



Chief Review Services

CLOTHE THE SOLDIER
OMNIBUS PROJECT

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SYNOPSIS

This report presents the results of an independent review of an umbrella project, Clothe the Soldier (CTS), under which new combat clothing and several items of personal use equipment are being acquired for the Canadian Forces.

The CTS project team's use of the re-engineered Defence Management System processes and acquisition reforms has contributed to reduced bureaucracy and has expedited progress. The omnibus approach has beneficially raised the visibility of the individual smaller projects, assured consideration of compatibility factors and eased the management of the group of projects. Further, the use of Human Factors research and test and evaluation methodology to assist in defining requirements and then to determine the optimal solution will contribute to delivering products that meet the operational requirement and are accepted by the troops. The products are in demand for use by CF organisations and personnel that were not included in the scope and funding of the project.

Key observations have centred on the cost escalation and schedule slippage associated with the unavailability of suitable items and resultant departure from the plan to pursue an off-the-shelf purchasing strategy. Unanticipated development work has contributed to a projected 24 per cent increase over the original indicative cost estimate of \$184M as well as deferring deliveries by a minimum of two years beyond the intended completion in the year 2000. A comprehensive project review, conducted after the CRS review, has received Senior Review Board endorsement for revision of the project scope, cost and logistics factors, and these issues will result in seeking Departmental and Treasury Board approval of these proposals. The CRS review has also expressed concern that although the Canadian Temperate Disruptive Pattern (CADPAT) is being developed for application to selected items, it is not being applied to the main exterior wear uniform of the Improved Environmental Clothing System (IECS). The management response to this issue is that CADPAT, which is still under development, was not available in time for the IECS contracting process and that revision of the current contract would have caused an unacceptable cost increase and delay.

The CTS products all have significant quality of life impact, and their delivery for operational use has been much anticipated. Although the communications strategy was intended to keep the troops informed of progress, the project web sites were out of date, leading to false expectations of schedule and cost. The CTS project team has already initiated corrective action.

RESULTS IN BRIEF

The CF has lagged behind its NATO allies in the area of protective clothing and related equipment. Shortfalls in operational clothing for missions have been met through acquisition of small numbers of specific items that would be refurbished and issued to the next group on rotation.

In order to correct the situation, an omnibus Clothe the Soldier (CTS) project was created in 1995, which brought together, under one management structure, twenty four items that were initially being pursued for individual procurement. A schedule of delivery for all items by the year 2000 was set by the Commander, Land Force Command. To meet this schedule with the least risk, a decision was made to purchase Commercial Off the Shelf (COTS) items.

CTS has been one of the first projects to follow the re-engineered acquisition processes of the Defence Management System (DMS). As such, the focus of this review was to examine the progress and conduct of CTS in light of this. Following is a summary of the salient observations and recommendations which are developed further, in the report.

DMS Acquisition Process. *The project staff are using the new process effectively and have taken steps to ensure the equipment purchased meets the user's requirements. Scheduled milestones have slipped but valid reasons have been identified.*

Risk. *Overall risk for this project was originally assessed as low given that most of the twenty-four items were to be purchased as COTS. However, early in the project it became readily apparent that COTS designs were not suitable. Consequently, all but one item are currently being developed, contributing to an increase in risk to cost and schedule. Recognizing this problem, the Project Management Office (PMO) advised the Senior Review Board (SRB) that it would conduct a project review prior to seeking approvals for the acquisition of those items not yet contracted for. To date neither the Project Charter nor the Project Profile and Risk Assessment (PPRA) have been updated to reflect this impact.*

Cost. *Indicative estimates were optimistically based upon purchase of COTS items. At an SRB meeting in August of 1998, it was stated that the indicative estimate might increase from \$184M to \$229M, an increase of approximately \$44M or 24 per cent. The project staff intend to review the indicative costs as part of a project review and revise the CTS synopsis sheet if necessary.*

Schedule. *The unsuitability of COTS caused an increased need for definition. This contributed to an increase in time required for rigorous test and evaluation, which was dependent upon the availability of troops at appropriate seasons. Further contributing factors to schedule delays included the need to acquire technical expertise in addition to that available from matrix staff. Various procurement process delays were also incurred including the initial inability of industry to deliver on the infra-red specification, resulting in an extension to the bidding process.*

Consequently, the ambitious timeline set by the Commander, Land Force Command, for delivery of all items by the year 2000, is now being revised. Project staff anticipate being in contract for these items in the year 2000 with delivery to follow. It seems probable that the CTS project will require an extension of two to three years.

Performance. Clothing has significant quality of life implications. For this reason, the 80 per cent solution in this project has been interpreted to mean satisfaction on the part of 80 per cent of soldiers. It does not mean a relaxation of capability or specification. To ensure performance, a rigorous test and evaluation regimen is being pursued at all phases of the project. The specifications have been written to ensure the best materials, quality and workmanship are being pursued by Canadian industry. While this should ensure optimum performance and acceptance among the soldiers, it is contributing to schedule slippage and potentially to cost increase.

Canadian Temperate Disruptive Pattern (CADPAT). The CTS project is fielding the Improved Environmental Clothing System (IECS) portion of the project at a cost of \$56M, in solid, olive drab colour. The plan is to then phase in CADPAT or camouflage patterned clothing when it becomes available, through O&M, under strict supply control. The CRS review team is concerned that the olive drab clothing, regardless of wear, may be discarded as soon as CADPAT patterned clothing becomes available. We note, however, that the project plans to issue the fragmentation protection vest, load carriage system, and tactical assault vest in CADPAT and that the combat hat procurement, though approved, has been delayed a year to permit acquisition of the hat in CADPAT.

Communications. The project is working with Public Affairs in providing information to the field on the status of CTS. Fact sheets are provided on contracted items. Unfortunately, this effort is being somewhat undermined by outdated information on the Intranet. For example, the Project Charter, which showed delivery of all items by the year 2000, was still on the Intranet in November 1998, with no indication it was out of date.

Principal Recommendations. It is recommended that:

- the CTS staff periodically revise information on the project web site;
- the project cost and schedule be revised to acknowledge the plan to issue the combat hat, fragmentation protection vest, tactical assault vest and load carriage equipment in CADPAT; and
- the CTS project staff urgently investigate options for application of CADPAT to a significant portion of the IECS combat trousers and combat jacket. It could perhaps be feasible that only the immediate needs of the field force be produced in monochrome olive green, with the remainder being produced in CADPAT.

Management Response. *The CTS project team are conducting a major project review. The Project Charter and the PPRA will be amended once the revised SS PPA for the Omnibus and revised SS EPA for the individual items have been staffed for approval. Steps have been taken to ensure that the internet and intranet sites are kept up to date. While acknowledging the desirability of incorporating CADPAT in the outer shell materiel of the IECS items, the CTS project team are concerned that the industry could not develop the technical capability to apply it to this fabric in time for it to be done within the existing contract.*

REVIEW OF CLOTHE THE SOLDIER PROJECT L2646

PART I - INTRODUCTION

BACKGROUND

1.1 The 1994 White Paper states that the role of the Land Forces is to provide a multi-purpose, combat capable force to meet Canada's security and Defence commitments. Inherent in this role is the need to provide soldiers with the necessary weapons systems, tools and equipment, including clothing, to meet a variety of threats. While deficiencies in clothing have been noted in the past, recent experiences in peacekeeping operations have underscored the problem. Most notably, the need was reinforced during a troop visit by the Minister, while he was visiting CFB Suffield in April 1995, as they trained for Operation COBRA, the UN withdrawal from Yugoslavia. It was noted the CF was well behind its NATO allies in the area of protective clothing and related equipment.

1.2 The shortfall in clothing and equipment for operations was being met through the acquisition of small quantities of operationally specific clothing which, on troop rotation from a mission, would be refurbished and reissued to the next group. This not only had a negative impact on wear and tear but also presented attendant logistics and morale problems. After action reports also highlighted deficiencies with the clothing itself.

1.3 Director General Land Force Development (DGLFD) was directed to examine the possibility of accelerating the acquisition of improved clothing and equipment. DGLFD proposed the amalgamation of a number of existing improvement efforts into one omnibus project and on 30 June 1995 this approach was endorsed by the Vice-Chief of the Defence Staff and given the go ahead to proceed.

1.4 An ambitious schedule of delivery of all items by the year 2000 was set by Commander, Land Force Command. According to the Project Charter, this was to be met through the acquisition of Commercial Off the Shelf (COTS) items in Canada or in service with NATO or ABCA allies. To date, only one item, the Multi-Tool, has been an off the shelf procurement and is now in service. The balance are being developed. Annex A provides a status update for each item.

AIM OF THE REVIEW

1.5 The aim of this review was to examine the CTS project in light of the expedited acquisition approach and the revised approval process that was simultaneously being developed in NDHQ. The thrust of the review was to determine the efficiency and effectiveness of the acquisition approach including the steps taken to assure operational suitability of the delivered products.

1.6 A discussion of observations is presented in Part II. Each observation is followed by its respective conclusion. Recommendations are in Part III.

PART II - OBSERVATIONS AND CONCLUSIONS

THE DMS/ACQUISITION PROCESS

The Omnibus Approach

2.1 The Omnibus Project is defined in the new Defence Management System (DMS) as a project that "...consolidates several closely related requirements into a single proposal that contributes to a specified capability." The overall proposal will be made up of several standalone sub-projects, which are not on each other's critical path. The CTS falls under this definition. Twenty-four separate items are to be procured under the capital umbrella. These are shown in Annex A. It must be noted though that the various sub-projects in CTS do have some inter-dependency in that the various articles of clothing and equipment must integrate effectively. For example, the sock system parameters must be known in order to finalise development of the boot.

2.2 The proper systems integration of all elements of CTS is one major benefit of combining the various projects under one umbrella. This approach will help mitigate the problems of ill-fitting equipment or equipment which interferes with the operation of other equipment. Another advantage is the enhanced profile and visibility given to one major project as opposed to several smaller ones. This results in greater accountability and eases overall management and coordination of the smaller projects. As well, in following the new DMS process, paperwork has been reduced and the approval process expedited.

2.3 A disadvantage which has been noted is that while Treasury Board approval in principle has been granted for the omnibus project, each sub-project must go forward and request separate expenditure approval. Money then cannot be reallocated from one project to another within the omnibus. However, the Minister has expenditure authority for each sub-project under \$30M.

Conclusion

2.4 The omnibus approach has benefited this project in terms of greatly raising the visibility of several smaller projects that may not have otherwise had the impetus to move forward. It has simplified and expedited the management of these smaller projects, assured consideration of compatibility factors, and heightened accountability. Still, under the strict definition of the term omnibus in the DMS, some items do not strictly adhere to this due to the interdependencies and integration issues between them.

Statement of Requirement (SOR)

2.5 Past observations on projects by CRS have shown that SORs were either incomplete or non-existent. The CTS project has ensured SORs are complete and reflect valid requirements. Comments to SORs have been solicited from users and headquarters personnel.

Conclusion

2.6 CTS is following the DMS guidance in defining valid SORs.

Implementation/Acquisition

2.7 This project was one of the first to follow the new DMS process, progressing through the use of Synopsis Sheets to implementation. In implementation, this project has adopted strategies that are described in the new DND Acquisition Reform Guide developed in ADM(Mat). This has included partnering with industry and involving industry in the review of performance and technical requirements with a view to developing realistic, achievable specifications. There has also been considerable input from users. Tests and trials have been performed in all phases, and efforts have been made to freeze designs prior to going to contract.

Conclusion

2.8 This project has been at the forefront of successfully implementing new acquisition strategies including partnering with industry in the review and development of specifications.

Risk Assessment

2.9 In accordance with the new DMS process, all projects greater than \$30M must submit a Project Profile and Risk Assessment (PPRA). A PPRA dated 13 May 1996 was submitted for the CTS project and results are shown in Annex A. In general, a low risk was assigned due to the procurement strategy of purchasing COTS, or where COTS items were not suitable, non-development item military product purchases offshore.

2.10 Early in the project it became readily apparent that COTS items would not satisfy the rigorous military requirements. Consequently, all but one item are currently being developed, contributing to an increase in risk to cost and schedule. Recognizing this problem, the Project Management Office (PMO) advised the Senior Review Board (SRB) that it would conduct a project review prior to seeking approvals for the acquisition of those items not yet contracted for. To date neither the Project Charter nor the Project Profile and Risk Assessment (PPRA) have been updated to reflect this impact.

Conclusion

2.11 When the procurement strategy for this project shifted to development rather than COTS, the risk factors should have been reassessed. Acknowledgement of the development effort would have enabled identification of the potential impact on schedule, resource requirements, and risk. A revised risk management strategy could then have addressed these factors.

COST

2.12 Indicative estimates were optimistically based upon purchase of COTS items. At an SRB meeting in August, 1998 to consider endorsement for acquisition of the wet weather boot, the substantive price estimate of \$23.7M for the boot was 36 per cent higher than the indicative estimate of \$17.4M. The project staff added that the overall indicative estimate for the CTS project might rise from \$184M to \$229M, an increase of approximately \$44M or 24 per cent. The current status of cost estimates at Annex A shows some major increases in indicative estimates and some successes where actual, or anticipated, contract prices are lower than even the indicative estimates. The project staff, based on the knowledge gained of the industry, process, and refined requirements intend to review the indicative costs as part of a project review and revise the CTS synopsis sheet if necessary.

2.13 Costs have varied for a number of reasons. For example, when it was decided that COTS products were not suitable, it became necessary to initiate development and therefore potentially increase acquisition costs. This has yet to be confirmed as several buys have indeed resulted in lower than expected costs. However, potential cost increases associated with the load carriage equipment and fragmentation protection vest are so major that they overshadow the small gains on the price of other CTS items. The cost increase in acquisition of the IECS, from \$48M to \$56M was the result of a mistaken assumption about the use of government-supplied materials, the doubling of the quantity of fleece required due to an earlier clerical error, and potentially the restriction of several textiles to Canadian suppliers. PWGSC is investigating the pricing of the textiles to confirm their validity.

2.14 Other factors influencing costs for this project have included a lack of competition, more accurate labour and material cost estimates, the proprietary nature of some materials and the fact that the volume purchase of items has not provided the anticipated cost reductions. Further cost increases have been due to the extensive but essential tests and trials involved. An unforeseen factor was that contractor support was required over and above that provided from matrix staff and specialists at DCIEM.

2.15 A final factor influencing cost has been related to the distribution numbers and anticipated usage rates of the CTS items. When it was determined that the indicative estimate could be exceeded by 24 per cent, a strategy for reducing the distribution requirement was informally suggested to the SRB.

Conclusion

2.16 Cost estimates for this project have varied widely but the true extent will not be known until items go to contract. Costs are being influenced by the price of materials, the proprietary nature of some materials, clerical miscalculation, unforeseen test and evaluation, reduced competition and more accurate labour estimates. The distribution numbers and anticipated usage rates are also impacting cost. Where COTS acquisition is not appropriate, cost estimates, though indicative, must be derived from a realistic assessment of the procurement strategy and resultant costs associated with development of suitable products.

SCHEDULE

2.17 What began as a project to ensure delivery of all items by the year 2000 is now looking to have contracts in place in the year 2000, with delivery to follow. The switch in procurement strategy from COTS to development has added to the schedule, not only in terms of development time, but also in terms of test and evaluation. This has been necessary due to a learning curve in Canadian industry in producing clothing to a military requirement. In one instance, the inability of industry to deliver on the infra-red specification led to an extension in the bidding process. If there have been any time savings, it has been in following the new DMS process. There have, however, been some procurement process delays. It seems probable that the CTS project will require extension of two to three years.

Conclusion

2.18 Original assumptions such as that of purchasing COTS must be carefully and realistically reviewed. The review team feels that this project will extend at least two years beyond the year 2000 given the development, test and evaluation work remaining, the competitive procurement process, and realistic production time for the contracts.

PERFORMANCE

2.19 Clothing is very much a quality of life issue and has been a source of complaint among soldiers for years. To help correct the situation, CTS adopted a philosophy of striving for the 80 per cent solution. In CTS though, the 80 per cent solution has been interpreted to mean 80 per cent user satisfaction with the items being fielded; not a relaxation of some capability or requirement, as suggested in the Acquisition Reform Guide, article 3.10.3. It was pointed out to the CRS reviewers, that regardless of how much protection a piece of CTS equipment affords, if it is not comfortable or liked, the soldiers would not use it. Solicitation of user input through extensive and rigorous test and evaluation trials has resulted in development of requirements with user buy-in and gender integration. It has also resulted in the search for the best of materials, quality and design in order to ensure the achievement of this satisfaction. This approach has led to schedule slippage and potential increases in cost. The latter will not be known until contract deliveries commence.

Conclusion

2.20 Project staff are seeking products with optimal quality, materials and workmanship. Extensive and rigorous user test and evaluation trials are ensuring the requisite performance is being achieved. The CTS Project staff are cautioned though to be more careful with their use of the term “80 per cent solution” since in CTS it does not correspond to a reduction in technical capability but refers rather to user acceptance. Within the Department, stakeholders should uniformly apply the concept of the 80 per cent solution as it was intended; a relaxation of requirements.

COMMUNICATIONS STRATEGY

2.21 The project has engaged the services of Public Affairs and produces fact sheets on items about to be fielded. Although these fact sheets are distributed to all bases, the CRS team observed skepticism among field troops that the needed CTS items would soon be available. Unfortunately, early suggestions of completing the project by the year 2000 have raised expectations among soldiers. These expectations continue to be fuelled by inaccurate information about schedules and cost, which were still on the Internet/Intranet as late as November 1998.

Conclusion

2.22 Any communication strategy must consider what was said or written about delivery and attempt to portray the new realistic situation. This means information available through sources like the Internet/Intranet must be kept updated. We suggest intensification of efforts to inform troops on the status and progress of the CTS projects. Recognizing our soldiers’ dissatisfaction with delivery dates, it is likely that they would better understand delays caused by efforts to assure quality and soldier usability.

OTHER ISSUES

Canadian Temperate Disruptive Pattern (CADPAT)

2.23 DGLEPM is pursuing the development of a unique, camouflage, CADPAT design. Canadian industry though is on a learning curve in terms of printing the pattern due to the complexity of the design and the method of its application to each different fabric, to ensure durability, colourfastness and maintenance of infra-red characteristics over repeated usage and laundering.

2.24 In 1996, the Project Charter for CTS noted a decision not to implement CADPAT until introduction of a separate project called the Improved Protective Clothing and Equipment (IPCE). However, the IPCE project is being delayed, so the CTS products will be the baseline for a generation of soldiers. In January 1998, the CLS issued a directive that CADPAT would be incorporated into all clothing and equipment by 2005 but that he would not accept any significant cost increases or delays to the CTS project. Given that IECS was already well into the RFP stage when this decision took place, it was decided to procure the IECS system at a cost of \$56M, in monochrome olive green and to phase in CADPAT clothing through O&M buys under strict supply control. CLS recognized in his directive that this strategy could lead to soldiers dressed in a combination of CADPAT and olive drab clothing but was prepared to accept this mix.

2.25 In addition to providing a 45 per cent decrease in detection capability, CADPAT clothing is well liked by those who have seen the samples. This raises the possibility that once CADPAT becomes available through O&M, rather than have a mix and match combination, serviceable clothing may be prematurely discarded in favour of CADPAT clothing. We note, however, that the project plans to issue the fragmentation protection vest, load carriage system, and tactical assault vest in CADPAT, and that the combat hat procurement, though approved, has been delayed a year to permit the acquisition of the hat in CADPAT. These measures may, perhaps, mitigate the soldier's vulnerability, because these items are the most visible parts of a soldier's dress and equipment in the field.

Conclusion

2.26 The value of CADPAT was finally recognized in 1998 but perhaps too late to be placed on the IECS suite of clothing. When CADPAT is introduced through O&M, the concern is that serviceable clothing will be discarded in favour of the new patterned clothing.

PART III - RECOMMENDATIONS

3.1 The CF is obtaining kit for the soldiers that meets a demanding requirement and is capable of doing the jobs that they expect of it. Further, it has a unique Canadian signature. The CRS Review Team has one generic recommendation and four specific to the CTS project. It is recommend that:

- a. project staff be alert to the potential impact on risk and implementation that accompanies changing procurement strategies (e.g., switching from COTS to development), and respond to such changes with appropriate revision of risk assessment, cost, schedule and if necessary, performance requirements;
- b. the CTS Project staff be more careful with their use of the term “80 per cent solution” since in CTS it does not correspond to a reduction in technical capability but refers rather to user acceptance;
- c. the CTS communications strategy include periodic revision of information on the project web site;
- d. given the protective benefits of CADPAT and the probable long term use of the equipment being introduced, the project cost and schedule be revised to acknowledge the plan to issue the combat hat, fragmentation protection vest, tactical assault vest and load carriage equipment in CADPAT; and
- e. the CTS project staff urgently investigate options for application of CADPAT to a significant portion of the IECS combat trousers and combat jacket. It could perhaps be feasible that only the immediate needs of the field force be produced in monochrome olive green, with the remainder being produced in CADPAT.

MANAGEMENT RESPONSE

3.2 **Risk Assessment.** A reassessment of the risk factors will be done as part of the CTS project review process. The project review and the preparation of the associated revised decision documents will continue to be the main focus of the CTS project staff effort at this time. The Project Charter and the PPRA will be amended once the revised SS PPA for the Omnibus and the revised SS EPA for the individual items have been staffed for approval.

3.3 **Performance.** The CTS project team has always maintained and stated in briefings that the items must meet 100 per cent of the technical requirement (i.e., if it must provide level x of ballistic protection, then it must provide 100 per cent of x) and 80 per cent user acceptance. A relaxation of requirements was felt to be unacceptable, since casualties would result with less than a 100 per cent technical solution (i.e., for ballistic protection, thermal protection, waterproofness, etc).

3.4 **Communications Strategy.** The CTS project team agrees with the CRS view. Steps have been taken to ensure the Internet and Intranet sites are kept up to date.

3.5 **CADPAT.** The CTS project team shares the concern of the CRS review team and acknowledges the desirability of incorporating CADPAT in outer shell material of several of the IECS items. However, there is no evidence at this time that the technical capability to do so exists within Canadian industry. Unless this is resolved by Industry in the next few months, the best that can be done is to incorporate CADPAT into follow-on O&M IECS buys since the current IECS contract is nearly halfway through deliveries. It would be unacceptable and cost prohibitive to terminate the present IECS contract (and re-distribute the already-issued monochrome olive green IECS to field force units) in order to re-tender a contract in CADPAT at a later date to complete the requirement.

OVERVIEW CLOTHE THE SOLDIER PROJECT

ITEMS, RISK, COSTS AND STATUS - NOVEMBER 1998 (*Note 1*)

Item	Original Risk Assessment	PPA \$K BY Cost Est. (Indicative)	EPA \$K Est	Actual Cost \$K	Original Schedule EPA	Status
IECS (<i>Note 2</i>)	Low/Dev	50,053	59,258	63,420	Sep 96	Contract Jun 98
CWWG	Low/Dev	6,950	6,119	6,000	Mar 97	Contract Oct 98
Multi-Tool	Low/Cots	2,289	2,719	2,288	Jun 96	In-service
CWWB	Low/Cots	Xxxxxx	Xxxxxx		Sep 97	Awaiting EPA
Sock Syst.	Low/Cots	Xxxxxx			Dec 97	User Eval. 4 th Qtr 98
Ball. Eyewear	Low/Cots	Xxxxxx			Sep 97	EPA 4 th Qtr 98
TAV	Low-Med/Cots	Xxxxxx			Dec 97	User Acc. 3 rd Qtr 98
CVC Helmet	Low-Med/Cots-Dev	Xxxxxx			Sep 97	Development
WBC Cap	Low/Cots	Xxxxxx	Xxxxxx		Sep 97	Awaiting RFP
ITU	Low Cots	Xxxxxx			Nov 97	Awaiting EPA
ILTU	Low/Cots	8,651	6,170	3,500	Sep 97	Awaiting RFP
TCH	Low/Cots	Xxxxxx			Nov 97	HF Trial 3 rd Qtr 98
Ballistic Plate	Low/Cots	Xxxxxx			Sep 97	Spec. Stage
CVC Glove	Low/Cots	Xxxx			Nov 97	Spec. Stage
HWB	Low-Med/UOR	Xxxxxx			Dec 98	Definition
WWG Liner	Low/Cots	Xxxxxx			Dec 98	User Trial 4 th Qtr 98
Battle Pack	Med/Dev	Xxxxxx	Xxxxxxxxxx		Dec 98	HF Trial 3 rd Qtr 98
Rucksack	Med/Dev	Xxxxxx	Xxxxxxxxxx		Dec 98	HF Trial 3 rd Qtr 98
Ballistic Visor	Med/Dev	Xxxxxx			Jul 99	Development
Helmet liner	Low/Cots	Xxxxxx			Jul 99	User Trial 4 th Qtr 98
Frag Vest	Low-Med/Cots-Dev	Xxxxxx	Xxxxxxxxxx		Dec 98	HF Trial 3 rd Qtr 98
DCC	Med/Dev	Xxxxxx			Jul 99	Definition
Mortar Glove	Low/Cots	Xxxx			Jul 99	User Trial 3 rd Qtr 98
Overboot	Med/Dev	Xxxxxx			Jul 99	To Start

Notes: (1) All costs \$K BY excluding GST.

ATI Section 18 (b) (d)

(2) IECS - PPA/PDP approval received Jul 96 for \$50M at a cost of \$41.5M plus \$8.5M overhead, this approval preceded the achievement of PPA status for the Omnibus project. See also Annex B.

Comments:

Despite original intentions to buy COTS almost all items are under development or have undergone development. The introduction of development should have increased risk to medium or high. Each item was assigned a 10 per cent contingency regardless of risk, e.g., Multi-tool.

PM has projected a possible **Cost** increase of \$44M to the indicative estimate of \$183M.

Schedule – The schedule targeted “in-service” status in the year 2000. It is projected that rather than delivery in the year 2000 the achievement of the contracting stage is more likely.

LIST OF ACRONYMS

ABCA	American, British, Canadian, Australian
Ball.	Ballistic (used in conjunction with eyewear and visor)
CADPAT	Canadian Temperate Disruptive Pattern
CF	Canadian Forces
CFB	Canadian Forces Base
CLS	Chief Land Staff
COTS	Commercial off the Shelf
CRS	Chief Review Services
CTS	Clothe the Soldier
CVC	Combat Vehicle Crew (used in conjunction with gloves and helmet)
CWWB	Cold Wet Weather Boot (actually being produced as a wet weather boot)
CWWG	Cold Wet Weather Glove
DCC	Desert Combat Clothing and Equipment
DCIEM	Defence and Civil Institute of Environmental Medecine
DGLFD	Director General Land Force Development
DMS	Defence Management System
EPA	Effective Project Approval
Frag Vest	Fragmentation Protection Vest
HF	Human Factors
HWB	Hot Weather Boot
Mortar Glove	Mortarman's Glove
PPA	Preliminary Project Approval
IECS	Improved Environmental Clothing System, consisting of inner layer of heavy fleece pants and jacket, intermediate layer of pants and jacket outer wear (with waterproof vapour permeable membrane), and outer layer of parka and bib overall for extreme cold)
ILTU	Improved Lightweight Thermal Underwear
IPCE	Integrated Protective Clothing and Equipment (a project of the future)
IR	Infra-red
ITU	Improved Temperate Underwear
MR	Miscellaneous Requirement
NATO	North Atlantic Treaty Organization
O&M	Operations and Maintenance
Overboot	Multi-overboot to replace deficient combat and Nuclear, Biological, Chemical Overboots
PDP	Program Development Proposal
PPRA	Project Profile and Risk Assessment
RFP	Request for Proposal
SPAC	Senior Project Advisory Committee (Interdepartmental Body)

Spec	Specification
SRB	Senior Review Board (DND Body)
SS	Synopsis Sheet
TAV	Tactical Assault Vest (replaces load carriage webbing)
TCH	Temperate Combat Handwear (i.e., combat glove)
T&E	Test and Evaluation
UN	United Nations
UOR	Unforecast or Urgent Operational Requirement
WBCC	Wide Brim Combat Cap