APPENDIX A

FOW SYSTEM MESSAGES

TABLE 10-I. FOW system message definitions.

FIELD	VALUE	NOTES
FOW:System Access Restriction	0-6	System access restriction 0 = Reserved 1 = Flash Override 2 = Flash 3 = Immediate 4 = Priority 5 = Routine 6 = Reserved
FOW:System Service Restriction On	7	Transmission of 2400-bps communications is inhibited.
FOW:System Service Restriction Off	8	Transmission of 2400-bps communications is allowed.
FOW:Dedicated Channel Mode Countdown	9-12	Change in the local channel from multiple access to dedicated channel mode 12 = Mode change occurring four frames from the present frame. 11 = Mode change occurring three frames from the present frame. 10 = Mode change occurring two frames from the present frame. 9 = Mode change occurring in the next frame.
FOW:Channel Controller Isolated	13	Network is isolated (multiple hop not available).
FOW:Channel Controller Connected	14	Network is connected (multiple hop available).

TABLE 10-I. FOW system message definitions. (concluded)

FIELD	VALUE	NOTES
FOW:Time Slot Change Countdown	15-18	18 = Crypto period rollover occurring four frames from present frame. 17 = Crypto period rollover occurring three frames from present frame. 16 = Crypto period rollover occurring two frames from present frame. 15 = Crypto period rollover occurring in next frame.
FOW:Manual Control Transition Countdown	19-22	NCS-to-NCS control transition 22 = Control transition occurring four frames from the present frame. 21 = Control transition occurring three frames from the present frame. 20 = Control transition occurring two frames from the present frame. 19 = Control transition occurring in the next frame.
FOW:ROW Backoff Number	23-27	Backoff number of contention usage of the ROW slot 23 = 1 24 = 30 25 = 60 26 = 250 27 = 1000

FOW:Next Key Indicator	28-35	Key location to use during the next crypto period 28 = Next key location is location 0 29 = Next key location is location 1 . . . 35 = Next key location is location 7
Reserved	36-63	

APPENDIX B

FOW DIRECTED MESSAGES

TABLE 20-I. FOW:Acknowledge Message message.

FIELD	BITS	VALUE	NOTES
Message Type	6	0	
Source Address	16		Source node address
Destination Address	16		Destination node address
Virtual Port Number	3	0-4 = Demand assigned 5-7 = Reserved	Unique request identifier
Total Size	41		

NOTE: This is sent by the PCC requesting the terminal to acknowledge the just received message. This also assigns ROW capacity for the response (ROW 8).

TABLE 20-II. FOW:Acknowledge Blocks message.

FIELD	BITS	VALUE	NOTES
Message Type	6	1	
Source Address	16		Source node address
Destination Address	16		Destination node address
Virtual port Number	3	0-4 = Demand assigned 5-7 = Reserved	Unique request identifier
Total Size	41		

NOTE: This is sent by the PCC requesting the terminal to acknowledge the just received message blocks. This also assigns ROW capacity for the response (ROW 18).

TABLE 20-III. FOW:Alternate Channel Controller Designate Response message.

FIELD	BITS	VALUE	NOTES
Message Type	6	2	
Acknowledgment	1	0 = Accept control transition 1 = Reject control transition	
Status Report Polling Frequency	2	0 = 5 minutes 1 = 10 minutes 2 = 20 minutes 3 = 40 minutes	Control transition data base item
Queued Service Timeout	11	0-6 = Reserved 7-805 = Timeout value in frames 806-2047 = Reserved	Control transition data base item
Queued Multiple-Hop Service Timeout	11	0-6 = Reserved 7-1342 = Timeout value in frames 1343-2047 = Reserved	Control transition data base item
Unused Service Timeout	11	0-6 = Reserved 7-1342 = Timeout value in frames 1343-2047 = Reserved	Control transition data base item
Minimum Contention ROWs	5	0-2 = Reserved 3-20 = Minimum number of contention ROW slots per frame 21-31 = Reserved	Control transition data base item
Multiple-Hop Limit	2	0 = 1-hop limit (local service only) 1 = 2-hop limit 2 = 3-hop limit 3 = 4-hop limit	Control transition data base item
Total Size	49		

NOTE: This is sent by the PCC in response to a request (ROW 0) from the ACC to assume channel control.

TABLE 20-IV. FOW:Circuit Assignment message.

FIELD	BITS	VALUE	NOTES
Message Type	6	3	
Source Address	16		Source node address
Destination Address	16		Destination node or subnet address
Virtual Port	3	0-4 = Demand assigned 5 = Preassigned 6,7 = Reserved	Unique request identifier
Circuit Type	1	0 = Data 1 = Voice	
Asynchronous Service Indicator	1	0 = Synchronous User I/O 1 = Asynchronous User I/O	
Precedence	3	0 = Preassigned 1 = Flash Override 2 = Flash 3 = Immediate 4 = Priority 5 = Routine 6,7 = Reserved	
Duplex	2	0 = Half-duplex 1 = Full-duplex, source-to-destination 2 = Full-duplex, destination-to-source	Defines communications capability(half- or full-duplex) and, in the case of full-duplex, the direction assignment for the slot.

TABLE 20-IV. FOW:Circuit Assignment message. (concluded)

FIELD	BITS	VALUE	NOTES
I/O Data Rate	4	0 = 75 bps 1 = 300 bps 2 = 600 bps 3 = 1200 bps 4 = 2400 bps 5-15 = Reserved	
Coding	1	0 = No error correction encoding 1 = Error correction encoded	
Modulation Rate	4	0 = 600 sps 1 = 1200 sps 2 = 2400 sps 3 = 3000 sps 4-14 = Reserved 15 = This field not applicable	
Encrypted Data	1	0 = Encrypted data 1 = Data not encrypted	
Total Size	58		

NOTE: This is sent by the PCC in response to a request (ROW 4) from a network member to setup a circuit service. This FOW assigns communication slot time and other parameters of the communication.

TABLE 20-V. FOW:Circuit Setup Response message.

FIELD	BITS	VALUE	NOTES
Message Type	6	4	
Source Address	16		Source node address
Destination Address	16		Destination node subnet address
Virtual Port	3	0-4 = Demand assigned 5 = Preassigned 6,7 = Reserved	Unique request identifier
Request Status	4	0 = Queued, local 1 = Rejected, terminal access restriction violation 2 = Rejected, system access restriction violation 3 = Rejected, no capacity 4 = Rejected, destination not logged in 5 = Rejected, no multiple-hop resources available 6 = Queued, multiple hop 7 = Rejected, system service restriction violation 8 = Rejected, I/O data rate incompatibility 9 = Rejected, network isolated 10 = Queued, dedicated channel 11 = Rejected, channel not available 12 = Rejected, service not assignable 13 = Rejected, frequency switching incompatibility 14-15 = Reserved	
Total Size	45		

NOTE: This is sent by the PCC in response to a request (ROW 4) from a network member to setup a circuit service. This FOW announces if the circuit service is queued or why the service request is rejected.

TABLE 20-VI. FOW:Circuit Teardown message.

FIELD	BITS	VALUE	NOTES
Message Type	6	5	
Source Address	16		Source node address
Destination Address	16		Destination node subnet address
Virtual Port	3	0-4 = Demand assigned 5 = Preassigned 6,7 = Reserved	Unique request identifier
Reason	4	0 = Operator requested teardown 1 = Participant not logged in 2 = Preemption timeout 3 = Queued service timeout 4 = Multiple-hop circuit setup failed 5 = Precedence override 6 = Reserved 7 = End-to-end bit timing loss 8 = I/O data rate incompatible 9 = Unknown service 10 = Reserved 11 = NCS operator requested teardown 12,13 = Reserved 14 = Unused circuit timeout 15 = Reserved	
Total Size	45		

NOTE: This is sent by the PCC to teardown a circuit service. This FOW announces why the circuit service is being torndown.

TABLE 20-VII. FOW:Login Response message.

FIELD	BITS	VALUE	NOTES
Message Type	6	6	
Source Address	16		Node address
Response	3	0 = Accepted 1 = Rejected, no capacity (login count limit exceeded) 2 = Rejected, not authorized 3 = Rejected, ACC already logged in 4 = Rejected, terminal address above demarcation 5 = Rejected, invalid login address 6,7 = Reserved	
Precedence	3	0 = Reserved 1 = Flash Override 2 = Flash 3 = Immediate 4 = Priority 5 = Routine 6,7 = Reserved	Terminal or CC service restriction (maximum allowed precedence level) for demand-assigned service requests
Address Demarcation	16		Dividing line between node and subnet address
Terminal Standard Version	4	0 = Complies with MIL-STD-188-182 1-15 = Reserved	Version of a controller that can control terminals complying with all capabilities of this version of the standard
Total Size	48		

NOTE: This is sent by the PCC in response to a login request (ROW 6) from a network member. This FOW announces the network members service restriction (maximum transmit precedence allowed).

TABLE 20-VIII. FOW:Logout Response message.

FIELD	BITS	VALUE	NOTES
Message Type	6	7	
Source Address	16		Source node address
Reason	3	0 = Terminal requested logout 1 = PCC directed logout 2 = Not authorized 3 = Invalid address on guard list 4 = Response to service request if not logged in 5-7 = Reserved	
Total Size	25		

NOTE: This is sent by the PCC in response to a logout request (ROW 7) from a network member.

TABLE 20-IX. FOW:Message Acknowledgment message.

FIELD	BITS	VALUE	NOTES
Message Type	6	8	
Source Address	16		Source node address
Destination Address	16		Destination node address
Virtual Port	3	0-4 = Demand assigned 5-7 = Reserved	Unique request identifier
Acknowledgment Type	1	0 = All blocks transferred 1 = Message transferred	Value = 1 indicates message was clocked out to destination I/O device
Total Size	42		

NOTE: This is sent by the PCC to the source of a message service identifying that the destination has acknowledged the receipt of the message. This FOW also tears down the message service.

TABLE 20-X. FOW:Message Assignment message.

FIELD	BITS	VALUE	NOTES
Message Type	6	9	
Source Address	16		Source node address
Destination	16		Destination node address
Virtual Port	3	0-4 = Demand assigned 5-7 = Reserved	Unique request identifier
Precedence	3	0 = Reserved 1 = Flash Override 2 = Flash 3 = Immediate 4 = Priority 5 = Routine 6,7 = Reserved	
Starting Block Number	9	0 = First block 1 = Second block . . . 511 = 512th block	Identifies the first 224-bit data block for the assigned transmission
Number of Blocks	5		Number of blocks being transmitted (between 1 and 20).
Last Block Indicator	1	0 = Not last block 1 = Last block	This transmission includes the last block if the value = 1
Coding	1	0 = No error correction encoding 1 = Error correction encoding	

TABLE 20-X. FOW:Message Assignment message. (concluded)

FIELD	BITS	VALUE	NOTES
Modulation Rate	4	0 = 600 sps 1 = 1200 sps 2 = 2400 sps 3 = 3000 sps 4-14 = Reserved 15 = This field not used	
Encrypted Data	1	0 = Encrypted data 1 = Data not encrypted	
Total Size	65		

NOTE: This is sent by the PCC in response to a request (ROW 9) from a network member to setup a message service. This FOW assigns communication slot time and other parameters of the communication.

TABLE 20-XI. FOW:Message Setup Response message.

FIELD	BITS	VALUE	NOTES
Message Type	6	10	
Source Address	16		Source node address
Destination Address	16		Destination node or subnet address
Virtual Port	3	0-4 = Demand assigned 5-7 = Reserved	Unique request identifier
Request Status	4	0 = Queued, local 1 = Rejected, terminal access restriction violation 2 = Rejected, system accessrestriction violation 3 = Rejected, no capacity 4 = Rejected, destination not logged in 5 = Rejected, no multiple-hop resources available 6 = Queued, multiple-hop 7 = Reserved 8 = Reserved 9 = Rejected, network isolated 10-11 = Reserved 12 = Rejected, service not assignable 13-15 = Reserved	
Total Size	45		

NOTE: This is sent by the PCC in response to a request (ROW 9) from a network member to setup a message service. This FOW announces if the message service is queued or why the service request is rejected.

TABLE 20-XII. FOW:Message Teardown message.

FIELD	BITS	VALUE	NOTES
Message Type	6	11	
Source Address	16		Source node address
Destination Address	16		Destination node or subnet address
Virtual Port	3	0-4 = Demand assigned 5-7 = Reserved	Unique request identifier
Reason	4	0 = Operator requested teardown 1 = Participant not logged in 2 = Preemption timeout 3 = Queued service timeout 4 = Reserved 5 = Precedence override 6 = Unacknowledged message delivery 7 = Reserved 8 = Reserved 9 = Unknown service 10 = Reserved 11 = NCS operator requested teardown 12 = Reserved 13-15 = Reserved	
Total Size	45		

NOTE: This is sent by the PCC to teardown a message service. This FOW announces why the message service is being torn down.

TABLE 20-XIII. FOW:Multiple-Hop Begin Assignments Response message.

FIELD	BITS	VALUE	NOTES
Message Type	6	12	
Relay Address	16		Addressee of FOW message
Service Source Address	16		Node address of service source
Virtual Port	3	0-4 = Demand assigned 5 = Preassigned 6,7 = Reserved	Unique request identifier
Total Size	41		

NOTE: This is sent in response to the ACC (ROW 11) by the PCC in a local footprint.

TABLE 20-XIV. FOW:Multiple-Hop Circuit Assignment message.

FIELD	BITS	VALUE	NOTES
Message Type	6	13	
Local Source Address	16		Local source node address to which the assignment is directed.
Local Destination Address	16		Local destination node address to which the assignment is directed.
Service Source Address	16		Node address of service source
Virtual Port	3	0-4 = Demand assigned 5 = Preassigned 6,7 = Reserved	Unique request identifier
Circuit Type	1	0 = Data 1 = Voice	
Asynchronous Service Indicator	1	0 = Synchronous User I/O 1 = Asynchronous User I/O	
Precedence	3	0 = Preassigned 1 = Flash Override 2 = Flash 3 = Immediate 4 = Priority 5 = Routine 6,7 = Reserved	
Duplex	2	0 = Half-duplex 1 = Full-duplex, source-to-destination 2 = Full-duplex, destination-to-source	Defines communications capability (half- or full-duplex) and, in the case of full-duplex, the direction assignment for the slot.

TABLE 20-XIV. FOW:Multiple-Hop Circuit Assignment message. (concluded)

FIELD	BITS	VALUE	NOTES
I/O Data Rate	4	0 = 75 bps 1 = 300 bps 2 = 600 bps 3 = 1200 bps 4 = 2400 bps 5-15 = Reserved	
Coding	1	0 = No error correction encoding 1 = Error correction encoding	
Modulation Rate	4	0 = 600 sps 1 = 1200 sps 2 = 2400 sps 3 = 3000 sps 4-14 = Reserved 15 = This field not used	
Encrypted Data	1	0 = Encrypted data 1 = Data not encrypted	
Total Size	74		

NOTE: This is sent by the PCC in a local footprint telling the source and the destination network members that a multi-hop circuit is setup. This FOW assigns communication slot time and other parameters of the communication.

TABLE 20-XV. FOW:Multiple-Hop Circuit Preemption Response message.

FIELD	BITS	VALUE	NOTES
Message Type	6	14	
Relay Address	16		Addressee of the FOW message
Service Source Address	16		Node address of service source
Virtual Port	3	0-4 = Demand assigned 5-7 = Reserved	Unique request identifier
Total Size	41		

NOTE: This is sent by the PCC in a local footprint responding to the relay's preemption ROW (ROW 12).

TABLE 20-XVI. FOW:Multiple-Hop Circuit Teardown message.

FIELD	BITS	VALUE	NOTES
Message Type	6	15	
Local Source Address	16		Local source node address to which the assignment is directed.
Local Destination Address	16		Local destination node address to which the assign-ment is directed
Service Source Address	16		Node address of service source
Virtual Port	3	0-4 = Demand assigned 5 = Preassigned 6,7 = Reserved	Unique request identifier
Reason	4	0 = Operator requested teardown 1 = Participant not logged in 2 = Preemption timeout 3 = Queued service timeout 4 = Multiple-hop setup failed 5 = Precedence override 6 = Unacknowledged message delivery 7 = End-to-end bit timing loss 8 = I/O data rate incompatible 9 = Unknown service 10 = Loss of path connectivity 11 = NCS operator requested teardown 12 = Destination not found within maximum number of hops 13 = Multiple preemptions 14 = Unused circuit timeout 15 = Reserved	
Total Size	61		

NOTE: This is sent by the PCC to teardown a multi-hop circuit service. This FOW announces why the multi-hop circuit service is being

torn down. This also assigns ROW capacity for the response (ROW 15).

TABLE 20-XVII. FOW:Network Status message.

FIELD	BITS	VALUE	NOTES
Message Type	6	16	
Relay Address	16		Address of CC to which this is directed.
CC Address	16		Address of CC that originated the message
Control Transition Indicator	1	0 = No 1 = Yes	
Local Relay Connectivity	1	0 = Isolated 1 = Connected	
Remote Relay Connectivity	1	0 = Isolated 1 = Connected	
Hops Traversed	2	0 = 1 hop 1 = 2 hops 2 = 3 hops 3 = 4 hops	Distance to originator of network status message (that is, the number of hops).
Total Size	43		

NOTE: This FOW is sent by one PCC to all other CCs within the local network for notification of the other CCs throughout the global network when the network status of a CC changes.

TABLE 20-XVIII. FOW:Network Status Response message.

FIELD	BITS	VALUE	NOTES
Message Type	6	17	
Relay Address	16		Address of CC to which this is directed.
PCC Address	16		Address of PCC that originated the message.
Total Size	38		

NOTE: This FOW is sent by the PCC to acknowledge receipt from the ACC (ROW #16) about the network status of a remote CC (one not in the local footprint).

TABLE 20-XIX. FOW:Null Assignment message.

FIELD	BITS	VALUE	NOTES
Message Type	6	18	
Total Size	6		

NOTE: This FOW assigns a communication slot of 32 building blocks in the communication segment of the frame. This FOW is used to prevent overlapping transmit and receive assignments to half-duplex terminals.

TABLE 20-XXa. FOW:Participant Status Data-Base message.

FIELD	BITS	VALUE	NOTES
Message Type	6	19	
End Indicator	1	0 = No 1 = Yes	Provides indication of the last data-base block.
Participant Status Vector	80		This 80-bit participant status vector is subdivided into 4 identical 20-bit segments. The configuration of each segment is shown in Table 20-XXb.
Terminal Standard Version	4	0 = Complies with MIL-STD-188-182 1-15 = Reserved	Version of a controller that can control terminals that comply all capabilities of this version of the standard
Total Size	91		

NOTE: This FOW message is sent by an PCC immediately following a control transition. This FOW message provides active/queued service status for up to four logged-in terminals. The PCC sends five messages per frame until the status has been provided for all locally logged-in terminals, except that fewer than five messages may be sent in the last frame in which such messages are sent.

TABLE 20-XXb. FOW:Participant status vector segment format.

SUBFIELD	BITS	VALUE	NOTES
Node Address	16	0 = Address not applicable 1- 65,535 = address	Node address of the logged-in network participant to which the address word applies.
Active/Queued Service Status	3	0 = No services active/queued service 1 = One active/queued service 2 = Two active/queued services 3 = Three active/queued services 4 = Four active/queued services 5 = Five active/queued services 6,7 = Reserved	Number of active or queued services for the network participant.
Silent Terminal	1	0 = No 1 = Yes	

TABLE 20-XXI. FOW:Primary Channel Controller Designate message.

FIELD	BITS	VALUE	NOTES
Message Type	6	20	
Status Report Polling Frequency	2	0 = 5 minutes 1 = 10 minutes 2 = 20 minutes 3 = 40 minutes	Control transition data base item
Queued Service Timeout	11	0-6 = Reserved 7-805 = Timeout value in frames 806-2047 = Reserved	Control transition data base item
Queued Multiple-Hop Service Timeout	11	0-6 = Reserved 7-1342 = Timeout value in frames 1343-2047 = Reserved	Control transition data base item
Unused Service Timeout	11	0-6 = Reserved 7-1342= Timeout value in frames 1343-2047 = Reserved	Control transition data base item
Minimum Contention ROWs	5	0-2 = Reserved 3-20 = Minimum number of contention ROW slots per frame 21-31= Reserved	Control transition data base item
Multiple Hop Limit	2	0 = 1 hop (local service only) 1 = 2 hops 2 = 3 hops 3 = 4 hops	Control transition data base item
Total Size	48		

NOTE: This is sent by the PCC to an ACC to assume channel control. This also assigns ROW capacity for the response (ROW 19).

TABLE 20-XXII. FOW:Ranging Assignment message.

FIELD	BITS	VALUE	NOTES
Message Type	6	21	
Source Address	16		Source node address identifying the terminal to which the assignment is made.
Total Size	22		

NOTES: This FOW assigns a ROW slot of 32 building blocks for use by the identified network member for active ranging.

TABLE 20-XXIII. FOW:Relay Ringup message.

FIELD	BITS	VALUE	NOTES
Message Type	6	22	
Relay Address	16		CC to which the message is directed.
Service Source Address	16		Source node address
Service Destination Address	16		Destination node address
Virtual Port	3	0-4 = Demand assigned 5 = Preassigned 6,7 = Reserved	Unique request identifier
Service Type	1	0 = Circuit 1 = Message	
Circuit Type	1	0 = Data 1 = Voice	
Asynchronous Service Indicator	1	0 = Synchronous User I/O 1 = Asynchronous User I/O	
Precedence	3	0 = Preassigned 1 = Flash Override 2 = Flash 3 = Immediate 4 = Priority 5 = Routine 6,7 = Reserved	
Duplex	1	0 = Half-duplex 1 = Full-duplex	
I/O Data Rate	4	0 = 75 bps 1 = 300 bps 2 = 600 bps 3 = 1200 bps 4 = 2400 bps 5-15 = Reserved	

NOTE: This FOW provides requested multi-hop circuit parameters for transfer to adjacent networks. This also assigns ROW capacity for the response (ROW 21).

TABLE 20-XXIII. FOW:Relay Ringup message. (Concluded)

FIELD	BITS	VALUE	NOTES
Multiple-Hop Limit	2	0 = 1 hop 1 = 2 hops 2 = 3 hops 3 = 4 hops	Maximum number of remaining hops allowed (whereby a hop is a radio link through a satellite).
Encrypted Data	1	0 = Encrypted data 1 = Data not encrypted	
Total Size	71		

NOTE: This FOW provides requested multi-hop circuit parameters for transfer to adjacent networks. This also assigns ROW capacity for the response (ROW 21).

TABLE 20-XXIV. FOW:Relay Ringup Response message.

FIELD	BITS	VALUE	NOTES
Message Type	6	23	
Relay Address	16		CC to which the message is directed.
Service Source Address	16		Source node address
Virtual Port	3	0-4 = Demand assigned 5 = Preassigned 6,7 = Reserved	Unique request identifier
Total Size	41		

NOTE: This FOW is sent to acknowledge receipt of a request for multi-hop service setup (ROW 20) by a remote NCS.

TABLE 20-XXV. FOW:Relay Select message.

FIELD	BITS	VALUE	NOTES
Message Type	6	24	
Relay Address	16		CC to which the message is directed.
Service Source Address	16		Source node address
Virtual Port	3	0-4 = Demand assigned 5 = Preassigned 6,7 = Reserved	Unique request identifier
Hops Traversed	2	0 = 1 hop 1 = 2 hops 2 = 3 hops 3 = 4 hops	Distance to originator of the relay select (that is, the number of hops).
Request Status	4	0 = Accepted 1 = Rejected, loss in path connectivity 2 = Rejected, destination not found within maximum number of hops 3 = Rejected, no CC capacity 4 = Rejected, no relay capacity 5 = Rejected, I/O data rate incompatible 6 = Rejected, system service restriction violation 7 = Rejected, system access restriction violation 8 = Rejected, destination busy 9-15 = Reserved	
Total Size	47		

NOTE: This FOW is a response to a request to setup a multi-hop service

(ROW 20) and either accepts or rejects the request. This also assigns ROW capacity for the response (ROW 23).

TABLE 20-XXVI. FOW:Relay Select Response message.

FIELD	BITS	VALUE	NOTES
Message Type	6	25	
Relay Address	16		CC to which the message is directed.
Service Source Address	16		Source node address
Virtual Port	3	0-4 = Demand assigned 5 = Preassigned 6,7 = Reserved	Unique request identifier
Total Size	41		

NOTE: This FOW is a response to ROW 22.

TABLE 20-XXVII. FOW:Report Status message.

FIELD	BITS	VALUE	NOTES
Message Type	6	26	
Source Address	16		Source node address identifying the terminal from which a status report is requested.
Total Size	22		

NOTE: This FOW is sent by the PCC to a network member requesting a status report from the member. This also assigns ROW capacity for the response (ROW 24).

TABLE 20-XXVIII. FOW:Report Terminal Address message.

FIELD	BITS	VALUE	NOTES
Message Type	6	27	
Source Address	16		Source node address identifying the network participant from which an address guard-list report is requested.
Guard List Index	3	0 = Report first three guard list addresses 1 = Report second three guard list addresses 2 = Report third three guard list addresses 3 = Report fourth three guard list addresses 4 = Report last three guard list addresses 5-7 = Reserved	Specifies which guard list addresses to report, in blocks of three (the terminal or CC node address is not reported in this field)
Total Size	25		

NOTE: This FOW is sent by the PCC to a network member requesting a report of guard list addresses from the member. This also assigns ROW capacity for the response (ROW 26).

TABLE 20-XXIX. FOW:Terminal Address Add or Delete message.

FIELD	BITS	VALUE	NOTES
Message Type	6	28	
Source Address	16		Source node address identifying the terminal for which the guard list is to be updated.
Modification	1	0 = Add address 1 = Delete address	
Address	16		Address (node or subnet identifier) to be added or deleted.
Total Size	39		

NOTE: This FOW is sent by the PCC to a network member requesting an addition or deletion to the guard list addresses of the member. This also assigns ROW capacity for the response (ROW 25).

TABLE 20-XXX. FOW:Terminal Channel Assignment message.

FIELD	BITS	VALUE	NOTES
Message Type	6	29	
Node Address	16		Terminal address of terminal that is to change channels
Source Address	16		The original requestor of the channel re-assignment
Channel	8	See Appendix D for Channel numbers	
Circuit Type	1	0 = Data 1 = Voice	NOTE 1
Asynchronous Service Indicator	1	0 = Synchronous User I/O 1 = Asynchronous User I/O	NOTE 1
I/O Data Rate	4	0 = 75 bps 1 = 300 bps 2 = 600 bps 3 = 1200 bps 4 = 2400 bps 5 = 4800 bps 6 = 6000 bps 7 = 9.6k bps 8 = 16k bps 9 = 19.2k bps 10 = 32k bps 11 = 38.4k bps 12-15 = Reserved	NOTE 1

FIELD	BITS	VALUE	NOTES
Encrypted Data	1	0 = Encrypted data 1 = Data not encrypted	NOTE 1
Configuration Code	9	0 = Not Applicable 1-511 = Operationally Assigned	
Channel Type	1	0 = DAMA 1 = Dedicated	

TABLE 20-XXX. FOW:Terminal Channel Assignment message. (concluded)

FIELD	BITS	VALUE	NOTES
Channel Duration	10	0 = Unlimited 1 = 5 minutes 2 = 10 minutes 3 = 15 minutes . . . 1023 = 5115 minutes	NOTE 1
Total Size	73		

NOTE:

1. This field is valid only when the channel type has value of 1.

2. This FOW is sent to a network member instructing the member to move to a different channel of operation a different mode of operation. This also assigns ROW capacity for the response (ROW 27).

TABLE 20-XXXI. FOW:Terminal Channel Return Response message.

FIELD	BITS	VALUE	NOTES
Message Type	6	30	
Source Address	16		Addressee of the FOW message
Total Size	22		

NOTE: This FOW is a response to ROW 28.

TABLE 20-XXXII. Future FOWs.

FIELD	BITS	VALUE	NOTES
Message Type	6	31-63	
Length	7	0-13 = Invalid 14 = 15 bits 15 = 16 bits . . . 127 = 128 bits	Length of this message in bits, including all mandatory fields plus directed message fields
ROW Assignment	1	0 = No assigned ROW slot 1 = Assigned ROW slot	
Communications Assignment	1	0 = No assigned communication slot 1 = Assigned communication slot	
Communication Slot Size	10	0 = One building block 1 = Two building blocks . . . 1023 = 1024 building blocks	Number of building blocks assigned (does not exist if Communication Assignment field equals zero)
Directed Message Fields	Variable		To be completed as future FOWs are developed
Total Size	Variable		

NOTE: Mandatory fields required in all future FOWs to allow existing terminals to parse the FOW, ROW, and communication segments.

APPENDIX C

ROW MESSAGES

TABLE 30-I. ROW:Alternate Channel Controller Designate message.

FIELD	BITS	VALUE	NOTES
Message Type	6	0	
Retry Flag	1	0 = First Attempt 1 = Retry	Indicates whether the particular ROW message is being sent the first time or as a second attempt (retry).
Reserved Bits	53	0	All bits set to zero
Total Size	60		

NOTE: A request from the ACC to assume channel control. The PCC responds with a FOW 2.

TABLE 30-II. ROW:Assign Ranging message.

FIELD	BITS	VALUE	NOTES
Message Type	6	1	
Retry Flag	1	0 = First attempt 1 = Retry	Indicates whether the particular ROW message is being sent the first time or as a second attempt (retry).
Reserved Bits	53	0	All bits set to zero
Total Size	60		

NOTE: A request from a network member to be assigned a ranging slot. The PCC responds with a FOW 21.

TABLE 30-III. ROW:Channel Controller Login message.

FIELD	BITS	VALUE	NOTES
Message Type	6	2	
I/O Data Rate	16	Binary 0000000000000001 = 75 bps 0000000000000010 = 300 bps 0000000000000100 = 600 bps 0000000000001000 = 1200 bps 0000000000010000 = 2400 bps 0000000000100000 = 4800 bps 0000000001000000 = 6000 bps 0000000010000000 = 9.6k bps 0000000100000000 = 16k bps 0000001000000000 = 19.2k bps 0000010000000000 = 32k bps 0000100000000000 = 38.4k bps 0001000000000000 through 1000000000000000 = Reserved	The OR value of all supportable rates is to be sent. The rates above 2400 bps are only for MIL-STD-188-181 operation.
Link Quality	6	0 = 26.0 dB-Hz 1 = 26.5 dB-Hz • • • 62 = 57.0 dB-Hz 63 = 57.5 dB-Hz	Downlink C/N_o in dB-Hz.
Guard List Size	4	0-15	Size of guard list, not including CC node address
Guard List CRC	16		
Connectivity	1	0 = Connected 1 = Isolated	Indicates wheter this CC is connected to its twin CC and cona support multiple-hop communications
Terminal Type	1	0 = Half-duplex 1 = Full-duplex	This allows the PCC to schedule adjacent transmit and receive slots

TABLE 30-III. ROW:Channel Controller Login message (concluded).

FIELD	BITS	VALUE	NOTES
Terminal Standard Version	4	Compliant with: 0 = MIL-STD-188-182 1-15 = Reserved	Highest Version of MIL-STD that the CC complies with
Ranging Type	1	0 = Active 1 = Passive	Indicates ranging mode for assigned ranging
Retry Flag	1	0 = First attempt 1 = Retry	Indicates whether the particular ROW message is being sent the first time or as a second attempt (retry).
Reserved Bits	4	0	All bits set to zero
Total Size	60		

NOTE: A login request from a ACC to join the network. The PCC responds with a FOW 6.

TABLE 30-IV. ROW:Channel Controller Status Report message.

FIELD	BITS	VALUE	NOTES
Message Type	6	3	
I/O Data	16	Binary 0000000000000001 = 75 bps 0000000000000010 = 300 bps 0000000000000100 = 600 bps 0000000000001000 = 1200 bps 0000000000010000 = 2400 bps 0000000000100000 = 4800 bps 0000000001000000 = 6000 bps 0000000010000000 = 9.6k bps 0000000100000000 = 16k bps 0000001000000000 = 19.2k bps 0000010000000000 = 32k bps 0000100000000000 = 38.4k bps 0001000000000000 through 1000000000000000 = Reserved	The OR value of all support able rates is to be sent. The rates above 2400 bps are only for MIL-STD-188-181 operation.
Link Quality	6	0 = 26.0 dB-Hz 1 = 26.5 dB-Hz • • • 62 = 57.0 dB-Hz 63 = 57.5 dB-Hz	Downlink C/N_o in dB-Hz.
Guard List Size	4	0-15	Size of guard list, not including CC node address.
Guard List CRC	16		
Connectivity	1	0 = Connected 1 = Isolated	Indicates whether this CC is connected to its twin CC and can support multiple-hop communications.

TABLE 30-IV. ROW:Channel Controller Status Report message. (concluded)

FIELD	BITS	VALUE	NOTES
Terminal Type	1	0 = Half-duplex 1 = Full-duplex	This allows the PCC to schedule adjacent transmit and receive slots.
Terminal Standard Version	4	Compliant with 0 = MIL-STD-188-182 1-15 = Reserved	Highest version of MIL-STD the CC complies with.
Ranging Type	1	0 = Active 1 = Passive	
Retransmission Flag	1	0 = No retransmission difficulty 1 = Retransmission difficulty	
Reserved Bits	4	0	All bits set to zero
Total Size	60		

NOTE: A status report from a ACC in response to a status report request (FOW 26).

TABLE 30-V. ROW:Circuit Setup message.

FIELD	BITS	VALUE	NOTES
Message Type	6	4	
Destination Address	16		Destination node or subnet address
Virtual Port	3	0-4 = Demand assigned 5-7 = Reserved	Unique request identifier
Circuit Type	1	0 = Data 1 = Voice	
Asynchronous Service Indicator	1	0 = Synchronous User I/O 1 = Asynchronous User I/O	
Precedence	3	0 = Reserved 1 = Flash Override 2 = Flash 3 = Immediate 4 = Priority 5 = Routine 6,7 = Reserved	
Duplex	1	0 = Half-duplex 1 = Full-duplex (invalid for voice communications)	Used only when Dedicated Channel Indicator = 0
I/O Data Rate	4	0 = 75 bps 1 = 300 bps 2 = 600 bps 3 = 1200 bps 4 = 2400 bps 5 = 4800 bps 6 = 6000 bps 7 = 9.6k bps 8 = 16k bps 9 = 19.2k bps 10 = 32k bps 11 = 38.4k bps 12-15 = Reserved	Rates above 2400 bps are not available on 5-kHz DAMA channels
Encrypted Data	1	0 = Encrypted data 1 = Data not encrypted	
Retry Flag	1	0 = First attempt 1 = Retry	Indicates whether the particular ROW message is being sent the first time or as a second attempt (retry).

TABLE 30-V. ROW:Circuit Setup Message. (concluded)

FIELD	BITS	VALUE	NOTES
Global Search	1	0 = Off 1 = On	If off, setup is limited to footprints between local footprint and "home footprint" (expected location). Available only on 5-kHz DAMA Channels
Channel Type	1	0 = 5 kHz 1 = 25 kHz	
Dedicated Channel Indicator	1	0 = Not a request for a dedicated channel 1 = Request for dedicated channel access	
Configuration Code	9	0 = Not Applicable 1-511 = Operationally Assigned	
Channel Duration	10	0 = Unlimited 1 = 5 minutes 2 = 10 minutes 3 = 15 minutes . . . 1023 = 5115 minutes	Used only when Dedicated Channel Indicator = 1
Reserved Bits	1	0	All bits set to zero
Total Size	60		

NOTE: A request from a network member to setup a circuit service. The PCC responds with either FOW 3 or FOW 4 or FOW 13.

TABLE 30-VI. ROW:Circuit Teardown message.

FIELD	BITS	VALUE	NOTES
Message Type	6	5	
Source Address	16		Source node address identifying the terminal that requested circuit setup.
Destination Address	16		Destination node address
Virtual Port	3	0-4 = Demand assigned 5-7 = Reserved	Unique request identifier
Reason	4	0 = Operator requested teardown 1 = Reserved 2 = Reserved 3 = Reserved 4 = Reserved 5 = Precedence override 6 = Destination Busy 7 = End-to-end bit timing loss 8 = I/O data rate incompatible 9 = Unknown service 10-15 = Reserved	
Retry Flag	1	0 = First Attempt 1 = Retry	Indicates whether the particular ROW message is being sent the first time or as a second attempt (retry).
Reserved Bits	14	0	All bits set to zero
Total Size	60		

NOTE: A request from a network member to teardown a queued or active circuit service. The PCC responds with a FOW 5.

TABLE 30-VII. ROW:Login message.

FIELD	BITS	VALUE	NOTES
Message Type	6	6	
I/O Data Rate	16	Binary 0000000000000001 = 75 bps 0000000000000010 = 300 bps 0000000000000100 = 600 bps 0000000000001000 = 1200 bps 0000000000010000 = 2400 bps 0000000000100000 = 4800 bps 0000000001000000 = 6000 bps 0000000010000000 = 9.6k bps 0000000100000000 = 16k bps 0000001000000000 = 19.2k bps 0000010000000000 = 32k bps 0000100000000000 = 38.4k bps 0001000000000000 through 1000000000000000 = Reserved	The OR value of all supportable rates is to be sent. The rates above 2400 bps are only for MIL-STD-188-181 operation.
Link Quality	6	0 = 26.0 dB-Hz 1 = 26.5 dB-Hz ● ● ● 62 = 57.0 dB-Hz 63 = 57.5 dB-Hz	Downlink C/N_o in dB-Hz.
Guard List Size	4	0-15	Size of guard list, not including terminal node address.
Guard List CRC	16		
Terminal Type	1	0 = Half-duplex 1 = Full-duplex	This allows the PCC to schedule adjacent transmit and recieve slots

TABLE 30-VII. ROW: Login message. (concluded)

FIELD	BITS	VALUE	NOTES
Silent Terminal Indicator	1	0 = No 1 = Yes	Indicates whether the terminal wished to be considered a Silent Terminal
Terminal Standard Version	4	Compliant with: 0 = MIL-STD-188-182 1-15 = Reserved	Highest Version of MIL-STD that the terminal complies with
Automatic Frequency Change Capability	1	0 = No 1 = Yes	Indicates whether the terminal can participate in multiple channel operation
Ranging Flag	1	0 = Active 1 = Passive	Indicates ranging mode for assigned ranging
Retry Flag	1	0 = First Attempt 1 = Retry	Indicates whether the particular ROW message is being sent the first time or as a second attempt (retry).
Reserved Bits	3	0	Set all bits to zero
Total Size	60		

NOTE: A login request from a terminal to join the network. The PCC responds with a FOW 6.

TABLE 30-VIII. ROW:Logout message.

FIELD	BITS	VALUE	NOTES
Message Type	6	7	
Retry Flag	1	0 = First Attempt 1 = Retry	Indicates whether the particular ROW message is being sent the first time or as a second attempt (retry).
Reserved Bits	53	0	Set all bits to zero
Total Size	60		

NOTE: A logout request from a terminal to leave the network. The PCC responds with a FOW 7.

TABLE 30-IX. ROW:Message Acknowledgment message.

FIELD	BITS	VALUE	NOTES
Message Type	6	8	
Source Address	16		Source node address
Destination Address	16		Destination node address
Virtual Port	3	0-4 = Demand assigned 5-7 = Reserved	Unique request identifier
Retransmission Flag	1	0 = No retransmission difficulty 1 = Retransmission difficulty	
Reserved Bits	18	0	Set all bits to zero
Total Size	60		

NOTE: A response to a request from the PCC (FOW 0) that means that the message was transfered to the network member's I/O device.

TABLE 30-X. ROW:Message Setup message.

FIELD	BITS	VALUE	NOTES
Message Type	6	9	
Destination Address	16		Destination node address
Virtual Port	3	0-4 = Demand assigned 5-7 = Reserved	Unique request identifier
Precedence	3	0 = Reserved 1 = Flash Override 2 = Flash 3 = Immediate 4 = Priority 5 = Routine 6,7 = Reserved	
Message Length in Data Blocks	9	0 = One block 1 = Two blocks . . . 511 = 512 blocks	Length of message in 224 bit data blocks.
Encrypted Data	1	0 = Encrypted data 1 = Data not encrypted	
Retry Flag	1	0 = First attempt 1 = Retry	Indicates whether the particular ROW message is being sent the first time or as a second attempt (retry).
Global Search	1	0 = Off 1 = On	If off, setup is limited to footprints between local footprint and "home footprint" (expected location).
Reserved Bits	20	0	Set all bits to zero
Total Size	60		

NOTE: A request from a network member to setup a message service. The PCC responds with either FOW 9 or FOW 10.

TABLE 30-XI. ROW:Message Teardown message.

FIELD	BITS	VALUE	NOTES
Message Type	6	10	
Source Address	16		Source node address
Destination Address	16		Destination node or subnet address
Virtual Port	3	0-4 = Demand assigned 5-7 = Reserved	Unique request identifier
Reason	4	0 = Operator requested teardown 1 = Reserved 2 = Preemption timeout 3 = Reserved 4 = Reserved 5 = Precedence override 6 = Destination busy 7 = Reserved 8 = Reserved 9 = Unknown service 10-15= Reserved	
Retry Flag	1	0 = First attempt 1 = Retry	Indicates whether the particular ROW message is being sent the first time or as a second attempt (retry).
Reserved Bits	14	0	Set all bits to zero
Total Size	60		

NOTE: A request from a network member to teardown a queued or active message service. The PCC responds with a FOW 11.

TABLE 30-XII. ROW:Multiple-Hop Begin Assignments message.

FIELD	BITS	VALUE	NOTES
Message Type	6	11	
Service Source Address	16		Source node address
Virtual Port	3	0-4 = Demand assigned 5 = Preassigned 6,7 = Reserved	Unique request identifier
Retry Flag	1	0 = First attempt 1 = Retry	Indicates whether the particular ROW message is being sent the first time or as a second attempt (retry).
Reserved Bits	34	0	Set all bits to zero
Total Size	60		

NOTE: This is sent by the ACC in a local footprint telling the PCC that the destination footprint is starting to set up the multi-hop circuit. The PCC responds with a FOW 12.

TABLE 30-XIII. ROW:Multiple-Hop Circuit Preemption message.

FIELD	BITS	VALUE	NOTES
Message Type	6	12	
Service Source Address	16		Source node address
Virtual Port	3	0-4 = Demand assigned 5-7 = Preassigned	Unique request identifier
Retry Flag	1	0 = First attempt 1 = Retry	Indicates whether the particular ROW message is being sent the first time or as a second attempt (retry).
Reserved Bits	34	0	Set all bits to zero
Total Size	60		

NOTE: This is sent by the ACC in a local footprint telling the PCC that the multi-hop circuit is being preempted. The PCC responds with a FOW 14.

TABLE 30-XIV. ROW:Multiple-Hop Circuit Resumption message.

FIELD	BITS	VALUE	NOTES
Message Type	6	13	
Service Source Address	16		Source node address
Virtual Port	3	0-4 = Demand assigned 5-7 = Reserved	Unique request identifier
Retry Flag	1	0 = First attempt 1 = Retry	Indicates whether the particular ROW message is being sent the first time or as a second attempt (retry).
Reserved Bits	34	0	Set all bits to zero
Total Size	60		

NOTE: This is sent by the ACC in a local footprint telling the PCC that the preempted multi-hop circuit is being resumed. The PCC responds with a FOW 13.

TABLE 30-XV. ROW:Multiple-Hop Circuit Teardown message.

FIELD	BITS	VALUE	NOTES
Message Type	6	14	
Service Source Address	16		Source node address
Virtual Port	3	0-4 = Demand assigned 5 = Preassigned 6,7 = Reserved	Unique request identifier
Reason	4	0 = Operator requested teardown 1 = Participant not logged in 2 = Preemption timeout 3 = Queued service timeout 4 = Multiple-hop setup failed 5 = Precedence override 6 = Reserved 7 = End-to-end bit timing loss 8 = I/O data rate incompatible 9 = Unknown service 10 = Loss of path connectivity 11 = NCS operator-requested teardown 12 = Destination not found within maximum number of hops 13 = Multiple preemptions 14 = Unused circuit timeout 15 = Reserved	
Retry Flag	1	0 = First attempt 1 = Retry	Indicates whether the particular ROW message is being sent the first time or as a second attempt (retry).
Reserved Bits	30	0	All bits set to zero
Total Size	60		

NOTE: This is sent by the ACC in a local footprint telling the PCC that the multi-hop circuit is being torndown. The PCC responds with a FOW 15.

TABLE 30-XVI. ROW:Multiple-Hop Circuit Teardown Response message.

FIELD	BITS	VALUE	NOTES
Message Type	6	15	
Service Source Address	16		Source node address
Virtual Port	3	0-4 = Demand assigned 5 = Preassigned 6,7 = Reserved	Unique request identifier
Retransmission Flag	1	0 = No retransmission difficulty 1 = Retransmission difficulty	
Reserved Bits	34	0	Set all bits to zero
Total Size	60		

NOTE: This is sent by the ACC in a local footprint in response to a PCC requesting teardown of a multi-hop circuit (FOW 15).

TABLE 30-XVII. ROW:Network Status message.

FIELD	BITS	VALUE	NOTES
Message Type	6	16	
CC Address	16		Address of CC that originated the message.
Control Transition Indicator	1	0 = No 1 = Yes	
Local Relay Connectivity	1	0 = Isolated 1 = Connected	
Remote Relay Connectivity	1	0 = Isolated 1 = Connected	
Hops Traversed	2	0 = 1 hop 1 = 2 hops 2 = 3 hops 3 = 4 hops	Distance to originator of network status message (that is, the number of hops).
Retry Flag	1	0 = First attempt 1 = Retry	Indicates whether the particular ROW message is being sent the first time or as a second attempt (retry).
Reserved Bits	32	0	Set all bits to zero
Total Size	60		

NOTE: This ROW is sent by the ACC with information to all other CCs within the local network for notification of the other CCs throughout the global network when the network status of the CC changes.

TABLE 30-XVIII. ROW:Network Status Response message.

FIELD	BITS	VALUE	NOTES
Message Type	6	17	
CC Address	16		Address of CC that originated the message.
Retransmission Flag	1	0 = No retransmission difficulty 1 = Retransmission difficulty	
Reserved Bits	37	0	Set all bits to zero
Total Size	60		

NOTE: This ROW is sent by the ACC to acknowledge receipt of FOW 16.

TABLE 30-XIX. ROW:Blocks Acknowledgment message.

FIELD	BITS	VALUE	NOTES
Message Type	6	18	
Service source Address	16		Source node address identifies service source.
Virtual Port	3	0-4 = Demand assigned 5-7 = Reserved	Unique request identifier
Block Number	9	0 = No Blocks received correctly 1 = Block One 2 = Block Two . . . 511 = Block 511	Number of highest contiguous block received (that is, all data in this block and all lower-numbered blocks have been correctly received). Not applicable when All Blocks Received = 1
All Blocks Received	1	0 = No 1 = Yes	
Retransmission Flag	1	0 = No retransmission difficulty 1 = Retransmission difficulty	
Reserved Bits	24	0	Set all bits to zero
Total Size	60		

NOTE: A response to a request from the PCC (FOW 1) that means that the message was received correctly up to a certain block number.

TABLE 30-XX. ROW:Primary Channel Controller Designate Response message.

FIELD	BITS	VALUE	NOTES
Message Type	6	19	
Retransmission Flag	1	0 = No retransmission difficulty 1 = Retransmission difficulty	
Reserved Bits	53	0	All bits set to zero
Total Size	60		

NOTE: A response to the PCC (FOW 20) by an ACC to assume channel control.

TABLE 30-XXI. ROW:Relay Ringup message.

FIELD	BITS	VALUE	NOTES
Message Type	6	20	
Service Source Address	16		Source node address
Service Destination Address	16		Destination node address
Virtual Port	3	0-4 = Demand assigned 5 = Preassigned 6-7 = Reserved	Unique request identifier
Service Type	1	0 = Circuit 1 = Message	
Circuit Type	1	0 = Data 1 = Voice	
Asynchronous Service Indicator	1	0 = Synchronous User I/O 1 = Asynchronous User I/O	
Precedence	3	0 = Preassigned 1 = Flash Override 2 = Flash 3 = Immediate 4 = Priority 5 = Routine 6,7 = Reserved	
Duplex	1	0 = Half-duplex 1 = Full-duplex	
I/O Data Rate	4	0 = 75 bps 1 = 300 bps 2 = 600 bps 3 = 1200 bps 4 = 2400 bps 5-15 = Reserved	

TABLE 30-XXI. ROW:Relay Ringup message. (concluded)

FIELD	BITS	VALUE	NOTES
Multiple-Hop Limit	2	0 = 1 hop 1 = 2 hops 2 = 3 hops 3 = 4 hops	Maximum number of remaining hops allowed (whereby a hop is a radio link through a satellite).
Encrypted Data	1	0 = Encrypted data 1 = Data not encrypted	
Retry Flag	1	0 = First attempt 1 = Retry	Indicates whether the particular ROW message being sent the first time or as a second attempt (retry).
Reserved Bits	4	0	All bits set to zero
Total Size	60		

NOTE: This ROW is used to determine whether the destination network member is logged into the PCC and identifies the type of service that is being requested. The PCC responses with a FOW 23.

TABLE 30-XXII. ROW:Relay Ringup Response message.

FIELD	BITS	VALUE	NOTES
Message Type	6	21	
Service Source Address	16		Source node address
Virtual Port	3	0-4 = Demand assigned 5 = Preassigned 6-7 = Reserved	
Retransmission Flag	1	0 = No retransmission difficulty 1 = Retransmission difficulty	
Reserved Bits	34	0	All bits set to zero
Total Size	60		

NOTE: This ROW is sent to acknowledge receipt of a request for multi-hop service setup (FOW 22) by the PCC.

TABLE 30-XXIII. ROW:Relay Select message.

FIELD	BITS	VALUE	NOTES
Message Type	6	22	
Service Source Address	16		Source node address
Virtual Port	3	0-4 = Demand assigned 5 = Preassigned 6-7 = Reserved	Unique request identifier
Hops Traversed Flag	2	0 = 1 hop 1 = 2 hops 2 = 3 hops 3 = 4 hops	Distance to originator of the relay select (that is, the number of hops).
Request Status	4	0 = Accepted 1 = Rejected, loss of path connectivity 2 = Rejeted, destination not found within maximum number of hops 3 = Rejected, no CC capacity 4 = Rejected, no relay capacity 5 = Rejected, I/O data rate incompatible 6 = Rejected, system service restriction violation 7 = Rejected, system access restriction violation 8 = Rejected, destination busy (preassigned request) 9-15 = Reserved	
Retry Flag	1	0 = First attempt 1 = Retry	Indicates whether the particular ROW message is being sent the first time or as a second attempt (retry).
Reserved Bits	28	0	All bits set to zero
Total Size	60		

NOTE: This ROW identifies if a multi-hop service is either accepted or rejected. The PCC responses with a FOW 25.

TABLE 30-XXIV. ROW:Relay Select Response message.

FIELD	BITS	VALUE	NOTES
Message Type	6	23	
Service Source Address	16		Source node address
Virtual Port	3	0-4 = Demand assigned 5 = Preassigned 6-7 = Reserved	Unique request identifier
Retransmission Flag	1	0 = No retransmission difficulty 1 = Retransmission difficulty	
Reserved Bits	34	0	All bits set to zero
Total Size	60		

NOTE: This ROW is in response to FOW 25 and acknowledges receipt of the FOW.

TABLE 30-XXV. ROW:Status Report message.

FIELD	BITS	VALUE	NOTES
Message Type	6	24	
I/O Data Rate	16	Binary 0000000000000001 = 75 bps 0000000000000010 = 300 bps 0000000000000100 = 600 bps 0000000000001000 = 1200 bps 0000000000010000 = 2400 bps 0000000000100000 = 4800 bps 0000000001000000 = 6000 bps 0000000010000000 = 9.6k bps 0000000100000000 = 16k bps 0000001000000000 = 19.2k bps 0000010000000000 = 32k bps 0000100000000000 = 38.4k bps 0001000000000000 through 1000000000000000 = Reserved	The OR value of all supportable rates is to be sent. The rates above 2400 bps are not available for 5-kHz DAMA operation.
Link Quality	6	0 = 26.0 dB-Hz 1 = 26.5 dB-Hz ● ● ● 62 = 57.0 dB-Hz 63 = 57.5 dB-Hz	Downlink C/N_o in dB-Hz
Guard List Size	4	0-15	Size of guard list, not including terminal node address
Guard List CRC	16		
Terminal Type	1	0 = Half-duplex 1 = Full-duplex	This allows the PCC to schedule adjacent transmit and recieve slots.
Silent Terminal Indicator	1	0 = No 1 = Yes	

TABLE 30-XXV. ROW:Status Report message. (concluded)

FIELD	BITS	VALUE	NOTES
Terminal Standard Version	4	Compliant with 0 = MIL-STD-188-182 1-15 = Reserved	Highest version of MIL-STD that the terminal complies with.
Automatic Frequency Change Capability	1	0 = No 1 = Yes	
Ranging Type	1	0 = Active 1 = Passive	
Retransmission Field	1	0 = No retransmission difficulty 1 = Retransmission difficulty	
Reserved Bits	3	0	All bits set to zero
Total Size	60		

NOTE: A response to a request to report the network members status (FOW 26).

TABLE 30-XXVI. ROW:Terminal Address Add or Delete Response message.

FIELD	BITS	VALUE	NOTES
Message Type	6	25	
Request Status	2	0 = Address added 1 = Address deleted 2 = Address add failure 3 = Address delete failure	
Address	16		Address to be added/deleted
Retransmission Flag	1	0 = No retransmission difficulty 1 = Retransmission difficulty	
Reserved Bits	35	0	All bits set to zero
Total Size	60		

NOTE: A response to a request to add or delete an address on a guard list (FOW 28).

TABLE 30-XXVII. ROW:Terminal Address Report message.

FIELD	BITS	VALUE	NOTES
Message Type	6	26	
Guard List Index	3	0 = Reporting first three guard list addresses 1 = Reporting second three guard list addresses 2 = Reporting third three guard list addresses 3 = Reporting fourth three guard list addresses 4 = Reporting last three guard list addresses 5-7 = Reserved	Specifies which guard list addresses are being reported.
Address 0	16		First guarded address of those being reported in this ROW message.
Address 1	16	0 = No reported address	Second guarded address of those being reported in this ROW message.
Address 2	16	0 = No reported address	Third guarded address of those being reported in this ROW message.
Retransmis-sion Flag	1	0 = No retransmission difficulty 1 = Retransmission difficulty	
Reserved Bits	2	0	All bits set to zero
Total Size	60		

NOTE: A response to a request to report the addresses on the guard list (FOW 27).

TABLE 30-XXVIII. ROW:Terminal Channel Assignment Response message.

FIELD	BITS	VALUE	NOTES
Message Type	6	27	
Change Response	1	0 = Not moving to new channel 1 = Moving to new channel	
Retransmission Flag	1	0 = No retransmission difficulty 1 = Retransmission difficulty	
Reserved Bits	52	0	All bits set to zero
Total Size	60		

NOTE: A response to direction to move to a different channel (FOW 29).

TABLE 30-XXIX. ROW:Terminal Channel Return message.

FIELD	BITS	VALUE	NOTES
Message Type	6	28	
Retry Flag	1	0 = First Attempt 1 = Retry	Indicates whether the particular ROW message is being sent the first time or as a second attempt (retry).
Reserved Bits	53	0	All bits set to zero
Total Size	60		

Note: Notification of return from a dedicated channel. The PCC responds with a FOW 30.

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APPENDIX D

FREQUENCY PLANS

TABLE 40-I. Current and UHF Follow-on receive and transmit frequencies. (This table will be used for the Channel Frequency fields. See key at end of table.)

CHANNEL NUMBER		UPLINK FREQUENCY (MHz)	DOWNLINK FREQUENCY (MHz)	PRESENT CHANNEL	UFO CHANNEL	NOTES
DECIMAL	HEX					
0	0	NONE	NONE	NONE	N/A	
1	1	SHF	250.350	W1	N1	Fleet broadcast
2	2	SHF	250.400		N'1	"
3	3	SHF	250.450	A1	O1	"
4	4	SHF	250.500		O'1	"
5	5	SHF	250.550	B1	P1	"
6	6	SHF	250.600		P'1	"
7	7	SHF	250.650	C1	Q1	"
8	8	SHF	250.700		Q'1	"
9	9	292.850	251.850	W3	N2	NAVY 25kHz CHANNELS, 41 MHz OFFSET
10	0A	292.950	251.950	A2	O2	"
11	0B	293.050	252.050	B2	P2	"
12	0C	293.150	252.150	C2	Q2	"
13	0D	294.550	253.550	W4	N3	"
14	0E	294.650	253.650	A3	O3	"
15	0F	294.750	253.750	B3	P3	"
16	10	294.850	253.850	C3	Q3	"
17	11	296.250	255.250	W5	N4	"

CHANNEL NUMBER		UPLINK FREQUENCY (MHz)	DOWNLINK FREQUENCY (MHz)	PRESENT CHANNEL	UFO CHANNEL	NOTES
DECIMAL	HEX					
18	12	296.350	255.350	A4	O4	"
19	13	296.450	255.450	B4	P4	"
20	14	296.550	255.550	C4	Q4	NAVY 25kHz CHANNELS, 41 MHz OFFSET
21	15	297.850	256.850	W6	N5	"
22	16	297.950	256.950	A5	O5	"
23	17	298.050	257.050	B5	P5	"
24	18	298.150	257.150	C5	Q5	"
25	19	299.350	258.350	W7	N6	"
26	1A	299.450	258.450	A6	O6	"
27	1B	299.550	258.550	B6	P6	"
28	1C	299.650	258.650	C6	Q6	"
29	1D	306.250	265.250	W8	N7	"
30	1E	306.350	265.350	A7	O7	"
31	1F	306.450	265.450	B7	P7	"
32	20	306.550	265.550	C7	Q7	"
33	21	307.750	266.750	*	N8	"
34	22	307.850	266.850	A8	O8	"
35	23	307.950	266.950	B8	P8	"
36	24	308.050	267.050	C8	Q8	"
37	25	309.150	268.150		N9	"
38	26	309.250	268.250	A9	O9	"
39	27	309.350	268.350	B9	P9	"
40	28	309.450	268.450	C9	Q9	"
41	29	310.650	269.650		N10	"
42	2A	310.750	269.750	A10	O10	"

TABLE 40-I. Current and UHF Follow-on receive and transmit frequencies. (Continued)

CHANNEL NUMBER		UPLINK FREQUENCY (MHz)	DOWNLINK FREQUENCY (MHz)	PRESENT CHANNEL	UFO CHANNEL	NOTES
DECIMAL	HEX					
43	2B	310.850	269.850	B10	P10	"
44	2C	310.950	269.950	C10	Q10	"
45	2D	293.950	260.350	A23-1		DOD 500 kHz CHANNELS/ UFO 25kHz CHANNELS
46	2E	293.975	260.375	A23-2	N11	"
47	2F	294.000	260.400	A23-3		"
48	30	294.025	260.425	A23-4	P11	"
49	31	294.050	260.450	A23-5		"
50	32	294.075	260.475	A23-6	N12	"
51	33	294.100	260.500	A23-7		"
52	34	294.125	260.525	A23-8	P12	"
53	35	294.150	260.550	A23-9		"
54	36	294.175	260.575	A23-10	O11	"
55	37	294.200	260.600	A23-11		"
56	38	294.225	260.625	A23-12	Q11	"
57	39	294.250	260.650	A23-13		"
58	3A	294.275	260.675	A23-14	O12	
59	3B	294.300	260.700	A23-15		DOD 500 kHz CHANNELS/ UFO 25kHz CHANNELS
60	3C	294.325	260.725	A23-16	Q12	"
61	3D	294.350	260.750	A23-17		"
62	3E	294.375	260.775	A23-18		"
63	3F	294.400	260.800	A23-19		"

TABLE 40-I. Current and UHF Follow-on receive and transmit frequencies. (Continued)

CHANNEL NUMBER		UPLINK FREQUENCY (MHz)	DOWNLINK FREQUENCY (MHz)	PRESENT CHANNEL	UFO CHANNEL	NOTES
DECIMAL	HEX					
64	40	294.425	260.825	A23-20		"
65	41	294.450	260.850	A23-21		"
66	42	295.050	261.450	B23-1		"
67	43	295.075	261.475	B23-2		"
68	44	295.100	261.500	B23-3		DOD 500 kHz CHANNELS/ UFO 25kHz CHANNELS
69	45	295.125	261.525	B23-4		"
70	46	295.150	261.550	B23-5		"
71	47	295.175	261.575	B23-6	N13	"
72	48	295.200	261.600	B23-7		"
73	49	295.225	261.625	B23-8	P13	"
74	4A	295.250	261.650	B23-9		"
75	4B	295.275	261.675	B23-10	N14	"
76	4C	295.300	261.700	B23-11		"
77	4D	295.325	261.725	B23-12	P14	"
78	4E	295.350	261.750	B23-13		"
79	4F	295.375	261.775	B23-14	N15	"
80	50	295.400	261.800	B23-15		"
81	51	295.425	261.825	B23-16	P15	"
82	52	295.450	261.850	B23-17		"
83	53	295.475	261.875	B23-18	N16	"
84	54	295.500	261.900	B23-19		"
85	55	295.525	261.925	B23-20	P16	"
86	56	295.550	261.950	B23-21		"

TABLE 40-I. Current and UHF Follow-on receive and transmit frequencies. (Continued)

CHANNEL NUMBER		UPLINK FREQUENCY (MHz)	DOWNLINK FREQUENCY (MHz)	PRESENT CHANNEL	UFO CHANNEL	NOTES
DECIMAL	HEX					
87	57	295.650	262.050	C23-1		"
88	58	295.675	262.075	C23-2	O13	"
89	59	295.700	262.100	C23-3		"
90	5A	295.725	262.125	C23-4	Q13	"
91	5B	295.750	262.150	C23-5		"
92	5C	295.775	262.175	C23-6	O14	"
93	5D	295.800	262.200	C23-7		"
94	5E	295.825	262.225	C23-8	Q14	DOD 500 kHz CHANNELS/ UFO 25kHz CHANNELS
95	5F	295.850	262.250	C23-9		"
96	60	295.875	262.275	C23-10	O15	"
97	61	295.900	262.300	C23-11		"
98	62	295.925	262.325	C23-12	Q15	"
99	63	295.950	262.350	C23-13		"
100	64	295.975	262.375	C23-14	O16	"
101	65	296.000	262.400	C23-15		"
102	66	296.025	262.425	C23-16	Q16	"
103	67	296.050	262.450	C23-17		"
104	68	296.075	262.475	C23-18		"
105	69	296.100	262.500	C23-19		"
106	6A	296.125	262.525	C23-20		"
107	6B	296.150	262.550	C23-21		"
108	6C	297.150	263.550	W2-1		"
109	6D	297.175	263.575	W2-2	N17	"
110	6E	297.200	263.600	W2-3		"

TABLE 40-I. Current and UHF Follow-on receive and transmit frequencies. (Continued)

CHANNEL NUMBER		UPLINK FREQUENCY (MHz)	DOWNLINK FREQUENCY (MHz)	PRESENT CHANNEL	UFO CHANNEL	NOTES
DECIMAL	HEX					
111	6F	297.225	263.625	W2-4	P17	"
112	70	297.250	263.650	W2-5		"
113	71	297.275	263.675	W2-6	N18	"
114	72	297.300	263.700	W2-7		"
115	73	297.325	263.725	W2-8	P18	"
116	74	297.350	263.750	W2-9		"
117	75	297.375	263.775	W2-10	O17	"
118	76	297.400	263.800	W2-11		DOD 500 kHz CHANNELS/ UFO 25 kHz CHANNELS
119	77	297.425	263.825	W2-12	Q17	"
120	78	297.450	263.850	W2-13		"
121	79	297.475	263.875	W2-14	O18	"
122	7A	297.500	263.900	W2-15		"
123	7B	297.525	263.925	W2-16	Q18	"
124	7C	297.550	263.950	W2-17		"
125	7D	297.575	263.975	W2-18		"
126	7E	297.600	264.000	W2-19		"
127	7F	297.625	264.025	W2-20		"
128	80	297.650	264.050	W2-21		"
129	81	302.445	248.845		N27	GAPFILLER 500 kHz CHANNELS/ UFO 5 kHz CHANNELS
130	82	302.450	248.850	G1		"
131	83	302.455	248.855		N28	"

TABLE 40-I. Current and UHF Follow-on receive and transmit frequencies. (Continued)

CHANNEL NUMBER		UPLINK FREQUENCY (MHz)	DOWNLINK FREQUENCY (MHz)	PRESENT CHANNEL	UFO CHANNEL	NOTES
DECIMAL	HEX					
132	84	302.465	248.865		N29	"
133	85	302.475	248.875	G2	N30	"
134	86	302.485	248.885		N31	"
135	87	302.495	248.895		N32	"
136	88	302.500	248.900	G3		"
137	89	302.505	248.905		N33	"
138	8A	302.515	248.915		N34	"
139	8B	302.525	248.925	G4	N35	"
140	8C	302.535	248.935		N36	"
141	8D	302.545	248.945		N37	"
142	8E	302.550	248.950	G5		GAPFILLER 500 kHz CHANNELS/ UFO 5 kHz CHANNELS
143	8F	302.555	248.955		N38	"
144	90	302.565	248.965		N39	"
145	91	302.575	248.975	G6	O27	"
146	92	302.585	248.985		O28	"
147	93	302.595	248.995		O29	"
148	94	302.600	249.000	G7		"
149	95	302.605	249.005		O30	"
150	96	302.615	249.015		O31	"
151	97	302.625	249.025	G8	O32	"
152	98	302.635	249.035		O33	"
153	99	302.645	249.045		O34	"
154	9A	302.650	249.050	G9		"
155	9B	302.655	249.055		O35	"

TABLE 40-I. Current and UHF Follow-on receive and transmit frequencies. (Continued)

CHANNEL NUMBER		UPLINK FREQUENCY (MHz)	DOWNLINK FREQUENCY (MHz)	PRESENT CHANNEL	UFO CHANNEL	NOTES
DECIMAL	HEX					
156	9C	302.665	249.065		O36	"
157	9D	302.675	249.075	G10	O37	"
158	9E	302.685	249.085		O38	"
159	9F	302.695	249.095		O39	"
160	A0	302.700	249.100	G11		"
161	A1	302.705	249.105		P27	"
162	A2	302.715	249.115		P28	"
163	A3	302.725	249.125	G12	P29	"
164	A4	302.735	249.135		P30	"
165	A5	302.745	249.145		P31	"
166	A6	302.750	249.150	G13		"
167	A7	302.755	249.155		P32	"
168	A8	302.765	249.165		P33	GAPFILLER 500 kHz CHANNELS/ UFO 5 kHz CHANNELS
169	A9	302.775	249.175	G14	P34	"
170	AA	302.785	249.185		P35	"
171	AB	302.795	249.195		P36	"
172	AC	302.800	249.200	G15		"
173	AD	302.805	249.205		P37	"
174	AE	302.815	249.215		P38	"
175	AF	302.825	249.225	G16	P39	"
176	BO	302.835	249.235		Q27	"
177	B1	302.845	249.245		Q28	"
178	B2	302.850	249.250	G17		"
179	B3	302.855	249.255		Q29	"

TABLE 40-I. Current and UHF Follow-on receive and transmit frequencies. (Continued)

CHANNEL NUMBER		UPLINK FREQUENCY (MHz)	DOWNLINK FREQUENCY (MHz)	PRESENT CHANNEL	UFO CHANNEL	NOTES
DECIMAL	HEX					
180	B4	302.865	249.265		Q30	"
181	B5	302.875	249.275	G18	Q31	"
182	B6	302.885	249.285		Q32	"
183	B7	302.895	249.295		Q33	"
184	B8	302.900	249.300	G19		"
185	B9	302.905	249.305		Q34	"
186	BA	302.915	249.315		Q35	"
187	BB	302.925	249.325	G20	Q36	"
188	BC	302.935	249.335		Q37	"
189	BD	302.945	249.345		Q38	"
190	BE	302.950	249.350			"
191	BF	302.955	249.355		Q39	"
192	CO	307.750	254.150	GA		GAPFILLER 25 kHz (UFO CHAN N8 UPLINK)
193	C1	311.150	257.550	GB		GAPFILLER 25 kHz
194	C2	316.955	243.855	W9		AFSAT/ LEASAT NON-PROC. 5 kHz REPLACE-MENT CHANNELS
195	C3	316.960	243.860	W10		"
196	C4	316.975	243.875	W11		"
197	C5	317.000	243.900	W12		"
198	C6	317.010	243.910	W13		"
199	C7	317.015	243.915		N19	"

TABLE 40-I. Current and UHF Follow-on receive and transmit frequencies. (Continued)

CHANNEL NUMBER		UPLINK FREQUENCY (MHz)	DOWNLINK FREQUENCY (MHz)	PRESENT CHANNEL	UFO CHANNEL	NOTES
DECIMAL	HEX					
200	C8	317.025	243.925		N20	"
201	C9	317.035	243.935		N21	"
202	CA	317.045	243.945	A11	N22	"
203	CB	317.055	243.955	A12	N23	"
204	CC	317.065	243.965	A14	N24	"
205	CD	317.075	243.975	A16	N25	"
206	CE	317.085	243.985	A18	N26	"
207	CF	317.090	243.990	A19		"
208	DO	317.095	243.995	A20	O19	"
209	D1	317.100	244.000	A21		"
210	D2	317.105	244.005		O20	"
211	D3	317.110	244.010	A22		"
212	D4	317.115	244.015		O21	"
213	D5	317.125	244.025		O22	"
214	D6	317.135	244.035		O23	"
215	D7	317.145	244.045	B11	O24	AFSAT/ LEASAT NON-PROC. 5 kHz REPLACE-MENT CHANNELS
216	D8	317.155	244.055	B12	O25	"
217	D9	317.165	244.065	B14	O26	"
218	DA	317.175	244.075	B16	P19	"
219	DB	317.185	244.085	B18	P20	"
220	DC	317.190	244.090	B19		"
221	DD	317.195	244.095	B20	P21	"

TABLE 40-I. Current and UHF Follow-on receive and transmit frequencies. (Continued)

CHANNEL NUMBER		UPLINK FREQUENCY (MHz)	DOWNLINK FREQUENCY (MHz)	PRESENT CHANNEL	UFO CHANNEL	NOTES
DECIMAL	HEX					
222	DE	317.200	244.100	B21		"
223	DF	317.205	244.105		P22	"
224	EO	317.210	244.110	B22		"
225	E1	317.215	244.115		P23	"
226	E2	317.225	244.125		P24	"
227	E3	317.235	244.135		P25	"
228	E4	317.245	244.145	C11	P26	"
229	E5	317.255	244.155	C12	Q19	"
230	E6	317.265	244.165	C14	Q20	"
231	E7	317.275	244.175	C16	Q21	"
232	E8	317.285	244.185	C18	Q22	"
233	E9	317.290	244.190	C19		"
234	EA	317.295	244.195	C20	Q23	"
235	EB	317.300	244.200	C21		"
236	EC	317.305	244.205		Q24	AFSAT/ LEASAT NON-PROC. 5kHz REPLACE-MENT CHANNEL
237	ED	317.310	244.210	C22		"
238	EE	317.315	244.215		Q25	"
239	EF	317.325	244.225		Q26	"
240	FO					
241	F1					
242	F2					
243	F3					

TABLE 40-I. Current and UHF Follow-on receive and transmit frequencies. (Continued)

CHANNEL NUMBER		UPLINK FREQUENCY (MHz)	DOWNLINK FREQUENCY (MHz)	PRESENT CHANNEL	UFO CHANNEL	NOTES
DECIMAL	HEX					
244	F4					
245	F5					
246	F6					
247	F7					
248	F8					
249	F9					
250	FA					
251	FB					
252	FC					
253	FD					
254	FE					
255	FF					

TABLE 40-I. Current and UHF Follow-on receive and transmit frequencies. (Concluded)

* 307.750 MHz was used as the Gapfiller Channel A uplink frequency. 266.750 MHz is not in correct use as a downlink frequency.

Key to channel numbers: There are several frequency plans used on UHF satellites for the DoD. The FLTSATCOM satellites use frequency plans A, B, and C. The Leased Satellites (LEASATS) use X, Y, and Z, which are abbreviated plans A, B, and C (LEASATs have fewer channels). In addition, LEASAT has plan W, which shares frequencies with AFSATCOM polar frequency plan E. Gapfiller has been labeled for this table as "G". UHF Follow-On (UFO) uses four frequency plans, N, O, P, and Q. In addition, there are alternate Fleet Broadcast downlink frequencies labeled N', O', P', and Q'.

Table 30-IA lists "present Channel" and "UFO Channel" as follows: Frequency plan, transponder number, and an optional transponder subdivision. As an example, Channel Number 46 (Hex 2E) is A23-2. This corresponds to FLTSATCOM frequency plan A, a DoD 500 kHz wideband channel (used as a 25 kHz sub-channel) which is being replaced by UFO 25 kHz channel N11 (frequency plan N, transponder 11).

CONCLUDING MATERIAL

Custodians:

Army - CR
Navy - EC
Air Force - 90

Review activities:

Army - AM, SC, PT
Navy - MC, NC, TD
Air Force - 02, 17, 19, 89, 90, 93
DLA - DH
NSA - NS

User Activities:

Army - AC, MI
Navy - OM
Air Force - 11, 13, 19
ECAC - --
DMA - MP

Preparing Activity:

DISA - DC

Agent:

N/A

(Project TCTS-1820)

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