).

The court heard testimony that a database can be construed from several different views, including physical, logical, and user's. Mr. McLean testified:

> A: If you consider that at the lowest level there is a physical existence of the data in a database, the data may be arranged according to how you tell the DBMS to arrange it. You can have some of the data in your database on one computer such as you might have one file in the database on one computer, another file in your database on another computer.
>
> And that would be your physical -- physical view of the database. That would be your physical database. Certain fields would be encoded a particular way to store it in the database. That's a physical view of a database.
>
> A logical view says whenever I go to get information out of a particular file or table, I don't care where it is. The [Database Management Software] worries about where it is. So to me, logically, that particular file could be spread over three different computers. I don't really care.
>
> So to me, it's a logical view. I ask the database for information from that file and it gives it back to me and it worries about the physical underpinnings, if you will, of where that data is and what its actual storage format is on the disk.
>
> Q: What is a user's view of a database?
>
> A: A user's view is such that information that is presented to the user would be transformed from the database to always be presented in a particular form. An example might be you might store data in the database, a time value, time on target.
>
> And the database might store it in its own representation of what a time is. We've all gone through the Y2K thing. Different computers would store time values in different formats.

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accurate. The design specifications in the ATACC specification include the MTS and JINTACCS protocols, not the receipt, processing, and storage thereof.

But when it is presented to the user, you can define for him exactly -- or somebody can help define for him how that date and time would be displayed. And there are various different forms of displaying date and time. But to the user, when he sees a date and a time field, the user field would define how he wants to see that field.

It also defines what information out of a particular file or table he would be interested in. As far as he was concerned, he may only want to access or be interested in certain parts of that file.

So you can arrange and rearrange the actual logical files that are in the system into one -- a view for the user where he thinks -- he doesn't really know or care what is behind it. But to him, he is looking at data that is arranged for his use. And that would be a user view.

Q: Relative to the problem that you encountered with regard to the ATACC functionality required and the JINTACCS and MTS message systems, which is the -- which of those three views that you described is the relevant view?

A: The logical view is what contains -- or what defines what's contained in the database. Each individual user could have a separate user view. And an individual user might only be interested in parts of the database.

A planner might be interested in one part of the database. An operator or someone involved in an execution might be interested in another part of the database.

But together, all that together is the logical view. And the specification paragraphs that define the information content in the database specify what information has to be in the database. So that defines the logical view of the database.

GDS could have used a physical, logical, or user's view for the ATACC integrated planning and status database represented in Figure 3-3 of the specification. A logical view would have permitted GDS to segregate and store information in different ways, including multiple databases that would operate as one database from the user's view. Dr. Evans, plaintiff's software expert, testified that he explored the possibility of segregating MTS and JINTACCS into two databases. He concluded that it was possible, but that human involvement was still necessary.

Based on this testimony, the court finds that the parsing, *i.e.*, the breaking apart of whole messages into discrete items, of JINTACCS and MTS messages to a database was not impossible or commercially impracticable. GDS merely selected the incorrect approach when designing its database, thereby accounting for increased costs and the seeming impossibility. Mr. Matusic testified that Mr. Fritzson, who assumed Mr. McLean's position in July 1991, believed that he could accomplish MTS and JINTACCS compatibility through the use of two databases. Dr. Evans testified that Mr. Fritzson was able to segregate the protocols into a two-database system.

3) Translation

Mr. McLean testified about a number of examples showing that MTS and JINTACCS did not offer identical choices. For example, in a given tactical air request, which would come to the ATACC in MTS, the request could be "MARK," signifying "fire delivered to locate a position or target." The ATACC might then need to transmit an outgoing JINTACCS air support request message. The requisite JINTACCS message contains no corresponding value for "MARK," although a number of options, such as "Smoke," which means to mark or obscure with smoke, are available. Some substitutes could be used, but valuable information would be lost. Mr. McLean cited a list of incompatibilities, which, although it contained at least one error, he claimed was representative of the problems with MTS/JINTACCS compatibility. Dr. Evans also testified that information in one protocol only rarely directly matched information in the other.

Although the testimony was clear that there were some unknown number of incompatibilities between JINTACCS and MTS, Michael L. Murphy, defendant's expert, offered two options to resolve the conflicts. 27/ First, hyphens can operate as place holders. Second, both message standards allowed for amplification fields. Amplification fields allow Marines who generate ATOs and other messages to indicate additional information in outgoing messages. For example, if an incoming JINTACCS message about marking were to indicate to mark with smoke, an outgoing MTS message could indicate mark and contain an amplification field indicating that the marking was to occur with smoke. Mr. Murphy, who had hands-on experience with various military message sets, was of the view that

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27/ Mr. Murphy also testified that at least one of the incompatibilities, though a technical incompatibility, was not operationally valid, *i.e.*, at least one of the values used by plaintiff in the demonstration of the incompatibility would never be used in that specific ATO. Defendant did not delve deeply into the scope of these operationally invalid ATOs, but the court saw enough to raise additional questions about the veracity of plaintiff's sweeping incompatibility claim.

amplification fields could serve to resolve any incompatibility between the message sets. Dr. Evans maintained that an operator had to be involved in the generation of text for the amplification field, but use of amplification fields was a possible alternative. Moreover, at least two witnesses -- Messrs. Fravel and McLean -- were of the opinion that the conclusion that interoperability was impossible was never reached. Maj. Bonsignore, who followed Capt. Iaquinto as the Marine Corps's in-plant representative, after a rudimentary review of the compatibility of the two message sets, concluded that they were compatible to a degree and that the problems that GDS was suffering were the result of a failure to perform a proper data analysis before doing the database work. He characterized compatibility as difficult, but not impossible.

Mr. Murphy also discussed the process of remedying incompatible message requirements. For incompatible messages GDS could have generated ICPs, Interoperability Change Proposals. In theory, the Government would use these ICPs to refine the two message standards. It was Mr. Murphy's experience that the military did refine the message standards, thereby improving interoperability. Although the Government may have been dilatory in responding to some AIs, at a minimum, GDS was obligated to identify specific instances of incompatibility and afford the Government the opportunity to remedy any incompatibility.

Because the specification permitted a Marine in the loop, the translation problems about which plaintiff asserts a claim of impossibility are not impossible. Mr. Murphy testified at length about the means by which one can make the two protocols match. Other witnesses, as well, questioned the actual incompatibility and discussed the option of operator use of amplification fields to prevent data loss.

Performance of the automatic functionality and the database management requirements of the ATACC specification for MTS and JINTACCS message formats were neither impossible nor commercially impracticable. No liability attaches for impossibility related to the MTS/JINTACCS claim. Even if the Government were liable, as discussed <u>infra</u> at 100-10, plaintiff did not prove damages with the requisite certainty to merit recovery.

2. <u>Superior knowledge</u>

To be entitled to recover under a claim of superior knowledge, plaintiff must demonstrate that

> (1) [it] undert[ook] to perform without vital knowledge of a fact that affect[ed] performance costs or duration, (2) the government was aware the contractor had no knowledge of and had no reason to obtain such information, (3) any

> contract specification supplied misled the contractor, or did not put it on notice to inquire, and (4) the government failed to provide the relevant information.

American Ship Building, 228 Ct. Cl. at 225, 654 F.2d at 78; see also Helene Curtis Indus., 160 Ct. Cl. at 442, 312 F.2d at 777.

The Government did not possess superior knowledge with regard to MTS/JINTACCS compatibility. Compatibility was not a "fact" that affected performance cost or duration. Compatibility was a technical judgment or prediction made by both the Government and GDS. Based on its experience, GDS believed that it could harmonize the two message sets. Trial revealed, however, that GDS overestimated its ability in this field and suffered the consequences of additional expenditures of its own resources.

Even Dr. Evans took the position that because the contract contained a CLIN for MTS test software, he was able to identify MTS as a new and untested system. The immaturity of MTS should have provided sufficient notice to GDS to inquire about the compatibility of the two communications protocols. Instead, GDS, after limited review of MTS and apparently no comparison of MTS to JINTACCS, chose to rely on the less-than-clear statement that MTS was designed "in consonance with" JINTACCS. Although there may have been an indication that some other system or systems had implemented MTS and JINTACCS, thereby mitigating the duty to inquire, GDS's search for these systems yielded none.

Moreover, the Government did not fail to provide relevant information. It provided a fully stocked RFP library at Calculon. GDS was able to meet with personnel at Eagle Technologies, the government contractor that developed MTS. At this meeting, after contract performance had commenced, Mr. Matusic first became aware of the compatibility problems that GDS was facing. Plaintiff did not show that the Government failed to provide available relevant information that it possessed with regard to compatibility of MTS and JINTACCS. Indeed, the Government, as evidenced by Maj. Guy's testimony, was under the impression that the protocols were compatible.

Plaintiff failed to carry its burden with respect to a claim of superior knowledge. Compatibility was not a fact of which the Government could possess superior knowledge. GDS was on notice to inquire about compatibility because of the newness of MTS and because of GDS's limited research that showed a lack of other systems that implemented MTS and JINTACCS. The Government shared all relevant information that it possessed regarding the compatibility of MTS and JINTACCS.

3. Mutual mistake

A party alleging mutual mistake must prove that 1) both parties were mistaken in their belief regarding a fact existing at the time of contracting; 2) the mistaken belief must have constituted a basic assumption on which the contract was made; 3) the mistake must have had a material effect on the bargain; and 4) the contract must not have placed the risk of mistake on the party that is seeking relief. See Atlas, 895 F.2d at 750. As discussed previously, opinions, judgments, and predictions do not amount to facts existing at the time of contracting.

The compatibility of MTS and JINTACCS was not a fact existing at the time of contracting. That compatibility was not a fact is demonstrated by the *a priori* fact that MTS and JINTACCS had never been implemented in the same system. There was no way of knowing that the systems were fully compatible. Indeed, plaintiff's efforts to prove its superior knowledge claim, which the court ultimately found unpersuasive, undercut its mutual mistake claim. During trial plaintiff hammered the immaturity of MTS as a message protocol. This stage of implementation, however, should have served as notice that compatibility would be a prediction or technical judgment.

As discussed previously, the contract placed the risk of mistake on the contractor, and not on the Government. GDS assumed the risk that it would be able to harmonize these two communications protocols. Most telling on this score was the testimony of Dr. Evans, plaintiff's software expert. Dr. Evans testified that the ATACC contract contained a CLIN for MTS testing. This CLIN, he testified, put him on notice that MTS had yet to be fully implemented. If GDS's expert was able to surmise that the need for MTS test software indicated that MTS was new and untested, GDS should have been able to reach the same conclusion. In addition, a November 15, 1990 memorandum from Messrs. Edward Mitchell, Glinka, and Cotellessa, GDS's Program Director, Manager of Business Operations, and Manager of the Battle Management Subsystem (promoted to System Analysis and Engineering), respectively, informed Mike Ferry of Grumman's business-development office that "MTS is an emerging system," "its message formats are untested," and "[n]o versions of MTS are operational in the field." Because GDS relied upon one short passage in the MTS Technical Interface Design Plan, the meaning of which is not entirely precise, to assuage any concerns about compatibility, without considering the other warning signs, GDS assumed the risk in the contract or should be held to bear the risk as a result of its perceived knowledge.

Plaintiff has failed to carry its burden with regard to mutual mistake. Compatibility of the two communications protocols is not a fact as required by the legal standard for mutual mistake. In addition, by agreeing to a fixed-price incentive contract, GDS was assuming the risks of cost overruns associated with the MTS/JINTACCS effort. Because plaintiff failed

to prove all elements of mutual mistake, the Government is not liable to GDS for mutual mistake with regard to the MTS/JINTACCS compatibility claim.

4. Unilateral mistake

To succeed on a claim of unilateral mistake, a party must demonstrate:

(1) mistake by one party, not bearing the risk of such mistake, as to a basic assumption on which he made the contract;
(2) that has a material effect on the agreed exchange of performance; and
(a) the effect of the mistake is such that enforcement of the contract would be unconscionable; or
(b) the other party to the contract has reason to know of the mistake.

National Rural Utils. Coop. Fin. Corp. v. United States, 14 Cl. Ct. 130, 141 (1988) (citing Restatement (Second) of Contracts § 153 (1981)), aff'd, 867 F.2d 1393 (Fed. Cir. 1989). Because the court has held that two elements of mutual mistake were not satisfied -- the factual nature of compatibility and the assumption of the risk both under the contract and as a finding by the court -- plaintiff may not avail itself of this theory of recovery. Further, no evidence or testimony suggested that the Government knew or should have known that GDS was mistaken about the compatibility of MTS and JINTACCS or about its ability to make MTS and JINTACCS operate within the same system.

VI. Damages

1. Total cost claim

Plaintiff bases its claim for total costs on two theories of liability. "[T]he Government's violation of statutory and regulatory prohibitions . . . entitle[s] [plaintiff] to recover in *quantum valebant*, pursuant to an implied contract," and "statutory and regulatory violations, as well as . . . mutual mistake of fact as to the proper contract type, . . . entitle[s] [plaintiff] to recover in reformation." Plf's Br. filed Dec. 2, at 93, 94. Because the court has ruled that the contract, even though illegal, should be enforced as written, and because the court did not find a mutual mistake of fact, total cost recovery is not warranted.

2. Modified total cost claim

In the alternative to a total cost recovery, plaintiff seeks a modified total cost recovery. To arrive at its modified total costs, plaintiff identifies the difference between the total cost and the bid, and then subtracts various offsets, including a decrement for contractor-caused

costs. Defendant counters plaintiff's claim to entitlement with a house-of-cards theory: If the court were to find no liability as to any one (or more than one) alleged constructive change, plaintiff's recovery collapses because "the Court [would be left with] no fair or reasonable basis [upon which] to determine the value of whatever claims might remain." Def's Br. filed Dec. 13, 1999, at 77. Defendant's argument overstates that which will remain for the court to assess.

Proof of the quantum of damages rests "solely upon plaintiff." Mega Constr., 29 Fed. Cl. at 444. Such proof of damages must be made "with sufficient certainty so that the determination . . . will be more than mere speculation." Willems Indus., Inc. v. United States, 155 Ct. Cl. 360, 376, 295 F.2d 822, 831 (1961) (citing Winn-Senter Constr. Co. v. United States, 110 Ct. Cl. 34, 36, 75 F. Supp. 255, 259 (1948)). As a method of tempering a total cost award, which is a "last resort," Neal & Co., Inc. v. United States, 36 Fed. Cl. 600, 638 (1996) (citation omitted), aff'd, 121 F.3d 638 (Fed. Cir. 1997), the court may use a modified total cost award to estimate damages. To arrive at a modified total cost award, the court uses "the total cost method, adjusted for any deficiencies in the plaintiff's proof in satisfying the requirements of the total cost method." Id.

The total cost method, which measures damages based on the difference between a plaintiff's actual incurred costs and its proposed costs, is appropriate when

> 1) [t]he nature of the losses makes it impossible or highly impracticable to determine the actual losses directly with a reasonable degree of accuracy; 2) the plaintiff's bid was reasonable; 3) its actual costs were reasonable; and 4) it was not responsible for the added costs.

Servidone Constr. Corp. v. United States, 19 Cl. Ct. 346, 384 (1990) (citation omitted), aff'd, 931 F.2d 860 (Fed. Cir. 1991); see also Teledyne McCormick-Selph v. United States, 218 Ct. Cl. 513, 516-17, 588 F.2d 808, 810 (1978) (holding that plaintiff must prove all four requirements by preponderance of evidence); Boyajian v. United States, 191 Ct. Cl. 233, 239-43, 423 F.2d 1231, 1235-36 (1970) (discussing need to show modified total cost with accuracy). In order to justify a modified total cost award, "[t]he contractor must adequately separate the additional costs for which it is responsible." Neal & Co., 36 Fed. Cl. at 638.

1) Nature of the losses

To recover under a modified total cost claim, plaintiff must demonstrate that the nature of the losses makes it "highly impracticable to determine the actual losses directly with a reasonable degree of accuracy" Servidone, 19 Cl. Ct. at 384. Based on the testimony

and other evidence, plaintiff has not established that it was highly impracticable to determine the amount of all of GDS's actual losses.

Significant testimony was offered that, when dealing with a software endeavor like the ATACC program, modifications to one part of the software impact another, and that the person making the changes may not be able to pinpoint the reason for the change. For example, a change in the TADIL communications software may be necessitated by a change in the non-TADIL communications software. The programmer making the second change may not know that the change is directly related to the change in the TADIL software. This testimony was persuasive.

However, the court notes that for a number of the constructive changes it was not, and should not have been, highly impracticable to determine the amount of the actual losses suffered by GDS. See infra at 110. For example, GDS was able to track and allocate the expenses associated with the erroneous reliability requirement. In contrast, the costs associated with the second SRR or the drafting of additional CDRLs, that were predominantly administrative and not technical, were not, but could have been, accounted for by even the most basic of recordkeeping systems.

Plaintiff has demonstrated that, for some changes, it was impracticable to allocate direct costs and damages to identified causes with a reasonable degree of accuracy. For other costs, plaintiff was unable to make such a showing. This mixed result lays a weak foundation for sustaining a damages award.

2) Reasonableness of the proposal

The reduction offered by GDS in its BAFO raises two problems for the reasonableness of the proposal. First, after submitting a claim to the DCAA, GDS was asked a series of questions about its claim. Mr. Glinka had overall responsibility for answering these questions, and Kathy Lepiksaar was GDS's point of contact for the DCAA. When answering an inquiry about the BAFO reduction, Ms. Lepiksaar, according to the testimony of Brian J. Duchnowski, a DCAA auditor and an April 27, 1998 memorandum from Ms. Lepiksaar to Mr. Duchnowski, answered that it was strictly a bottom-line reduction. Although Mr. Glinka undertook an effort to distance himself from this statement as an accurate assessment of the BAFO reduction, the court is concerned about this *post hoc* justification that arises at trial and not during the DCAA audit. Mr. Glinka was asked by Ms. Lepiksaar about the reduction, he knew that she was the point of contact for DCAA inquiries, he answered that the reduction was a bottom-line reduction, and he should have expected that this would be the basis upon which GDS's claim was assessed. Although he later had second thoughts or

a justification, the record is clear that at one point in time GDS represented to the Government that its BAFO reduction was a bottom-line reduction.

Second, Patrick A. McGeehin, defendant's expert in government cost accounting and methods of pricing damages under government contract claims, was adamant in his testimony that the BAFO reduction eliminated visibility into the BAFO. This lack of visibility, in Mr. McGeehin's opinion, prevented judgments about its reasonableness. The court was persuaded by Mr. McGeehin's testimony.

Although plaintiff attempted to show how the BAFO was reduced for the shelter costs brought about by GDS's self-performing rather than contracting with ASD, the court is not fully convinced that such was the case. Significantly, the shelter costs do not account for the entirety of the BAFO reduction. Even if the court were to accept plaintiff's current description of the BAFO reduction, there are still amounts, though limited in amount, that raise the concerns about which Mr. McGeehin testified.

At a time when GDS should have had great interest in answering accurately about its claim that DCAA was auditing, it indicated a bottom-line reduction. Only at trial did plaintiff offer an alternative explanation for the BAFO reduction. While the money trail that plaintiff presented for the BAFO reduction is comprehensible, Mr. McGeehin justifiably still questioned the ability to make any determination about the reasonableness of the BAFO. 28/

3) Reasonableness of actual costs

"A schedule of verified costs . . . is not proof of damages but only a starting point. . . ." Boyajian, 191 Ct. Cl. at 247, 423 F.2d at 1239 (quoting River Constr. Corp. v. United States, 159 Ct. Cl. 254, 270-71 (1962)). Plaintiff must progress to proving that the actual costs were reasonable in light of the government-directed changes about which plaintiff complains.

Plaintiff failed to carry its burden on this issue. Although plaintiff offered much evidence that its claimed costs were actually incurred, little evidence was introduced that these costs were reasonable. Costs associated with actual changes may well be reasonable;

28/ Plaintiff's deficiencies with regard to the reasonableness of the proposal are compounded by documentary evidence such as Mr. McLean's July 18, 1990 memorandum to Mr. Jenkins discussing "[e]rrors in original costing." Although Mr. McLean could explain away some of this memorandum in a benign fashion, it certainly does not vouchsafe the accuracy and reasonableness of GDS's BAFO.

however, additional, actual costs related to asserted changes that were not changes cannot be reasonable because they cannot be levied against the Government. These latter costs are merely overruns that any contractor with a fixed-price contract would be required to absorb.

The court is unable to conclude that overall actual costs were reasonable. Some actual costs were reasonable, while others were not reasonable. This mixed finding raises doubt as to whether a modified total cost recovery is appropriate.

4) Lack of responsibility for additional costs

Plaintiff claims a myriad of constructive changes and breaches of the duty to cooperate. Plaintiff proved some of these claims, but the court also has found that some of the putative constructive changes were not actual changes. GDS's expenditures related to these items were the responsibility of GDS. Because GDS bears some responsibility for the additional costs, which go beyond the decrement taken in its modified total cost claim, the court cannot award damages for those claims.

The results are mixed with respect to each of the four prerequisites for a modified total cost award. It was not impracticable to identify and track some of GDS's costs. The reduction in the BAFO decreased visibility, frustrating a determination of reasonableness. Some costs were reasonably incurred, while others were not. GDS was responsible for some of the increased costs. Because such mixed findings are derived from the record developed at trial, a modified total cost recovery is not appropriate.

Even if the court were to find a modified total cost approach appropriate, GDS must justify its decrement that accounts for contractor-caused costs. To modify its total costs, plaintiff made a decrement of $865,721.00 to offset inefficiencies in the software development process. Of the $865,721.00, $148,910.00 (an amount that plaintiff failed to explain adequately, see infra at 108-10) was due to GDS's software inefficiencies, $80,208.00 was for Cyberchron-related costs, 29/ $65,067.00 was a corrected rate adjustment

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29/ Subcontractors caused delays for GDS. For example, according to Mr. Matusic, SCI was to supply the voice communication system for the ATACC. Delivery was scheduled to coincide with completion of the software effort. SCI was late in its delivery. 29/ Cont'd from page 104.)

Mr. Matusic testified that if GDS were to have suffered no other delays, GDS still would have been delayed anyway because of SCI. GDS suffered other subcontractor delays. GDS contracted with Cyberchron Corporation to provide ruggedized monitors for the ATACC.

after the DCAA audit, $204,583.00 was a DCAA deduction for Modification P00060, and $78,703.00 was a DCAA deduction for Modification P00035. Asserting that the decrement failed to capture all of the inefficiencies and other contractor-caused costs, defendant challenged the adequacy of the claim for damages. The court finds that the decrement is insufficient to account for all contractor-caused inefficiencies, costs, and delays. Much testimony was adduced at trial that reflected inefficiencies or excess costs on the part of GDS. This evidence can be classed into two categories: i) management and ii) technical and performance.

i) Management problems

The ATACC program suffered from management problems. Although witnesses praised Mr. McLean's skills as a software engineer, they also questioned his abilities as a manager. Mr. Matusic's impression of the software personnel was that they did not want to be bothered with how to work well with others. The attitude of the software personnel caused a great deal of difficulty getting information from them. Further, Eric Schnittger, who participated in Grumman's audit of GDS's ATACC program, thought the early operations were heavy in programming and light in systems and hardware. There were five systems engineers and 25 software engineers. This staffing imbalance, identified by Grumman, contributed to early problems in performance of the ATACC contract. On April 4, 1991, Eugene Edelstein, GDS's Director of Engineering, sent a memorandum to Mr. Mitchell, GDS's Program Director, lamenting that "[o]ur software team, below the Software Manager (task leader level) is very young and inexperienced (still!)," and that "[s]ome part of our software problem is very clearly due to that inexperienced staff." Moreover, GDS management appeared to be unable to hit the ground running on this tightly scheduled program. Mr. Fravel testified that while the ATACC program was in the first building, not much work was being performed because the facilities were not fully in place. Cherone D. Jaschek, MCTSSA's Assistant Project Officer, who testified by deposition, observed GDS's schedule slippage and blamed GDS for a number of the development problems.

At trial defendant demonstrated that GDS personnel, for example, through Mr. Cotellessa's September 30, 1991 deposition for the Cyberchron litigation, believed that at the time of the Cyberchron litigation, Cyberchron's breach was the only source of delay on the ATACC program. Although plaintiff attempted to blunt the force of this evidence by eliciting testimony that the delays testified to in the Cyberchron litigation were the only delays of which the GDS employees were contemporaneously aware, the court was not persuaded by plaintiff's showing. GDS took a decrement of $80,208.00 for Cyberchron-related costs; however, the Cyberchron impact could have been greater, given the ripple effect about which plaintiff so frequently elicited testimony, not to mention the SCI delay.

Grumman and GDS undertook to resolve these management problems. In March 1991, Mr. Fritzson and other Grumman software managers from Grumman's Bethpage, New York, office visited the ATACC site for interviews and debriefings. In May 1991, a scant seven months before the scheduled delivery date, Mr. McLean left the software engineering manager position. By July 1991 Mr. Fritzson officially assumed the position vacated by Mr. McLean. These efforts reaped some rewards. In a July 12, 1991 e-mail, Contracting Officer DiMaio updated Mr. Stolark about a meeting she had the day before with GDS. "The meeting covered GDS's progress in software development. They have really come a long way in the past few months. They are better organized and seem to have gotten their act together." Mr. Matusic testified that Mr. Fritzson was more team oriented than Mr. McLean. No doubt the change from Mr. McLean to Mr. Fritzson improved GDS's efficiency, but also underscores the inefficiencies while Mr. McLean was directing the software effort.

Given all of the testimony about the ripple effect or bow-wave effect related to problems that occur in software, these inefficiencies in management and staffing early in the ATACC program, and continuing through much of the program, would have impacted GDS's costs substantially.

ii) Technical and performance problems

GDS experienced a number of technical difficulties that were its own doing, including the youth and inexperience of its software team. These difficulties, some of which Timothy R. Lister, defendant's expert on software development and project management, discussed and some others that are recounted here, affected GDS's costs.

According to Mr. Matusic, GDS had designed some things that were "all wrong." For example, he testified about GDS's shelter work.

> That became a great deal of difficulty. We were not, we didn't have any experience in designing cables. We had no experience in trying to find a vendor to produce those cables. In one instance we produced an entire shelter's worth of cable sets that were wrong. We finished the drawings for the cables prior to the hardware and software folks finishing the design of their systems so the interfaces were all wrong. The cables were all wrong. The connectors were all wrong. That's an awful lot of money and an awful lot of effort.
>
> We had to hire up a brand new ILS staff of trainers, human factors engineers, spare parts and logistics people from scratch, who had to be trained

> on what they were supposed to be doing with the rest of the system. So there was an awful lot of effort there.
>
> The bottom line was that Aircraft Systems Division probably knew more about what they were talking about than we did on how we could integrate that system.
>
> I often reflected back on Bill Bonner's lunacy of we're going to get the equipment in off of a tractor and the managers are going to go down and stuff the shelters. It wasn't until after I watched folks actually go out and prepare those shelters for stuffing that I realized that there were several many years worth of effort to do that, and none of the managers were capable of doing that kind of work.

Mr. Matusic's concessions -- including that ASD, which GDS thought it could outperform on a cost basis, probably knew more than GDS did about shelters -- reflect that GDS itself was responsible for technical and performance difficulties on the ATACC program.

Mr. Fravel testified to problems with requirements traceability. Traceability allows one to know that conditions are being met, to make sure that all requirements are fulfilled. The specification makes no decision about whether to perform certain functions through hardware or software. An SRS is the mapping from the ATACC specification to a software design specification. At the beginning of the program, insufficient attention was paid to the requirements traceability matrix (the "RTM"), the document through which requirements are tracked. This failure led to holes in the SRS and other software documents. These shortcomings were raised in meetings with GDS and government personnel by the IV&V contractor, Texel. Traceability was still a problem when GDS entered the test phase in February or March 1991.

According to Mr. Fravel, during generation of design documents, GDS had problems matching changes in text to changes in diagrams. After an issue was raised, the text of a design document would be changed to resolve the issue; however, the diagram that accompanied the text would not reflect the same change. CADRE, the software used to generate text, would not allow an automatic update of the diagrams when corresponding changes were made in the text. Mr. Fravel identified this problem when tracing the changes through the various iterations. This problem, raised at meetings with GDS, may have been resolved, although the record is not complete on this issue.

Messrs. Fravel and Schnittger questioned GDS's configuration management. The process of configuration management involves tracking the software baselines, making

corrections thereto, and updating the baselines. In configuration management one should not change the test baseline unless one has a change that is the result of a test. GDS made changes that were not the result of tests. According to Mr. Fravel, who worked with Kelly Farrell of GDS on configuration management from June 1991 to June 1992, configuration management problems were never resolved fully. Although formal configuration management, which is expensive and time consuming, had been planned, Mr. Schnittger characterized as informal the configuration management that occurred. The process was kept to a minimal level to cover the program's needs given the time and amount of work.

With respect to some of the technical and performance difficulties, GDS strived to improve. Nevertheless, some efforts to overcome the technical and performance difficulties led to further difficulties. For efforts to regain schedule, Mr. Matusic acknowledged that devices were used, such as datalink test devices, design tools and computer-assisted software engineering tools, and pseudo-code. At least one of these approaches was not helpful. Mr. Matusic testified that pseudo-code was more efficient in some respects, such as software design and programming, but that it hampered other parts of the program because of a lack of visibility. Non-programmers, for example the personnel responsible for drafting the test procedures and user manuals, had a difficult time reading pseudo-code. Some pseudo-code had to be rewritten or translated so that these personnel could perform their jobs.

Disregarding the putative changes above that the court has ruled were not constructive changes, GDS experienced a number of technical and performance difficulties that impacted the cost of performance. No effort was made to quantify these costs.

Of greater concern is plaintiff's inability to justify the amount of the decrement, notwithstanding the faults previously discussed. Plaintiff recognized a need to decrease its claim for its own inefficiencies. To describe and justify its modified total cost claim, plaintiff relied upon Joseph Lucente, Director of Contracts for plaintiff's Logicon Information Systems and Services division. 30/ Mr. Lucente opined that plaintiff's claim for $12.4 million was fair and reasonable. Even though plaintiff claimed that it sustained an overrun of $15.3 million on the contract, plaintiff's personnel went through the claim with a fine-tooth comb over the past year to adjust for decrements, ultimately forgiving the amount of $3 million. Mr. Lucente testified that he "work[ed] with counsel" to prepare exhibits to help summarize the quantum summary.

30/ Robert A. Esernio, Jr., of Ernst & Young, plaintiff's principal damages expert, testified that he was not involved in the preparation of the modified total cost claim.

A: The next step is identified in the second block, which has got the reference to Quantum Summary Appendix D. What we did was we identified ATACC cost accounts that were not significantly impacted by government action.

Q: And how was that done?

A: That was done by means of counsel convening meetings with certain program personnel, and those personnel, based upon their experience and knowledge of the project, identified accounts that were not impacted by government action.

Q: Okay. Now, when we say impacted by government action, what government actions are we referred to?

A: We're referring to -- largely we're referring to constructive changes.

Q: Okay. That are the subject of the claim?

A: That's correct.

Q: All right. What was the result of that analysis?

A: The result of that analysis identified the fact that out of the 36 ATACC cost accounts, about 15 or so were not significantly impacted and, therefore, were not made part of the claim and in fact needed to be -- would be removed from the claim.

Although it was not inappropriate for counsel to play a role in determining the software inefficiency decrement, Mr. Lucente did not testify about how this particular decrement was determined. He testified at length about the Cyberchron-related decrement, but made scant reference to the software inefficiency decrement. This manner of establishing the amount of a decrement allows no means by which to assess its reasonableness or accuracy.

The court is not convinced that the decrement plaintiff took in its modified total cost claim is sufficient to cover all of the costs for which GDS was responsible, even putting aside the court's findings that the Government was not liable for most of the constructive changes. A modified total cost recovery is appropriate when a court can reasonably determine the difference between the cost of performance and the bid, subtracting from that subtotal an amount that reflects contractor-caused costs. Because the evidence showed that the

management problems and technical and performance problems that arose on the ATACC program were of a greater magnitude than that recognized by plaintiff, recovery under a modified total cost theory is not warranted.

Plaintiff has failed to carry its burden with regard to the claim for modified total cost recovery. Unlike defendant's house-of-cards theory, the lack of proof does not undercut all of plaintiff's damages claims. The court recognizes that changes and costs related to software were interdependent and that plaintiff reasonably could not have been expected either to track them from the outset or to assign costs to its Summary of Impacts to WBS Elements, PX 953, that retrospectively set out each constructive change and its impacts. See Boyajian, 191 Ct. Cl. at 252, 423 F.2d at 1242 (noting that failure to keep books in a segregated manner is not fatal to making claim). The barrier to plaintiff's recovery ultimately is the recognition that a verifiable decrement due to contractor inefficiency was required, coupled with the failure to adduce testimony that would have furnished the predicate for a finding of its reasonableness. Assuming that plaintiff had put forward evidence on these two points, plaintiff would have been able to recover on its successful constructive change claims for which costs reasonably could not be broken out. This infirmity also precludes an award of damages reflecting a "jury verdict" approach.

Nonetheless, plaintiff has shown damages reasonably allocated to several cost categories. Unlike in Neal & Co., where the court was unable to consider recovery based on individual claims "[b]ecause [the contractor] presented its claims in a modified total cost approach, [and] did not put on evidence of direct costs associated with specific items of government responsibility," 36 Fed. Cl. at 644, plaintiff in the instant case entered evidence of direct costs associated with specific items of government responsibility. These costs include those associated with ECP1 and the reliability requirements. However, for the traceable costs related to the second SRR and the retesting of NDI, GDS did not present evidence of direct costs, and therefore GDS is unable to recover those damages.

For ECP1, the court must turn to the "jury verdict" method to award damages. A "jury verdict" may be appropriate "when damages cannot be ascertained by any reasonable computation from actual figures." Dawco Constr., Inc. v. United States, 930 F.2d 872, 880 (Fed. Cir. 1991), overruled on other grounds by Reflectone, Inc. v. Dalton, 60 F.3d 1572 (Fed. Cir. 1995). "Before adopting the 'jury verdict method,' the court must first determine three things: (1) that clear proof of injury exists; (2) that there is no more reliable method for computing damages; and (3) that the evidence is sufficient for a court to make a fair and reasonable approximation of the damages." Id. (citation omitted).

Damages cannot be ascertained by any reasonable computation from actual figures. GDS possesses no actual labor figures for ECP1. Before and immediately after performance

of ECP1, all that plaintiff could generate was estimated actual costs. The court received appreciable testimony on the inability to track actual labor costs for ECP1 and constructive changes. Although such testimony was discounted with respect to the latter because it was applied to some constructive changes that GDS clearly could have tracked separately, the court is convinced that for a predominantly software-related effort that affected multiple areas of the software, like ECP1, GDS was unable to supply precise labor hours. No reasonable computation of actual figures would result in an amount certain for damages; rather, some form of estimation is necessary.

Plaintiff has offered clear proof of injury. The Government paid GDS only $2 million for ECP1. By its terms, ECP1 set the $2 million as the initial funding and contained a clause indicating that the $2-million amount was less than half of the total amount for the definitized contract. That GDS performed work for which it was to be compensated, yet was not, stands as clear proof of injury.

No method of computing the damages is more reliable than the "jury verdict" method. Plaintiff has shown that it was unable to segregate costs related to the ECP1 software effort. Direct damages, therefore, were unable to be presented at trial. The most reliable manner by which to compute damages is to base any award on the estimated actual labor costs to which witnesses testified at trial.

The available evidence provides sufficient basis for the court to make a fair and reasonable approximation of the damages suffered. GDS and the Government each arrived at estimates for the cost of the ECP1 work. These estimates are within $500,000.00 of each other -- GDS at $4,195,572.00 and the Government at $3,742,978.00. A significant amount of evidence was adduced at trial that supported GDS's estimate of labor hours. The Government estimate, as well, was discussed in some detail. It was a good enough estimate for Contracting Officer DiMaio to believe that she could definitize ECP1 from those figures if GDS were to proceed on a claim and the Government were ordered to definitize above $2 million. The damages incurred then fall within the range between the Government's and GDS's estimates. Applying a conservative approach, the court finds that damages should be measured by the Government's estimate of the costs for ECP1, *i.e.*, $3,742,978.00. GDS previously was paid $2 million, leaving an outstanding government liability of $1,742,978.00. 31/

31/ Plaintiff is also entitled to damages in the amount of $522,431.00 for vendor termination costs, which were separate from the ECP1 costs, and for which the court found liability.

The parties stipulated to the amount that GDS expended in proving that the Government used the incorrect reliability equation in the ATACC specification. Because the court has found liability on this issue, damages are in the stipulated amount, $101,446.00.

Although the court accepts that much of the software effort could not be segregated and tracked, other expenditures by GDS could have been tracked and proved by a demonstration of actual costs. The court found that GDS had not planned for two SRRs and that the Government was liable for a constructive change in ordering a second SRR. The cancellation of the first SRR required GDS to develop a new briefing and provide answers to questions raised at that time. Three more days were taken for the actual SRR and an unspecified amount of hours were consumed in preparation. This change also impacted the schedule, although Mr. Bonner was not aware of a schedule slip due to the SRR reschedule. According to Mr. McLean, holding two SRRs consumed GDS resources because of preparation, dry runs, attendance that pulled people from actual work, and repeating certain activities. The work associated with the second SRR was predominantly administrative and not software-related. The court does not find persuasive plaintiff's contention that these costs could not be segregated and proved as part of an individual claim for the constructive change related to the second SRR. As in Neal & Co., 36 Fed. Cl. at 644, plaintiff is unable to recover when it could have presented direct proof of actual damages related to discrete liability claims, but fails to do so because it rests its recovery on a total cost or modified total cost claim.

Although the Government is liable for the constructive change related to the retesting of NDI, GDS is unable to recover. Messrs. McLean and Glinka testified in a substantially similar fashion about the discrete nature of retesting unmodified NDI. Mr. McLean, who addressed the issue with greater detail and force, indicated that if one were unit testing an unmodified NDI CSCI, one would know it at the time. Having rejected total cost recovery and modified total cost recovery, plaintiff's sole source of recovery was to demonstrate damages for the individual elements of its claim. Plaintiff did not track or segregate, and therefore did not present evidence as to, the actual costs associated with this constructive change. Recovery is denied for the claims that could be traced and segregated.

CONCLUSION

1. Based on the foregoing, plaintiff is entitled to recover $1,757,244.00 for ECP1, 32/ $522,431.00 for ECP1 subcontractor termination, and $101,446.00 for the reliability model.

2. The Clerk of the Court shall enter judgment for plaintiff in the amount of $2,381,121.00, with interest pursuant to 41 U.S.C. § 611, from August 23, 1997.

IT IS SO ORDERED.

No costs.

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Christine Odell Cook Miller
Judge

32/ This amount differs from Ms. DiMaio's calculation of ECP1 costs because the parties entered a stipulation on February 7, 2000, which included a profit rate of 12% for ECP1, a profit rate slightly higher that the one used by Ms. DiMaio. Ms. DiMaio's calculation without profit totaled $3,354,682.00. Interest on this amount totals $402,562.00.