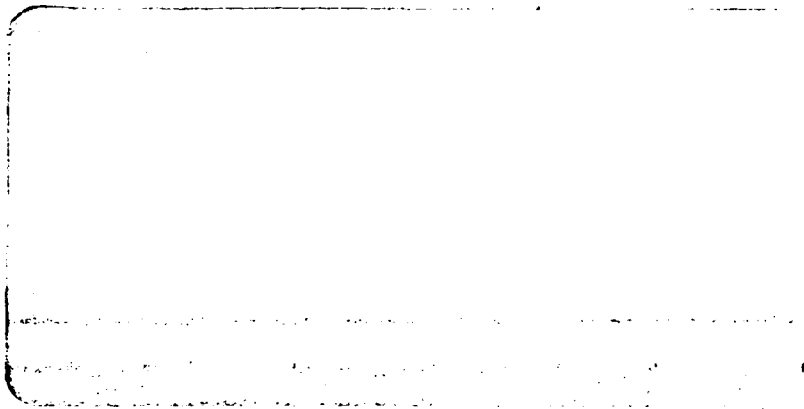


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TECHNICAL REPORT

For The

Cargo Movement Operations System (CMOS)

Functional Comparison Between the Cargo Movement Operations
System and the Consolidated Aerial Port Subsystems

30 August 1989

Prepared under

Contract Number F11624-88-D-0001/~~6112~~
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Section I

1. Introduction

a. ⁴ The purpose of this technical report is to identify functional performance requirements common to both the Consolidated Aerial Port Subsystems (CAPS) and the Cargo Movement Operations System (CMOS). The report primarily focuses on examining the functional processes of both systems. A pertinent by-product of this effort is some comparison and contrasting information about the data elements within the processes. The CMOS Division furnished the following programmatic documentation which form the basis for the conclusions presented here:

- (1) Remote CAPS (RCAPS) Functional Description, 14 Feb 89
- (2) RCAPS Cargo Users Manual, undated
- (3) RCAPS Passenger Users Manual, 1 Jul 89
- (4) CMOS System Segment Specification (SSS) Increment I, undated
- (5) CMOS SSS Increment II, 3 Oct 88
- (6) Computer Aided Load Manifesting Users Manual/ Operation Manual, AFM 28 - 346 (change 3), 1 Apr 88

b. This technical report is based on four assumptions. First, RCAPS provides all the functionality of CAPS. Second, all references in RCAPS to non-electronic communications are actually on-line transmissions. Third, the full requirements of CMOS are contained in the specifications. Finally, although the CMOS specifications are ambiguous regarding the accessibility of specific software applications across the network, we assumed the routines are available to all system PCs.

2. Summary

a. The Consolidated Aerial Port Subsystems and the Cargo Movement Operations System employ similar methods and procedures for handling cargo. CAPS collects data and generates documentation for cargo accountability, manifesting, visibility, workload analysis, movement reporting, and Airlift Service Industrial Fund (ASIF) billing.

CMOS will capture data and produce documentation for the same purposes, with the exception of ASIF billing. Both furnish statistical data and summary reports for the Military Traffic Management Command, the sponsoring services, and major command managers for operational uses and historical analyses. The organizational structure for CAPS and CMOS is comprised of the following functions:

CAPS

- Surface Receiving
- Cargo Processing
- Load Planning
- Air Terminating Cargo Processing
- Surface Outbound

CMOS

- Surface Freight Inbound
- Air Freight Outbound
- Shipment/Load Planning
- Air Freight Inbound
- Surface Freight Outbound

Despite variations in terminology and system specific reports, the top-level processes of CAPS and CMOS, shown above, have a great deal in common. A summary review of the processes reveals areas of uniformity and disparity. Where the processes differ, the necessary data elements often appear to be available and a manipulation could resolve the disconnect.

(1) Surface Receiving (CAPS) and Surface Freight Inbound (CMOS). Both systems rely on prepositioned movement data to incheck incoming surface cargo. Since all surface cargo arriving at the aerial port is entering the airlift system, the Advance Transportation Control and Movement Document (ATCMD) is the sole document used. CMOS employs several other movement documents. Both systems extract the Transportation Control Number (TCN) from the movement document to create a record if no advance is on file. The systems also capture/track the same information during incheck, including: date/time of arrival; piece; weight; cube; overages and shortages; frustrations; and storage locations. The main distinction in this process is that all surface inbound cargo entering CAPS departs by air. In CMOS, inbound surface cargo will more likely be turned over to the ultimate consignee.

(2) Cargo Processing (CAPS) and Air Freight Outbound (CMOS). CAPS inchecks/updates air outbound cargo against the Transportation Control and Movement Document (TCMD) and associated TCN records while CMOS uses the TCN, but can access a TCMD. Once cargo is received, both systems create pallet headers, support the pallet buildup process, and produce pallet listings. There are two differences in the final stages of moving air cargo. In CAPS, shipment consolidating and splitting is done in Air Freight; conversely, Shipment Planning and Packing and Crating will handle this process in CMOS.

(3) Load Planning (CAPS) and Shipment/Load Planning (CMOS). The Shipment Planning/Load Planning processes of CMOS will be more comprehensive than the load planning function in CAPS. In CAPS, load planning is limited to selecting cargo pallets for aircraft loading, updating cargo records, producing air manifests, and sending manifests station to station. CMOS Shipment Planning will select modes and route all cargo for air and surface movement, generate TCMDs, consolidate shipments, reroute intransit cargo, and update Standing Routing Orders, Domestic Routing Orders, and Export Traffic Releases. Additionally, CMOS will automatically produce load plans for all transportation modes. On-line access to load planning activity will also be available to CMOS managers.

(4) Air Terminating Cargo Processing (CAPS) and Air Freight Inbound (CMOS). Air cargo is inchecked by CAPS and CMOS using prepositioned movement data. After receipting for the shipment, both systems automatically capture data relative to pallet breakdown, identify overages/shortages, permit cargo to be placed in frustrated files, assign storage locations, and select onward modes. Because of the heavy volume of throughload cargo, CAPS has provisions to move "intact" pallets. CMOS will need to offer the same capability. Most CMOS air inbound cargo will terminate and be turned over to the consignee, whereas, CAPS terminates, reoriginates, or changes modes for its air inbound cargo. The air inbound cargo process is also marked by a contrast in records and reports that the two systems generate.

(5) Surface Outbound (CAPS) and Surface Freight Outbound (CMOS). Both outbound surface functions rely on preloaded

cargo records for cargo selection, as well as the preparation and generation of movement documentation. The CAPS surface outbound cargo enters the port as air inbound cargo while in CMOS, this cargo primarily originates in the base-level supply activity. For cargo sourced from the Standard Base Supply System, the Packing and Crating function will do the CMOS inchecking, create the shipment record, print the military shipping label/special handling certification, and forward the documentation to surface freight. Another distinction is in the area of reports. CAPS reports are mainly produced for local and command port management purposes. CMOS reports will be provided for outside agencies.

b. The parallelism of CAPS/CMOS processes, which are associated with cargo movement, is not replicated in the passenger arena. The CMOS passenger functions do not measure up to the capabilities of MAC's Passenger Automated Check-In System and the Passenger Reservation and Manifesting System. The deficiencies are evident in the absence of passenger detail in the CMOS System Segment Specification (SSS) for Increment II. The document is built around OPLAN directed unit moves as outlined in AFR 28-4. Missing from the AFR 28-4 requirements are provisions to manage passenger movement on MAC Contract Commercial and organic airlift. The CMOS SSS for Increment II will need substantial elaboration to accommodate passenger booking and the documentation/processing associated with space required and space available travel.

3. Conclusions

The CAPS performance requirements represent the baseline for this technical report. As the Section I summary concluded, the functional processes in CAPS and CMOS, e.g., cargo receipting, inchecking and processing, as well as document generation and lift reporting, generally mirror each other. However, like the passenger area, there are some additional requirements worth exploring. These requirements are revealed in Section II and are furnished for further review and consideration.

The far left column of Section II shows the CAPS requirement. If the requirement is fulfilled in CMOS, the next column

marked "CMOS Requirement" reflects the applicable CMOS requirement and references. If the CAPS requirement is not met in CMOS, a response is found in the column marked "No Requirement But Worth Exploring" or the "No Requirement" column, as appropriate. The results by category follow:

<u>CATEGORY</u>	<u>NUMBER</u>	
CAPS Cargo Performance Requirements	86	
CAPS Cargo Requirements Met By CMOS		59
CAPS Cargo Requirements Not Met By CMOS But Worth Exploring		24
CAPS Cargo Requirements Not Met By CMOS		3
TOTAL	86	86
CAPS Passenger Performance Requirements	34	
CAPS Passenger Requirements Met By CMOS		10
CAPS Passenger Requirements Not Met By CMOS But Worth Exploring		21
CAPS Passenger Requirements Not Met By CMOS		3
TOTAL	34	34

Section II

General: A line item summary of the results is contained in the following pages:

C A P S C A R G O	Reference:	Requirement:	C M O S C A R G O	C M O S C A R G O	C M O S C A R G O	C M O S C A R G O
<p>Requirement: 1. Input ATCMD data directly to the central port microcomputers.</p>	<p>Reference: RCAPS FD 3.1 b (1)</p>	<p>For international air export cargo, ATCMD data will be sent from CMOS stations originating a cargo movement to the CMOS station collocated with the appropriate ACA. The ACA will send the cleared ATCMD data to CAPS.</p>	<p>Reference: CMOS SSS INC I 3.2.1.2.5.2.2</p>	<p>No Requirement But Worth Exploring:</p>	<p>Reference:</p>	<p>No Requirement:</p>
<p>2. Capture carrier identification, trailer number, GBL/CBL number, truck arrival time, and offload crew chief name for trucks arriving at the ports.</p>	<p>3.1 b (2)</p>	<p>CMOS' Electronic Data Interchange capability will furnish advanced shipment data to identify commercial carriers.</p> <p>Trailer and GBL/CBL numbers will be part of the shipment record.</p> <p>Each TCN will be assigned a date/time received. The checker must enter a user I.D.</p>	<p>CMOS SSS INC II 6.1.1.2c</p>			
<p>3. Capture TCNs from truck documentation via manual input or diskettes.</p>	<p>3.1 b (3)</p>	<p>The TCN and piece number will be captured by keyed entry (hand-held terminal) if no bar coded label is affixed or the bar code is illegible.</p> <p>The capability will exist to incheck cargo at the PC workstation.</p>	<p>INC I 3.2.1.2.4.2.3 3.2.1.2.4.2.5</p>			
<p>4. Capture TCN and piece number.</p>	<p>3.1 b (4)</p>	<p>See 3 above.</p>	<p>3.2.1.2.4.2.5</p>			
<p>5. Verify the piece weight and cube after matching other inputs on the label.</p>	<p>3.1 b (5)</p>	<p>When inchecking is complete, the handheld terminal (HHT) will compare the actual number of pieces received for each TCN against the total number of pieces in the prepositioned movement document.</p>	<p>3.2.1.2.4.2.6</p>			
<p>6. Enter shipment data for each shipment which had no ATCMD on file and notify the ACA that no ATCMD was on file and the TCMD was not cleared.</p>	<p>3.1 b (6)</p>	<p>During cargo incheck, the HHT will scan the bar coded shipping label (TCN, piece number) and automatically assign a date/time received for each TCN.</p>	<p>3.2.1.2.4.2.5</p>			
<p>7. Update the cargo record to show that the piece is inchecked.</p>	<p>3.1 b (7)</p>	<p>Subsequent pieces of a shipment will be inchecked as in 7 above.</p>	<p>3.2.1.2.4.2.5</p>			
<p>8. Enter the TCN, piece number, weight, and cube of a second or subsequent piece of a shipment inchecked after piece control procedures have been initiated.</p>	<p>3.1 b (8)</p>					

CMOS is a communications pass through of ATCMD data for the ACA to determine air eligibility. The data elements will be present but the process will have to be redefined.

C A P S C A R G O		C M O S C A R G O		C M O S C A R G O		C M O S C A R G O	
Requirement:	Reference:	Requirement:	Reference:	No Requirement But Worth Exploring:	Reference:	No Requirement:	
9. Update cargo record to show that the piece is intransited or processed.	3.1 b (9)	During incheck, cargo will be placed in a frustrated file, if appropriate.	CMOS SSS Inc. 1 3.2.1.2.4.2.5				
10. Update record to show where cargo will be bayed.	3.1 b (10)	The terms bay location (ADAM III) and warehouse storage location are interchangeable. The HHT operator can update the TCN record with the warehouse storage location.	3.2.1.- 2.3.3.2a				
11. Verify input and changes in trailer records for special handling cargo. By inputting the TCN and piece number, all trailer records for that shipment will be displayed.	3.1 b (11)			For shipments requiring a TCMD, CMOS will prepare the document/trailers. Trailers are required for hazardous materials, therefore the verification of these records is inferred though not stated.	3.2.1.2.2.3.6 3.2.1.2.2.3.9		
12. Allow input/update of a load and storage group for special handling cargo.	3.1 b (12)	CMOS will have the capability to enter/update hazardous material and information necessary to complete DD Form 1387-2.	3.2.1.- 2.1.3.11				
13. Display the following data elements from the ATCMD for verification against the shipping label: Commodity/special handling code; Required Delivery Date (RDD); Project Code; Transportation priority; APOD; Consignee; Total pieces; Weight; and Cube.				No reference to this process. The data elements will be resident in the CMOS data base and a call up routine could be written for display/verification.			
14. Provide an output to the printer for each truck processed. The output will contain TCMD data for all pieces in-checked on that truck, the total number of pieces inchecked or frustrated, and the total weight of those shipments.	3.1 b (14)	CMOS will print hard copy TCMDs. Specific references point to surface export and air export but the data is available for surface inbound.	3.2.1.2.2.3.9 3.2.1.2.5.2				
15. Display all trailer records for special handling cargo on the micro-computer.	3.1 b (15)			Display of the special handling trailer records is inferred, but not stated.	3.2.1.2.2.3.6 3.2.1.2.2.3.9		
16. Provide a format for special handling cargo that requires additional trailer records to be added.	3.1 b (16)			Additions to the special handling trailer records are inferred, but not stated.	3.2.1.2.2.3.6 3.2.1.2.2.3.9		
17. Update of any data field of the TCMD except receipt time, TCN and TAC.	3.1 b (17)			See #15 and 16 above	3.2.1.2.2.3.6 3.2.1.2.2.3.9		
18. Allow deletion of cargo from the data base with a valid reason code.	3.1 b (18)	TCNs can be deleted from pallets by using HHT and/or PC workstation.	3.2.1.2.3. 3.5.2a b				

C A P S C A R G O		C M O S C A R G O		C M O S C A R G O		C M O S C A R G O	
Requirement:	Reference:	Requirement:	Reference:	No Requirement But Worth Exploring:	Reference:	No Requirement:	
19. Allow the request of the status of any item in the port.	RCAPS FD 3.1 b (19)	Provide a list of all unmanifested shipments, list all shipments awaiting processing by Shipment Planning and provide a screen list of all shipments.	3.2.1.2.3.3.3 3.2.1.2.2.3.2 3.2.1.2. 1.3.10.1				
20. Allow the query of cargo by channel, priority, bay location, or any combination of these items.	3.1 b (20)	The unmanifested shipment list will be sequenced by cargo warehouse location, destination, port of debarkation DODAAC, or priority. The shipments awaiting processing will be displayed by destination DODAAC, priority, condition code, land/or warehouse location.	3.2.1.2.2.3.2 3.2.1.2.3.3.3				
21. Produce a listing of unused module ID's.	3.1 b (21)						MAC: unique.
22. Capture the module ID and destination before placing cargo on the pallet. As each item is placed on the pallet, the TCN and piece number will be entered manually.	3.1 b (22)	CMOS will create a pallet header and pallet identifier before beginning pallet buildup. The pallet header contains the consignee DODAAC. As each piece of cargo is placed on the pallet, the HHT scanner will capture the TCN and piece number. TCNs can be selected for inclusion on the pallet via the PC workstation.	3.2.1.2. 3.3.5.1				
23. Capture the required data to complete final configuration after all pieces have been placed on the pallet.	3.1 b (23)	When pallet buildup is complete, the pieces, weight and cube will be totaled and entered on the pallet header.	3.2.1.2. 3.3.5.2c				
24. Display an incompatibility warning when it is determined the piece is incompatible with other pieces of cargo on the pallet (AW AFR 71-4. An override capability must also exist).	3.1 b (24)	Incompatible hazardous cargo will be displayed at the load planners PC workstation.	CMOS SSS Inc. 113.2.1.2.5				
25. Change the pallet completion date when the pallet is altered in any way.	3.1 b (25)	CMOS will automatically change the date and time in the appropriate record when an entry is made.	3.2.1.2. 3.3.2a & b				
26. Allow a change to the pallet header record.	3.1 b (26)	Using the HHT or the PC workstation, TCNs can be deleted from a pallet with the TCN record and the pallet header updated.	3.2.1.2. 3.3.5.2a & b				
27. Produce a list of loose cargo in the terminal by channel, priority, bay location or any combination of these items.	3.1 b (27)	CMOS will provide a list of all unmanifested shipments sequenced by cargo warehouse location, port of debarkation, destination DODAAC, or priority.	3.2.1.2.3.3.3				

C A P S C A R G O		C M O S C A R G O		C M O S C A R G O		C M O S C A R G O	
Requirement:	Reference:	Requirement:	Reference:	No Requirement But Worth Exploring:	Reference:	No Requirement:	MAC unique.
28. Display a warning when cargo being palletized is not included in the Management Action Indicator (MAI) grouping for that destination. An override capability must exist.	3.1 b (28)						
29. Produce a final pallet content listing and a listing identifying weights.	3.1 b (29)	A Pallet inventory, with identifying weights, is printed.	3.2.1.2- 3.3.5.2c				
30. Produce an inventory of all receipted cargo and a total pieces, weight, and cube for any destination.	3.1 b (30)			No reference.			
31. Produce a pre-manifest of movement ready pallets and loose cargo for any given destination(s) to include up to ten destinations.	3.1 b (31)			No reference. The data is available after items are selected for a particular manifest.			
32. Update a load plan after the load is sequenced.	3.1 b (32)	CMOS will provide the capability to automatically adjust load plans based on revised information input from the HHT or PC.	CMOS SSS Inc 113.2.1.2.5				
33. Update the load to add/delete pallets or loose shipments from a load plan.	3.1 b (33)	CMOS will be able to delete/change pallets or loose cargo.	CALM Users Manual 6.4				
34. Produce a CRT mask for the input of mission and manifest header information.	3.1 b (34)	CMOS will automatically update the manifest header information.	3.2.1.2- 3.3.7.2				
35. Recall a particular load by inputting the chalk number.	3.1 b (35)	A load can be released from the chalk file by using the chalk options.	CALM Users Manual 6.5				
36. Produce an air outbound load pull sheet.	3.1 b (36)			No reference. Serves as a pre-manifest for load teams.			
37. Update manifest header, data except manifest number/reference.	3.1 b (37)	The manifest header information can be updated with changes to the piece, weight and cube.	3.2.1.2- 3.3.7.2				
38. Produce a manifest listing after all cargo has been attached.	3.1 b (38)	A cargo manifest will be produced.	3.2.1.2- 3.3.7.3				
39. Allow the addition of manifest references to an existing chalk number.	3.1 b (39)	Manifest references can be assigned to a manifest header.	3.2.1.2- 3.3.7.2				
40. Automatically assign manifest references and numbers.	3.1 b (40)	CMOS will automatically assign manifest references and numbers.	3.2.1.2- 3.3.7.2				

C A P S C A R G O		C M O S C A R G O		C M O S C A R C O		C M O S C A R G O	
Requirement:	Reference:	Requirement:	Reference:	No Requirement But Worth Exploring: Capability exists for CMOS to generate '560' abort mission transaction for MAC CMOS stations. Feature would be useful for missions moving between CMOS stations.	Reference: CMOS-MAC EIRD 3.2.1.2.2.8/2	No Requirement:	
41. Allow abort mission and relief capability.	RCAPSFD 3.1 b (41)						
42. Allow update of mission departure time.	3.1 b (42)	All cargo movement records will automatically be updated.	3.2.1.2. 3.3.7.2				
43. Display cargo selected for a load with total weight of the load.	3.1 b (43)	CMOS will display cargo selected for a load and the total weight of the load.	CALM Users Manual 7.3.2.1				
44. Display an incompatibility warning for hazardous cargo on a selected load.	3.1 b (44)			Incompatible hazardous cargo will be displayed at the load planners' PC. This could be shown as a warning.	CMOS SSS Inc. II 3.2.1.2.5		
45. Produce all manifests formatted IAW DODR 4500.32.	3.1 b (45)	All manifests will be formatted IAW DODR 4500.32.					
46. Allow for input via diskette of manifest data for missions arriving from non-mechanized stations, ADAM III ports and other RCAPS sites.	3.1 b (46)	CMOS will be able to receive Advance Manifest data sent from the shipping base via floppy diskette.	3.2.1.1.4				
47. Display of manifests prior to aircraft arrival for possible actions, deletions or corrections.	3.1 b (47)	CMOS will display all due-in manifests chronologically.	3.2.1.2.3.2.2				
48. Input and update of arrival date/time for each inbound mission.	3.1 b (48)	Inbound missions will be displayed by estimated time of arrival with the capability to update the date/time.	3.2.1.2.3.2.2				
49. Assign a projected location for all palletized and loose cargo on a terminal manifest review.	3.1 b (49)			No reference for assigning projected location to inbound terminating cargo. The Air Freight function has the capability to assign a warehouse location when inchecking outbound cargo.	3.2.1.2. 3.3.2a & b		
50. Input of all data for overshipments to include inbound manifest data.	3.1 b (50)	The inbound manifest data is pre-positioned in CMOS. After completing the incheck, if a shortage has occurred, the HHT will display a list of the shorted TCNs.	3.2.1.2.3.2.6				
51. Move pallets intact by surface or air.	3.1 b (51)			No reference to throughput pallets processed "intact". To avoid breaking down pallets to capture multiple TCNs in the pallet, a bar coded pallet identifier with a lead TCN could be pursued.			

C A P S C A R G O		C M O S C A R G O		C M O S C A R G O		C M O S C A R G O	
Requirement:	Reference:	Requirement:	Reference:	No Requirement But Worth Exploring:	Reference:	No Requirement:	No Requirement:
52. Allow a location to be assigned when consignee is not found.	RCAPS FD 3.1 b (52)			See #49 above.			
53. Update the consignee file.	3.1 b (53)	When the shipment(s) are received by the ultimate consignee, CMOS will update the TCN Record with the date/time received by Air Freight/ultimate consignee.	3.2.1.2.3.2.8 a				
54. Produce a listing of all inbound pallets and loose cargo TCMD records which have not been inchecked.	3.1 b (54)			No reference. CMOS will produce an advance manifest file showing the pallet I.D., TCN, and piece number for inbound missions.	3.2.1.2.3.2.4		
55. Provide an onward mode choice block for each pallet.	3.1 b (55)	CMOS will select the onward mode for air inbound cargo.	3.2.1.2.4.4				
56. Provide a display indicating bay location/grnd location for loose/palletized cargo.	3.1 b (56)			See #49 above.			
57. Provide a warning display that the cargo attempted to be inchecked is not on file and is considered an over-shipment.	3.1 b (57)	If an overage occurs, the HHT will notify the operator.	3.2.1.2.3.2.6				
58. Select all cargo for surface movement by consignee, truck route or bay location.	3.1 b (58)	CMOS will provide a TCN backlog listing showing all TCNs awaiting processing, sequenced by cargo warehouse location, destination DODAAC, transportation priority and/or planned mode of shipment. CMOS will be able to view all Domestic Route Order/Export Traffic Release information.	3.2.1.2.- 4.3.10 3.2.1.2.- 4.3.14				
59. Assign cargo for each stop on the truck destination.	3.1 b (59)			CMOS will request a carrier selection listing by entering the appropriate mode code and/or destination. The capability to manifest cargo to multiple destinations on a truck route is not explicitly stated.			
60. Update/add/delete cargo from each stop.	3.1 b (60)			See #59 above.			
61. Automatically assign a manifest number/reference to each stop.	3.1 b (61)			See #59 above.			
62. Print truck manifest listing.	3.1 b (62)	CMOS will print a listing of all finalized movement documents.	3.2.1.- 2.4.3.18				
63. Request status of all trucks/stops.	3.1 b (63)			No reference. Mandatory enroute reporting or ad hoc query capability would be beneficial.			

C A P S C A R G O		C M O S C A R G O		C M O S C A R G O		C M O S C A R G O	
Requirement:	Reference:	Requirement:	Reference:	No Requirement But Worth Exploring:	Reference:	No Requirement:	
64. Assign departure time to all trucks.	PCAPS FD 3.1 b (64)	The date/time of shipment departure will be entered to update the TCN and Movement Document Records.	3.2.1.- 2.4.3.18				
65. Produce truck manifests IAW DODR 4500.32.	3.1 b (65)	All manifests will be formatted IAW DODR 4500.32R.	3.2.1.2.- 4.3.14				
66. Produce a load pull sheet for the truck prior to departure.	3.1 b (66)	The Surface Freight function has the capability to produce numerous shipment records including advanced truck manifests and TCN records. These should provide data comparable to a load pull sheet.	3.2.1.2.- 4.3.19f				
67. Provide IDC data to CDCP via diskette.	3.1 b (67)	CMOS will automatically format and electronically transmit IDC records to the CDCP.	3.2.1.2.- 4.3.19e				
68. Allow for the automatic time generation of reports.	3.1 b (68)	CMOS will generate reports automatically on a user-determined time basis.	3.2.1.1.8				
69. Allow for online query of the on-hand data base.	3.1 b (69)	Each functional PC workstation will be able to query the central data base to download any information that it needs to perform its function.	3.2.1.1.3.1				
70. Provide reports from the local data base to:	3.1 b (70)	All information that will be in a report format and output from the CMOS data base will be controlled through the Reports Processing Function.	3.2.1.1.8				
a. Manage over and short shipment files.		a. The Over/Short Shipment Information Reports will automatically create over/short shipment reports.	3.2.1.1.8.3				
b. Manage the consignee file.		b. CMOS will establish, maintain and edit a Consignee Record for each destination DODAAC.	3.2.1.1.1.25				
c. Provide summary of advances on file.		c. CMOS will maintain an Advance Manifest file.	3.2.1.1.1.19				
d. Provide pallet summary.		d. CMOS will provide a Pallet Inventory for individual pallets and a list of all unmanifested TCNs and pallet headers.	3.2.1.2.- 3.3.5.2.c 3.2.1.2.3.3.6				
e. Provide loose cargo summary.		e. CMOS will provide a list of all unmanifested shipments.	3.2.1.2.3.3.3				
f. Provide summary of unchanged cargo status.				No specific reference.			

C A P S C A R G O		C M O S C A R G O		C M O S C A R G O		C M O S C A R G O	
Requirement:	Reference:	Requirement:	Reference:	No Requirement But Worth Exploring:	Reference:	No Requirement:	
g. Provide frustrated cargo listing.	HCAPS FD	g. The Frustrated Cargo Record will establish, maintain and edit information on frustrated shipments.	3.2.1.1.1.29				
h. Provide high priority cargo summary.				h. A summary of high priority cargo awaiting processing/movement would be a useful tool.			
i. Provide port summary by destination.				i. The value of this report is directly proportional to the workload level at the installation. The higher the volume the greater the utility.			
j. Provide detail listing selected by port hold or system entry times, consignee, TAC or project code, commodity code/special handling code, and bay location.				j. The Shipment Inquiry Information Report provides the capability to inquiry by document number or TCN and to determine cargo age at any point in processing for comparison against both UMMIPS and MAJCOM unique standards for transportation processing/hold times. Port hold time and SET are not addressed in CMOS. The remaining data elements could be retrievable through ad hoc data base inquiry.	3.2.1.1.8.1		
71. Generate daily cargo on-hand and movement data on diskette for local use.	3.1 b (71)	The Shipment Inquiry Information Reports function provides the capability to query the data base for all shipments processed (in and out). Inquiries can be made against the document number or TCN. The ad hoc reporting capability would permit the tailoring of the information to produce a cargo on-hand backlog report.	3.2.1.1.8.1				
72. Provide automated facility to produce over and short shipment messages	3.1 b (72)	The Over/Short Shipment Reports are generated automatically.	3.2.1.1.8.3				
73. Provide a means to control access to the system via inspector codes.	3.1 b (73)	CMOS will require users to log onto the system by identifying their user identification/password and functional identification (work center). A password protected file will be used to prevent unauthorized access. The System Administrator will maintain the file.	3.3.9.1				
74. Provide ability to update the inspector codes.	3.1 b (74)	The System Administrator will be able to update the password file.	3.3.9.1				
75. Generate ASIF data on diskette for forwarding to RTDPC.	3.1 b (75)						MAC Unique

C A P S C A R G O	C M O S C A R G O		C M O S C A R G O		C M O S C A R G O	
Requirement:	Reference:	Requirement:	Reference:	No Requirement But Worth Exploring:	Reference:	No Requirement:
76. Generate daily detail air and surface movement listings for tracing capability.	RCAPS FD 3.1 b (76)	The Shipping Document Register provides information for all inbound/outbound shipping documents and non-MILSTRIP TCNs.	3.2.1.1.8.2			
77. All incoming data will be edited prior to processing.	3.1 b (77)	CMOS will perform edits of data entering and leaving the data base.	3.2.1f			

CAPS PASSENGER	Reference:	Requirement:	CMOS PASSENGER	Reference:	CMOS PASSENGER	CMOS PASSENGER
Requirement:	Reference:	Requirement:	CMOS PASSENGER	Reference:	CMOS PASSENGER	CMOS PASSENGER
1. Input of pre-manifest flight data received from PRAMS via diskette or manually.	3.1 a (1)			Reference: CMOSSSS Inc II External Interface Requirements Data Pg. 3.	Reference: CMOSSSS Inc II External Interface Requirements Data Pg. 3.	No Requirement:
2. Pre-manifest update:	3.1 a (2)					
a. Add space required (S/R) and space available (S/A) passengers.						a. No reference.
b. Cancel pre-manifested passengers.						b. No reference.
c. Exchange booked/overbooked passengers.						c. No reference.
d. Selectively transfer S/A and S/R passengers to appropriate mission.						d. No reference.
e. Adjust Allowable Cabin Load (ACL).		e. CMOS will automatically adjust load plans based on new information from the passenger terminal PC or HHT. From this information, the load planner will verify/adjust the allowable load.	CMOSSSS Inc. II 3.2.1.2.5			
f. Add/delete a channel.						f. No reference.
3. Produce pre-manifest listing.	3.1 a (3)					See #1 above.
4. Create and update unprogrammed flights.	3.1 a (4)					CMOS will be able to receive the lift schedule from COMPES for Plan directed mobilities. The same screens could be modified to accept unprogrammed flights for non-mobility missions.
5. Use formatted displays for processing of passengers.	3.1 a (5)	CMOS will provide formatted displays for processing passengers.	3.2.1.2.8.1			
6. Capture and validate passenger data.	3.1 a (6)	CMOS will capture and validate passenger data.				
a. Body weight.		a. Body weight.		3.2.1.2.8.1		
b. Baggage weight to determine excess		b. Baggage weight to determine excess.		3.2.1.2.8.1		
c. Meal preference.						c. No reference.
7. Capture and validate ASiF data; MTA data; CIC numbers; Billing address when no CIC is available.	3.1 a (7)					MAC unique.

CAPS PASSENGER		CMOS PASSENGER		CMOS PASSENGER		CMOS PASSENGER	
Requirement:	Reference:	Requirement:	Reference:	No Requirement But Worth Exploring:	Reference:	No Requirement:	
8. Provide accumulative baggage and passenger weight.	3.1 a (8)	8. CMOS will provide cumulative baggage and passenger weight.	CMOS SSS Inc II 3.2.1.2.8.1	No reference. CMOS SSS Inc II does not go to this level of detail.			
9. Provide number of booked and overbooked passengers checked-in.	3.1 a (9)			See #9 above.			
10. Provide number of unfilled seats remaining on the aircraft.	3.1 a (10)			See #9 above.			
11. Provide seat balance by channel.	3.1 a (11)			See #9 above.			
12. Provide a meal summary by type.	3.1 a (12)			See #9 above.			
13. Produce boarding manifests.	3.1 a (13)	CMOS will provide an aircraft manifest.	3.2.1.2.8.1				
a. List passengers by channel.				a. See #9 above.			
b. Provide summary of passenger and baggage weights.		CMOS will provide summary passenger and baggage weights.	3.2.1.2.8.1				MAC unique.
14. Provide capability to change passenger and flight records.	3.1 a (14)	The Passenger Terminal function will be able to update the planned manifest and make entries to the passenger records.	3.2.1.2.8.1				
15. Produce and update ASF manifests.	3.1 a (15)			No reference.			
16. Provide flight summary data.	3.1 a (16)			No reference.			
17. Generate passenger no-show list.	3.1 a (17)						
18. Provide down-line information to connecting channels on a flight pertaining to passengers requiring special attention, passengers with connecting flights and total mission summary.	3.1 a (18)			No reference to specific passenger information. CMOS will provide advanced shipping information (load plans & manifests) to enroute locations and the destination.	3.2.1.2.13 3.2.1.2.14.1		
19. Provide PRAMS data and ASIF manifests to the RTDPC for update to ASF and PRAMS computer systems.	3.1 a (19)						
20. Provide S/A register, and backlog summary.	3.1 a (20)			No reference.			
21. Provide S/R register and daily summary.	3.1 a (21)			No reference.			
22. Produce required local management reports.	3.1 a (22)	The Reports Processing function will accommodate local managements reports.	3.2.1.1.2				
23. Include backup and restart capability.	3.1 a (23)	CMOS will have restart and recovery capability.	3.2.1.1.1 Inc I 3.2.4.1 3.2.4.2b				

CAPSPASSENGER		CMOSPASSENGER		CMOSPASSENGER		CMOSPASSENGER	
Requirement:	Reference:	Requirement:	Reference:	No Requirement But Worth Exploring:	Reference:	No Requirement:	
24. Reconstruct passenger statistical data.	3.1 a (24)			No Requirement No reference.		No Requirement:	
25. Produce boarding passes on the check-in microcomputers.	3.1 a (25)			No reference.			
26. All incoming data will be edited prior to processing.	3.1 a (26)	CMOS will perform edits of data entering and leaving the data base.	CMOSSSS Inc. 1 3.2.1.1				